25 OTTOBRE 2024

GAMIFICATION

IRENE.RONGA@UNITO.IT

Vantaggi del digitale e della realta virtuale

Digitale e virtuale: adattabile e trasferibile

Accessibilità

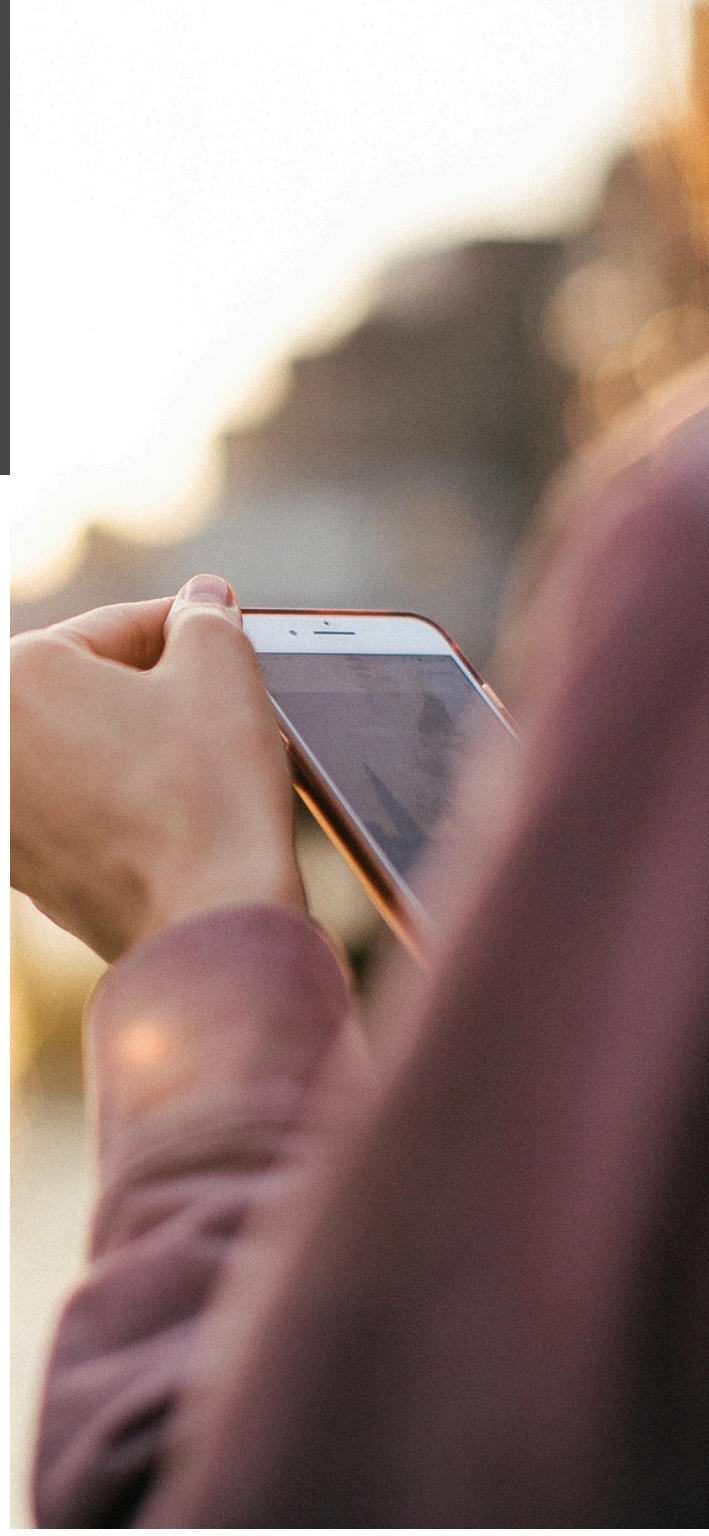
Sicurezza

User-centred

Mondi impossibili e controllabili

Accessibilità

- Gli strumenti digitali possono essere fruiti "a distanza" - anche con il controllo diretto e online dello sperimentatore/terapeuta
- Contesto terapeutico
- Contesto risorse umane
- Contesto di training



Il contesto terapeutico e-health

Scopri il Polo | Servizi | Aderenti | Filiere | Progetti | Finanziamenti e bandi | Internazionalizzazione | News & eventi

Mindset

Piattaforma integrata per la riabilitazione cognitiva

Mercati di applicazione

e-Health.

Obiettivo

Stimolare e valutare le competenze di orientamento spaziale nel paziente con traumi cerebrali congeniti o indotti (ictus, malattie neurodegenerative, traumi) e migliorare il processo di riabilitazione cognitiva tramite un progetto di training di videogiochi terapeutici personalizzati.

Strategia Nazionale di Specializzazione Intelligente

L'obiettivo è creare nuove catene del valore che, partendo dalla ricerca e sviluppo, arrivino fino alla generazione di prodotti e servizi innovativi e allo sviluppo delle tecnologie abilitanti (key enabling technologies) per la realizzazione delle successive generazioni di prodotti per far crescere la ricchezza, migliorare la sua distribuzione e scommettere sulla possibilità di nuovi posti di lavoro che possano durare nel tempo.

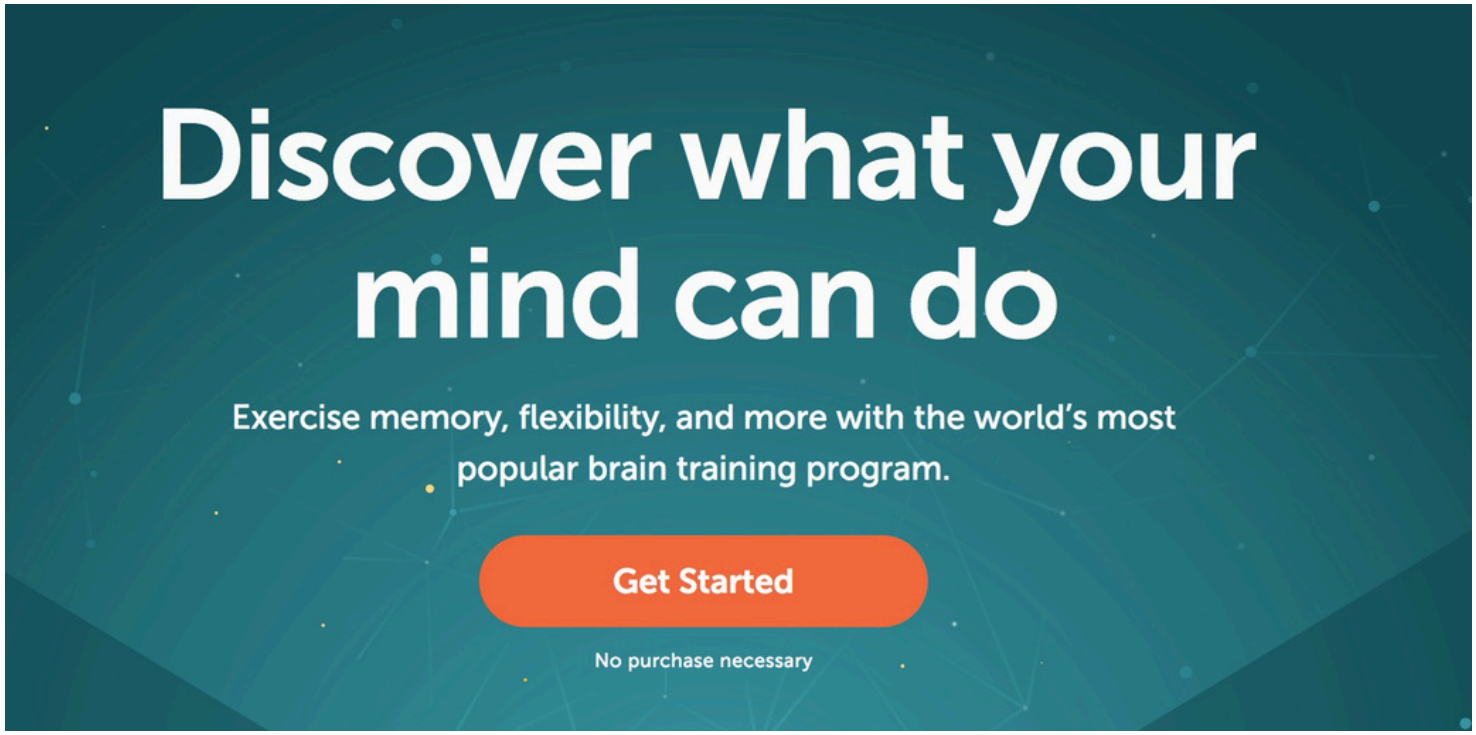
Salute, alimentazione, qualità della vita	Active & healthy ageing: tecnologie per l'invecchiamento attivo e l'assistenza domiciliare E-health, diagnostica avanzata, medical devices e mini invasività Medicina rigenerativa, predittiva e personalizzata Biotecnologie, bioinformatica e sviluppo farmaceutico Sviluppo dell'agricoltura di precisione e l'agricoltura del futuro

Biofeedback e neurofeedback a distanza

Assessment neuropsicologici digitalizzati

https://drafterleo.github.io/schulte/

Training per il potenziamento di funzione cognitive in soggetti sani



Funziona?

Review | Published: 12 July 2021

A Game a Day Keeps Cognitive Decline Away? A Systematic Review and Meta-Analysis of Commercially-Available Brain Training Programs in Healthy and Cognitively Impaired Older Adults

Lan Nguyen ✉, Karen Murphy & Glenda Andrews

Neuropsychology Review (2021) | Cite this article

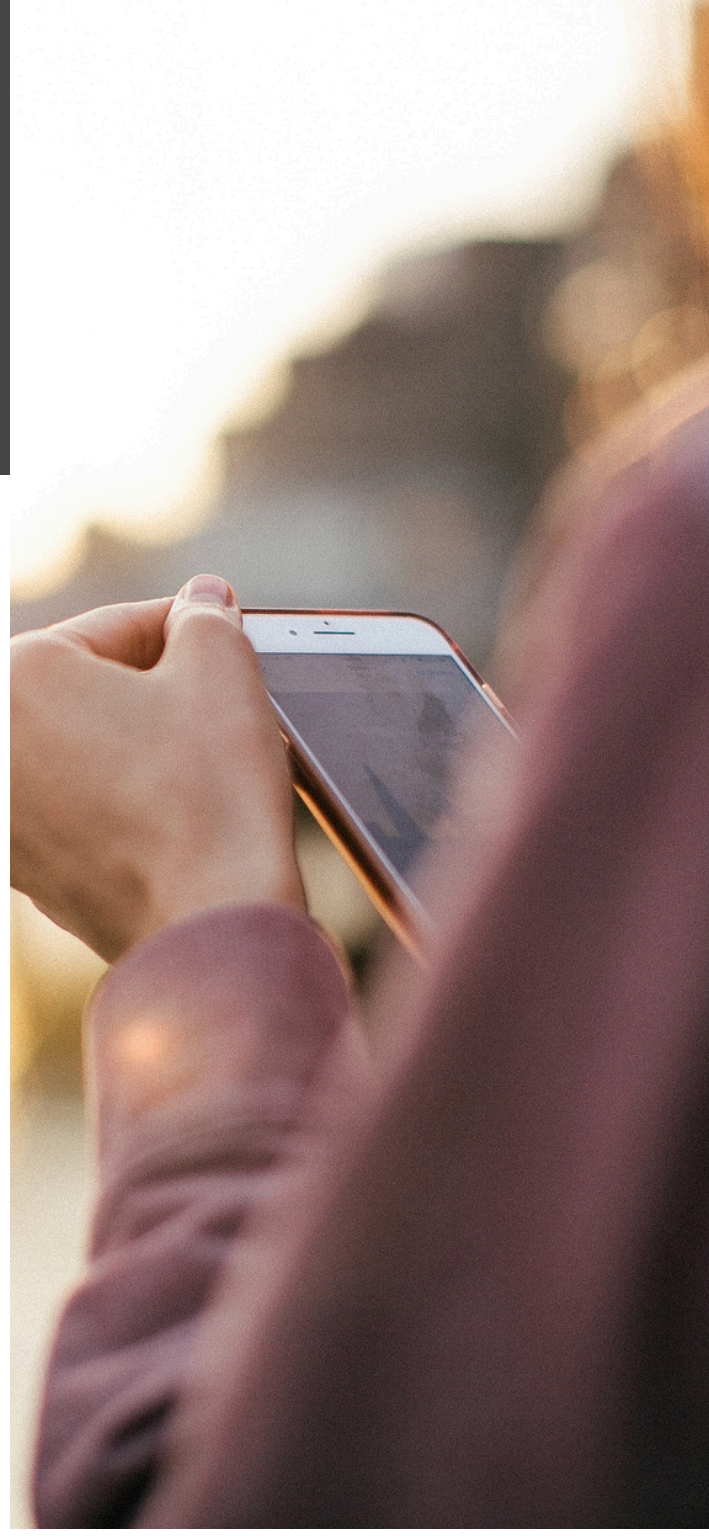
629 Accesses | **1** Citations | Metrics

Abstract

The rising prevalence rates of age-related cognitive impairment are a worldwide public concern, bringing about a surge in the number of "brain training" programs commercially available to the general public. Numerous companies advertise that their products improve memory and protect against cognitive decline, though researchers have voiced concerns regarding the validity of such claims. To address this issue, the current meta-analytic

Sicurezza

- Gli strumenti digitali sono fruibili da casa e permettono di ricreare spazi esplorabili enormi senza muoversi
- Facilitano la gestione del percorso di training/riabilitativo per utente/paziente e caregiver



Training di memoria spaziale in realtà virtuale

Fig. 2 Three-dimensional street view of Reh@City. In a first-person navigation, users are given goal instructions supported with a mini-map indicating the optimal path (*green line and arrow*). Time and point counters are used to provide feedback on performance

FARIA ET AL. 2016

La gamification

- Arricchire i percorsi di apprendimento e gratificazione di elementi di gioco
- Utile anche nelle app commerciali per favorire un uso sistematico

Training dedicati o videogames?

- E' possibile che un gioco funzioni meglio di un training?

Comparare training cognitivi a videogiochi commerciali

The power of play: The effects of Portal 2 and Lumosity on cognitive and noncognitive skills

Valerie J. Shute*, Matthew Ventura, Fengfeng Ke

Florida State University, College of Education, 1114 West Call Street, Tallahassee, FL 32306-4453, USA

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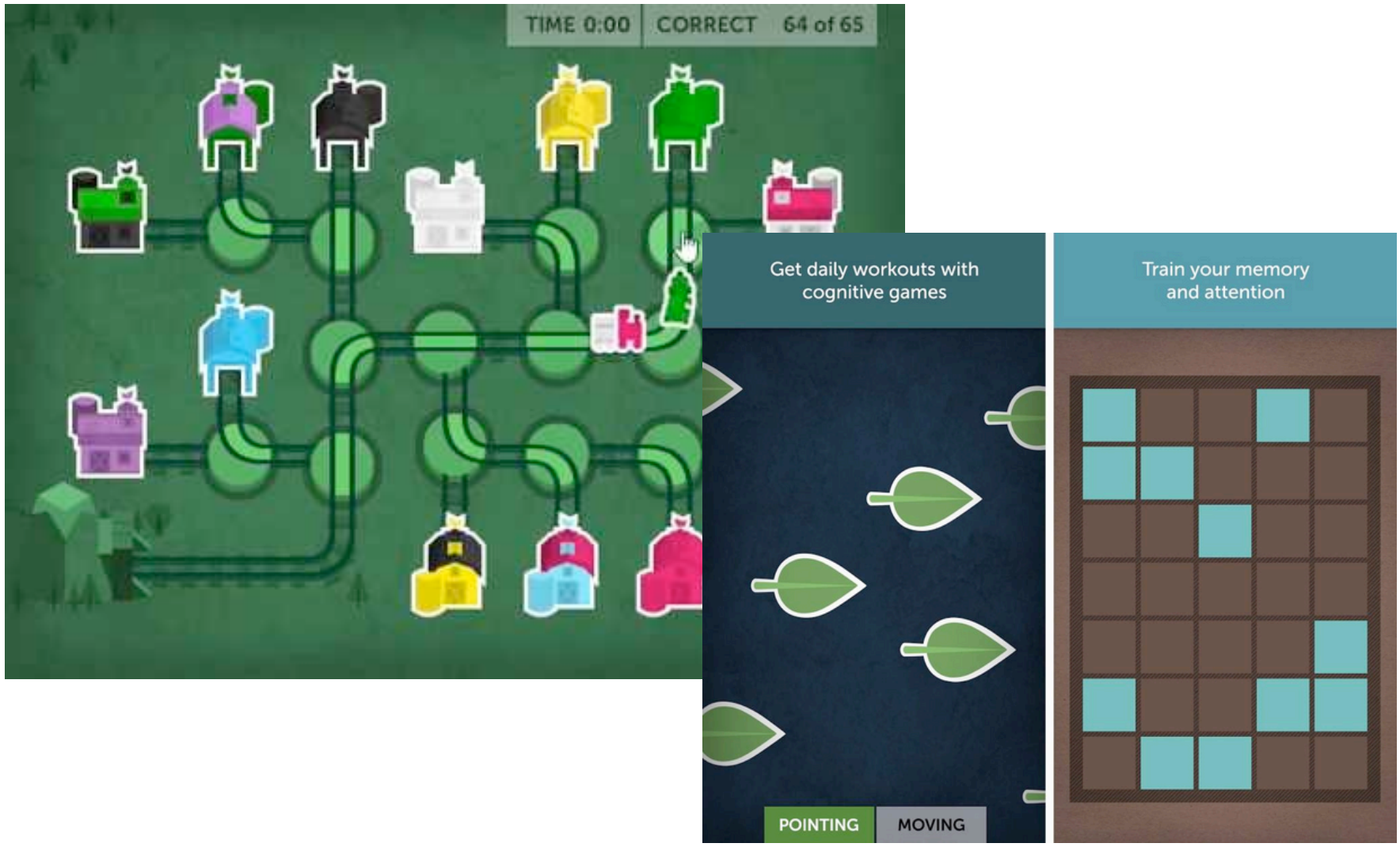
Assessment
Persistence
Problem solving
Spatial skills
Videogames

ABSTRACT

In this study, we tested 77 undergraduates who were randomly assigned to play either a popular video game (Portal 2) or a popular brain training game (Lumosity) for 8 h. Before and after gameplay, participants completed a set of online tests related to problem solving, spatial skill, and persistence. Results revealed that participants who were assigned to play Portal 2 showed a statistically significant advantage over Lumosity on each of the three composite measures—problem solving, spatial skill, and persistence. Portal 2 players also showed significant increases from pretest to posttest on specific small- and large-scale spatial tests while those in the Lumosity condition did not show any pretest to posttest differences on any measure. Results are discussed in terms of the positive impact video games can have on cognitive and noncognitive skills.

Comparare training cognitivi a videogiochi commercili



LUMOSITY

Comparare training cognitivi a videogiochi commercili

PORTAL VIDEOGAME

Comparare training cognitivi a videogiochi commercili

Table 1
Descriptive statistics for Portal 2 ($n = 42$) and Lumosity ($n = 34$).

	PORTAL 2		LUMOSITY	
	Mean	SD	Mean	SD
Raven's (pre)	8.39	2.29	8.24	2.31
Raven's (post)	8.51	2.33	7.65	2.60
Insight (pre)	1.30	0.97	1.40	1.09
Insight (post)	1.36	0.91	0.96	0.99
RAT (pre)	2.59	1.40	2.65	1.28
RAT (post)	2.83	1.34	2.56	1.33
Problem Solving (pre)	0.03	0.67	0.01	0.76
Problem Solving (post)	0.16	0.62	−0.18	0.67
MRT (pre)	1.57	0.27	1.41	0.37
MRT (post)	1.65	0.27	1.45	0.37
SOT (pre)	36.03	28.79	35.68	25.11
SOT (post)	32.00	26.06	30.60	26.02
VSNA test (pre)	127.02	112.48	142.73	95.62
VSNA test (post)	91.03	29.39	115.45	86.23
Spatial Ability (pre)	0.15	0.77	−0.17	0.84
Spatial Ability (post)	0.23	0.53	−0.27	1.00
Picture Comparison (post only)	136.01	42.63	118.03	45.50
Persistence self-report (pre only)	3.91	0.62	4.00	0.67
Persistence (post)	0.18	0.89	−0.20	0.93

Notes. For SOT and VSNA measures, lower scores reflect greater spatial skills as they represent angular disparity and time to complete task, respectively. Average scores were computed for problem solving skill and spatial ability by standardizing each relevant measure and putting the tests on the same scale (higher is better).

SHUTE ET AL. 2015

I videogiochi sono in grado di migliorare le funzioni cognitive?

Gli effetti dei videogames

Psychological Bulletin
2018, Vol. 144, No. 1, 77–110

0033-2909/18/$12.00 http://dx.doi.org/10.1037/bul0000130

Meta-Analysis of Action Video Game Impact on Perceptual, Attentional, and Cognitive Skills

Benoit Bediou
Université de Genève

Deanne M. Adams and Richard E. Mayer
University of California, Santa Barbara

Elizabeth Tipton
Teachers College, New York, New York

C. Shawn Green
University of Wisconsin–Madison

Daphne Bavelier
Université de Genève

The ubiquity of video games in today's society has led to significant interest in their impact on the brain and behavior and in the possibility of harnessing games for good. The present meta-analyses focus on one specific game genre that has been of particular interest to the scientific community—action video games, and cover the period 2000–2015. To assess the long-lasting impact of action video game play on various domains of cognition, we first consider cross-sectional studies that inform us about the cognitive profile of habitual action video game players, and document a positive average effect of about half a standard deviation ($g = 0.55$). We then turn to long-term intervention studies that inform us about the possibility of causally inducing changes in cognition via playing action video games, and show a smaller average effect of a third of a standard deviation ($g = 0.34$). Because only intervention studies using other commercially available video game genres as controls were included, this latter result highlights the fact that not all games equally impact cognition. Moderator analyses indicated that action video game play robustly enhances the domains of top-down attention and spatial cognition, with encouraging signs for perception. Publication bias remains, however, a threat with average effects in the published literature estimated to be 30% larger than in the full literature. As a result, we encourage the field to conduct larger cohort studies and more intervention studies, especially those with more than 30 hours of training.

Sensibilità al contrasto

Enhancing the contrast sensitivity function through action video game training

Renjie Li[1], **Uri Polat**[2], **Walter Makous**[1], and **Daphne Bavelier**[1]

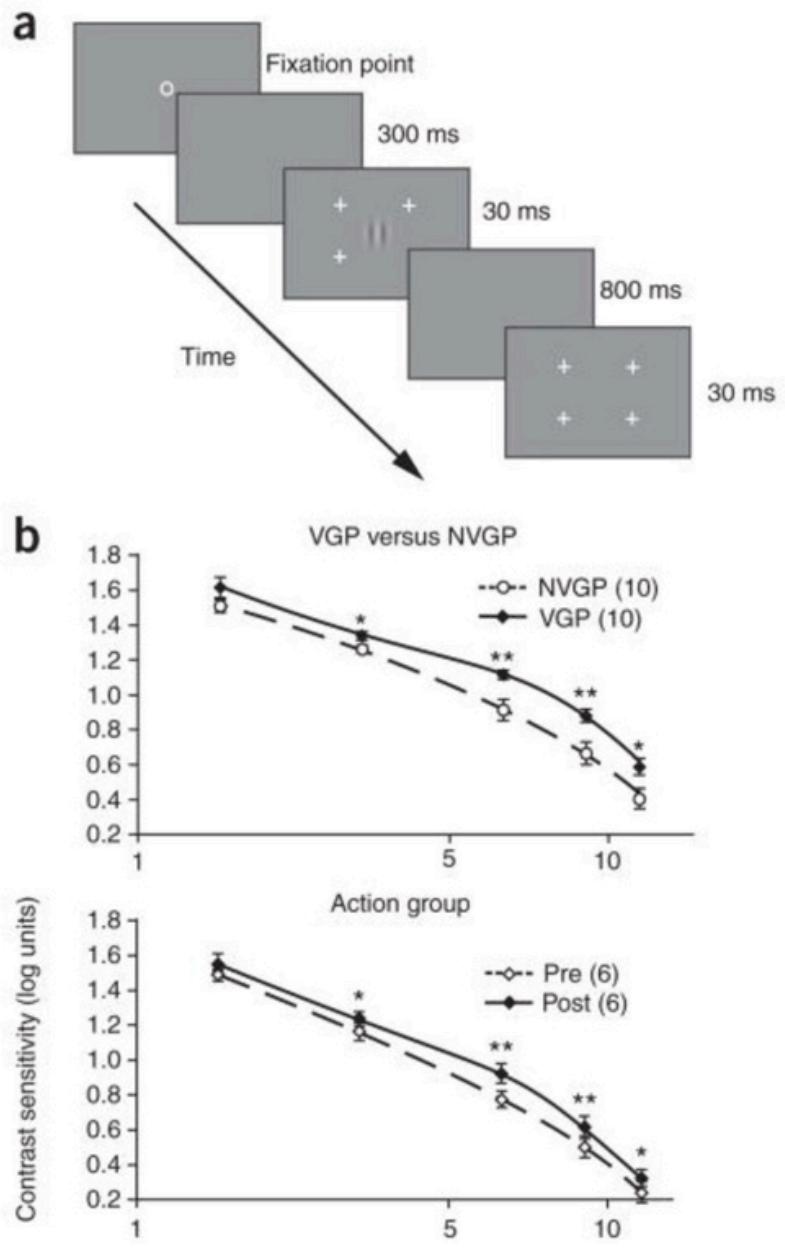
[1] Brain and Cognitive Sciences Department and Center for Visual Science, University of Rochester, Rochester, New York, USA

[2] Goldschleger Eye Research Institute, Tel Aviv University, Tel Hashomer, Israel

Abstract

The contrast sensitivity function (CSF) is routinely assessed in clinical evaluation of vision and is the primary limiting factor in how well one sees. CSF improvements are typically brought about by correction of the optics of the eye with eyeglasses, contact lenses or surgery. We found that the very act of action video game playing also enhanced contrast sensitivity, providing a complementary route to eyesight improvement.

Sensibilità al contrasto



Perché un gioco può essere meglio di un training?

- Sono in grado di motivare gli utenti meglio di un training, grazie a una trama avvincente o dei compiti che favoriscano il coinvolgimento
- Limita la frustrazione (agendo sull'implicito).

I videogiochi come strumento di assessment?

Assessment o videogame?

- Permette di osservare l'utente/paziente a lavoro in un contesto neutro, senza il bisogno di un intervistatore
- E' più difficile per l'utente/paziente comprendere l'oggetto del task (limitare l'ansia e favorire la spontaneià)

Take home messagge

Usare i videogame come training e assessment

Diverti mento

GLI UTENTI UTILIZZANO I GIOCHI PIÙ VOLENTIERI DEI TRAINING

Efficacia

I GIOCHI POSSONO ESSERE ANCHE PIÙ EFFICACI DEI TRAINING NEL MIGLIORARE LE FUNZIONI COGNITIVE

Svantaggi

NON SEMPRE RAPPRESENTANO STRUMENTI VALIDATI

Fare l'impossible

- La realtà virtuale apre delle possibilità che non sono realizzabili nel mondo reale

Un mondo (virtuale) di possibilità

Virtual race transformation reverses racial in-group bias

Béatrice S. Hasler, Bernhard Spanlang, Mel Slater

Published: April 24, 2017 • https://doi.org/10.1371/journal.pone.0174965

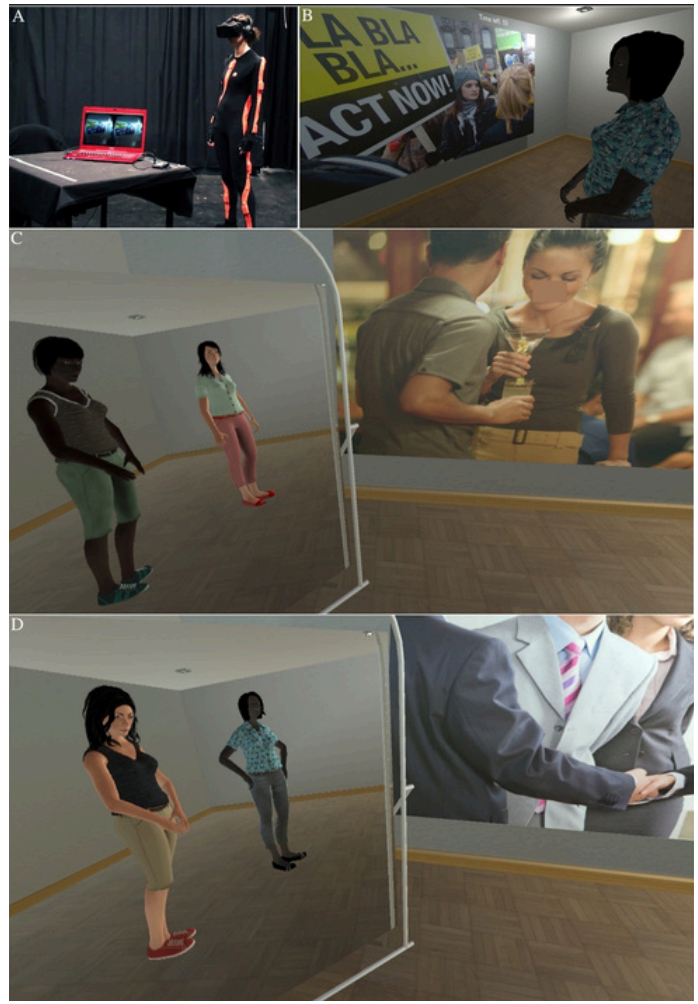
Abstract
Introduction
Results
Discussion
Methods
Supporting information
Acknowledgments
Author Contributions
References

Reader Comments (0)
Figures

Abstract

People generally show greater preference for members of their own racial group compared to racial out-group members. This type of 'in-group bias' is evident in mimicry behaviors. We tend to automatically mimic the behaviors of in-group members, and this behavior is associated with interpersonal sensitivity and empathy. However, mimicry is reduced when interacting with out-group members. Although race is considered an unchangeable trait, it is possible using embodiment in immersive virtual reality to engender the illusion in people of having a body of a different race. Previous research has used this technique to show that after a short period of embodiment of White people in a Black virtual body their implicit racial bias against Black people diminishes. Here we show that this technique powerfully enhances mimicry. We carried out an experiment with 32 White (Caucasian) female participants. Half were embodied in a White virtual body and the remainder in a Black virtual body. Each interacted in two different sessions with a White and a Black virtual character, in counterbalanced order. The results show that dyads with the same virtual body skin color expressed greater mimicry than those of different color. Importantly, this effect occurred depending on the virtual body's race, not participants' actual racial group. When embodied in a Black virtual body, White participants treat Black as their novel in-group and Whites become their novel out-group. This reversed in-group bias effect was obtained regardless of participants' level of implicit racial bias. We discuss the theoretical and practical implications of this surprising psychological phenomenon.

Un mondo (virtuale) di possibilità



HASLER ET AL. 2017

Fare l'impossibile

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Contents lists available at ScienceDirect

Computers & Education

journal homepage: www.elsevier.com/locate/compedu

Mastery experiences in immersive virtual reality promote pro-environmental waste-sorting behavior

Valdemar Aksel Stenberdt, Guido Makransky *

University of Copenhagen, Institute of Psychology, Øster Farimagsgade 2A, 1353, Copenhagen, Denmark

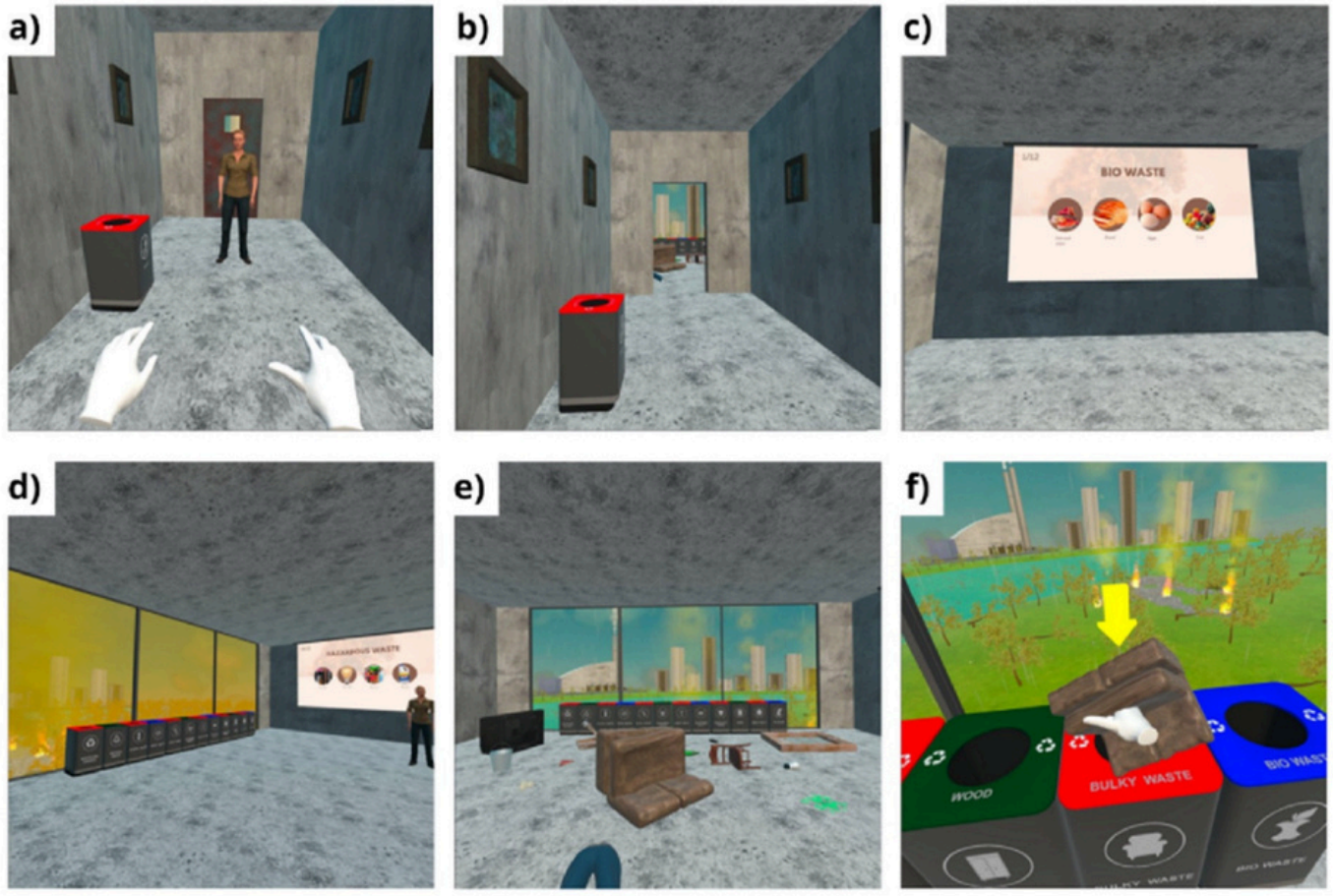
ARTICLE INFO

Keywords:
Virtual reality
Climate change education
Waste management
Exaggerated feedback

ABSTRACT

The rapid digitalization following COVID-19 necessitates best-practice knowledge on how to use educational technologies such as immersive virtual reality (IVR). At the same time, to deal with climate change, we require new ways to embed climate change education in formal education. The current study is one of the first to investigate the feasibility of an alternative educational approach to improving waste management in the classroom as part of formal education, utilizing mastery experiences in IVR. We explore the use of a novel IVR simulation on waste management, an example of pro-environmental behavior, for climate change education. A total of 173 high school students participated in a pre-registered intervention investigating the impact of IVR on knowledge and intentions to act pro-environmentally. A 2x2 design was used to compare different design approaches to the IVR simulation based on the instructional design elements of the instruction sequence (Direct Instruction vs. Productive Failure) and feedback (Corrective Feedback vs. Exaggerated Feedback). The results indicated that IVR was effective for increasing students' knowledge ($\eta^2 = 0.41$), intentions ($\eta^2 = 0.10$), self-efficacy ($\eta^2 = 0.4$), and response efficacy ($\eta^2 = 0.35$) and that students found the simulation interesting and enjoyable. Furthermore, self-efficacy

Fare l'impossibile



Fare l'impossibile

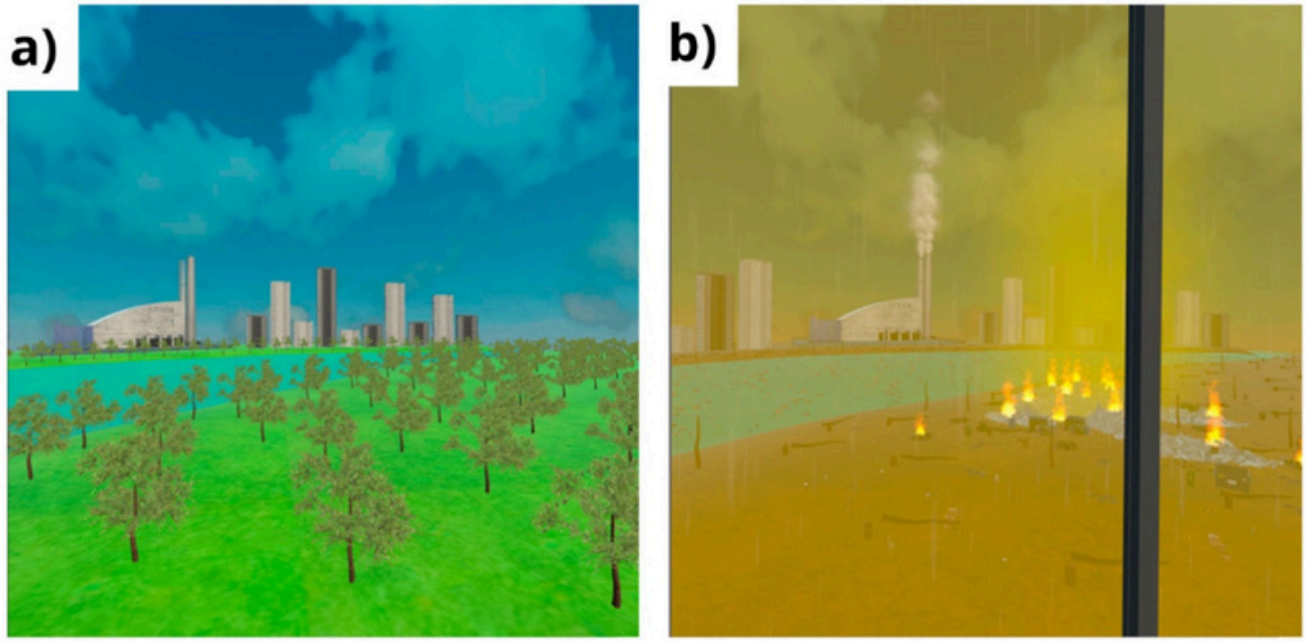


Fig. 3. Screenshots from the simulation, showing the environment (a) without Exaggerated Feedback and (b) with high levels of Exaggerated Feedback.

Fare l'impossibile

HTTPS://PLAYING4THEPLANET.ORG

Take home messagge

I vantaggi del digitale e della realtà virtuale

Facile accesso

IL FUTURO DELL'E-HEALT?

Sicurezza

NUOVE OPZIONI SICURE PER LA RIABILITAZIONE DI PAZIENTI NEUROLOGICI

Possibile

NELLA REALTA' VIRTUALE SI POSSONO PRODURRE SITUAZIONI IMPOSSIBILI NELLA VITA REALE

DIGITALE E SOCIALE

1. **Il fenomeno della shared attention**
- **imparare da soli e "in compagnia"**

L'importanza della condivisione

- Il contesto in cui impariamo qualcosa può influenzare gli outcome dell'apprendimento?
- C'è un vantaggio a condividere la conoscenza?

Il vantaggio dell'informazione condivisa

Journal of Personality and Social Psychology
2010, Vol. 99, No. 4, 683–689

0022-3514/10/$12.00 DOI: 10.1037/a0019573

A Silent Emergence of Culture: The Social Tuning Effect

Garriy Shteynberg
Northwestern University

Scholars have long been concerned with understanding the psychological mechanisms by which cultural (i.e., shared) knowledge emerges. This article proposes a novel psychological mechanism that allows for the formation of cultural memories, even when intragroup communication is absent. Specifically, the research examines whether a stimulus is more psychologically and behaviorally prominent when it is assumed to be experienced by more similar versus less similar others. Findings across 3 studies suggest that stimuli such as time pressure (Study 1), words (Study 2), and paintings (Study 3) are more psychologically and behaviorally prominent when they are thought to be experienced by more (vs. less) similar others. Critically, the effect is absent when similar others are thought to be experiencing distinct stimuli from the participant (Study 3). Taken as a whole, these results are consistent with the hypothesis that stimuli which are assumed to be experienced by one's social group are more prominent in both cognition and behavior. Theoretical implications for the emergence of culture are discussed.

Keywords: culture, social tuning, social influence, social memory, social identity, social knowledge

Social tuning

- Tendiamo ad uniformare le nostre attitudini a quelle del gruppo di cui facciamo parte
- La creazione e il ricordo di rappresentazioni condivise dell'ambiente è fondamentale per la sopravvivenza

L'esperimento

- Ipotesi: riteniamo più salienti le informazioni che pensiamo di stare condividendo con gli altri
- Più riteniamo che gli altri siano simili a noi, più riterremo prominenti le informazioni condivise

Take home messagge

I vantaggi della condivisione

Shared

LE INFORMAZIONI CONDIVISE SONO PIÙ SALIENTI

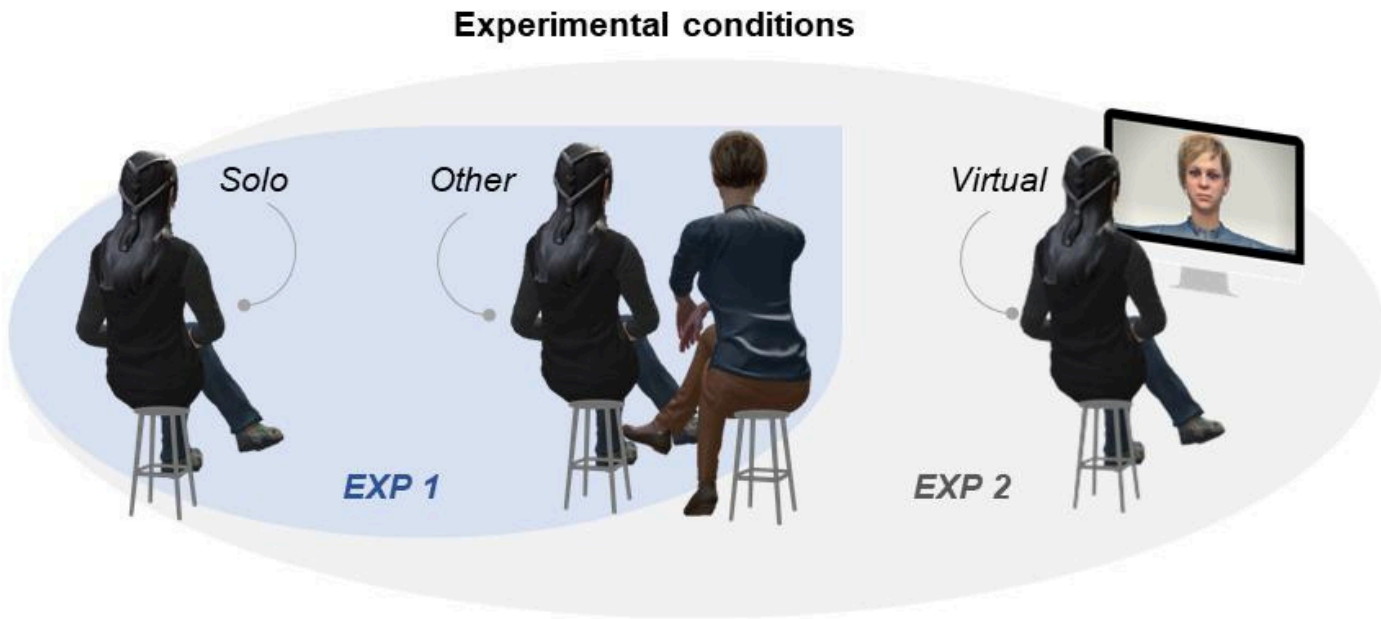
Memoria

RICORDIAMO PIÙ FACILMENTE CIÒ CHE SI PENSA SIA CONDIVISO CON ALTRI INDIVIDUI SIMILI A NOI

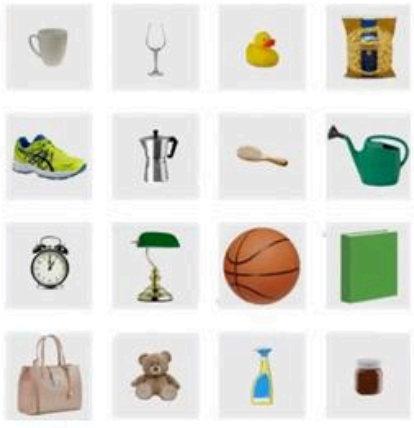
Presenza?

E' NECESSARIA UNA COMPRESENZA FISICA PERCHÈ SI PRODUCANO QUESTI VANTAGGI?

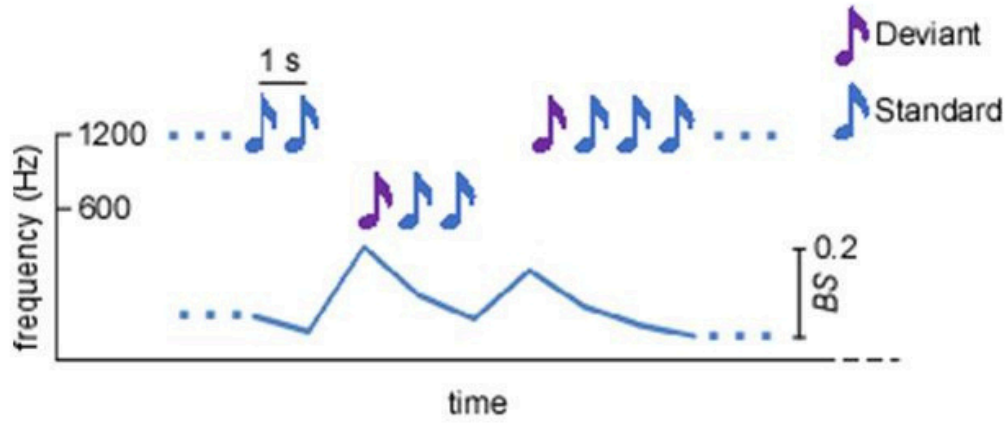
Condivisione virtuale



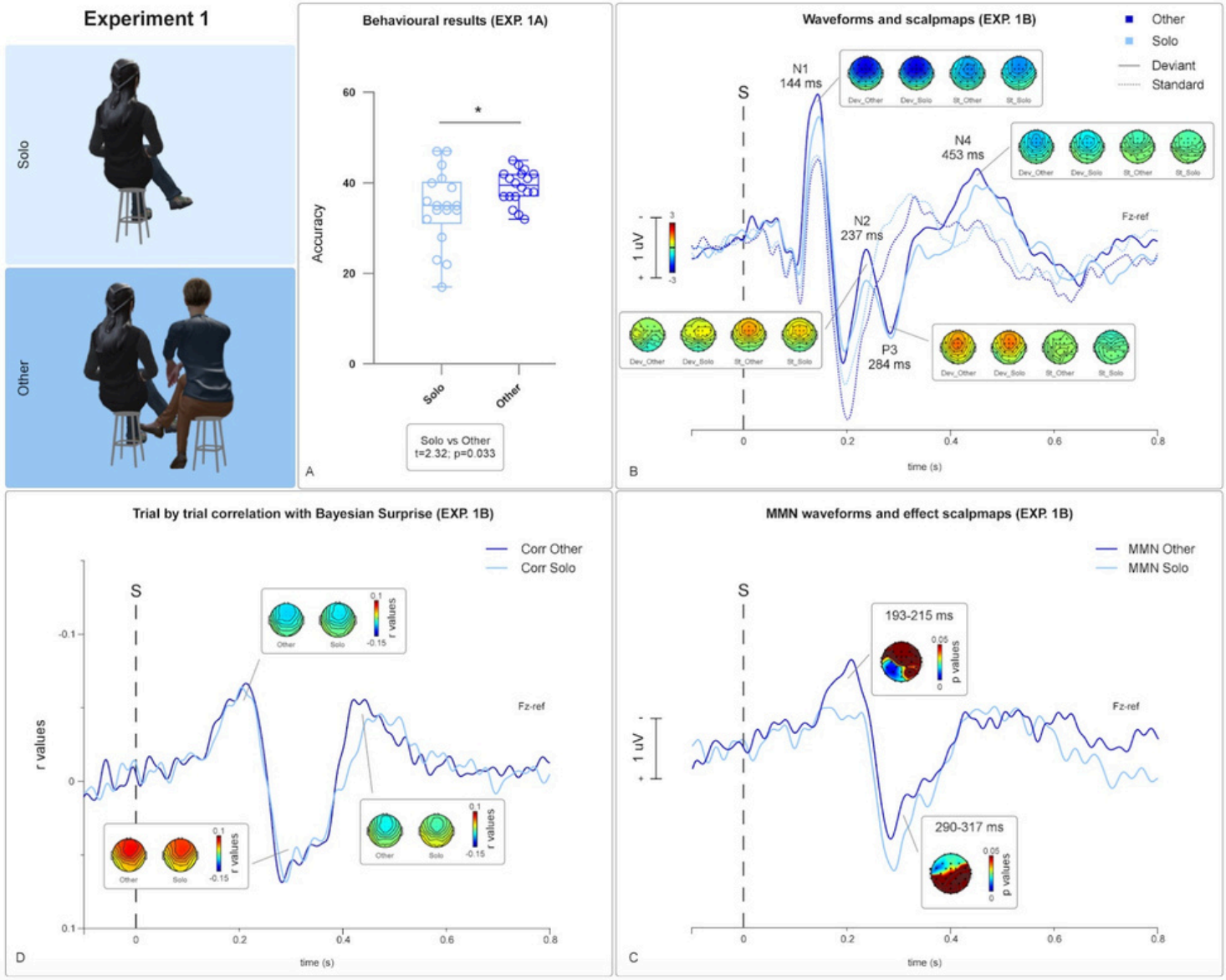
Behavioral 'Memory task' (A)



EEG 'MMN task' (B)



Condivisione virtuale



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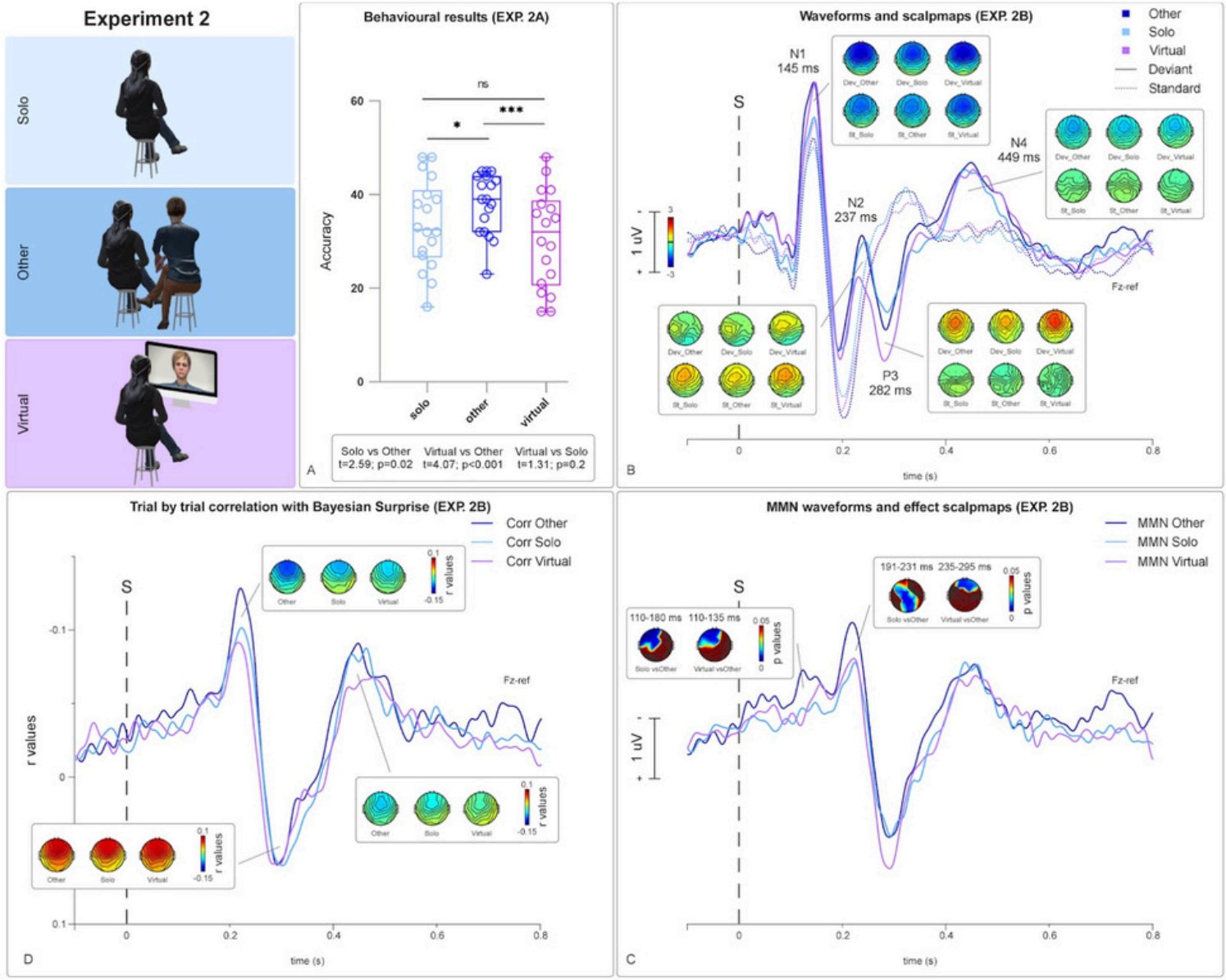
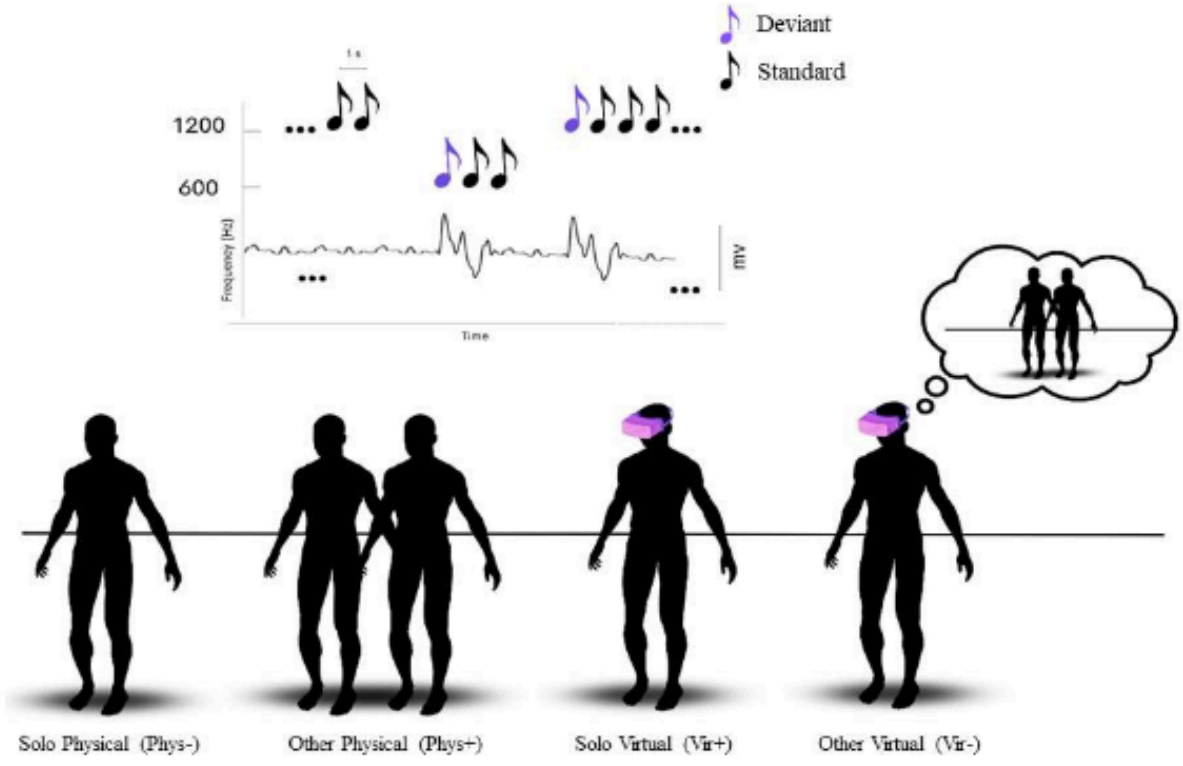
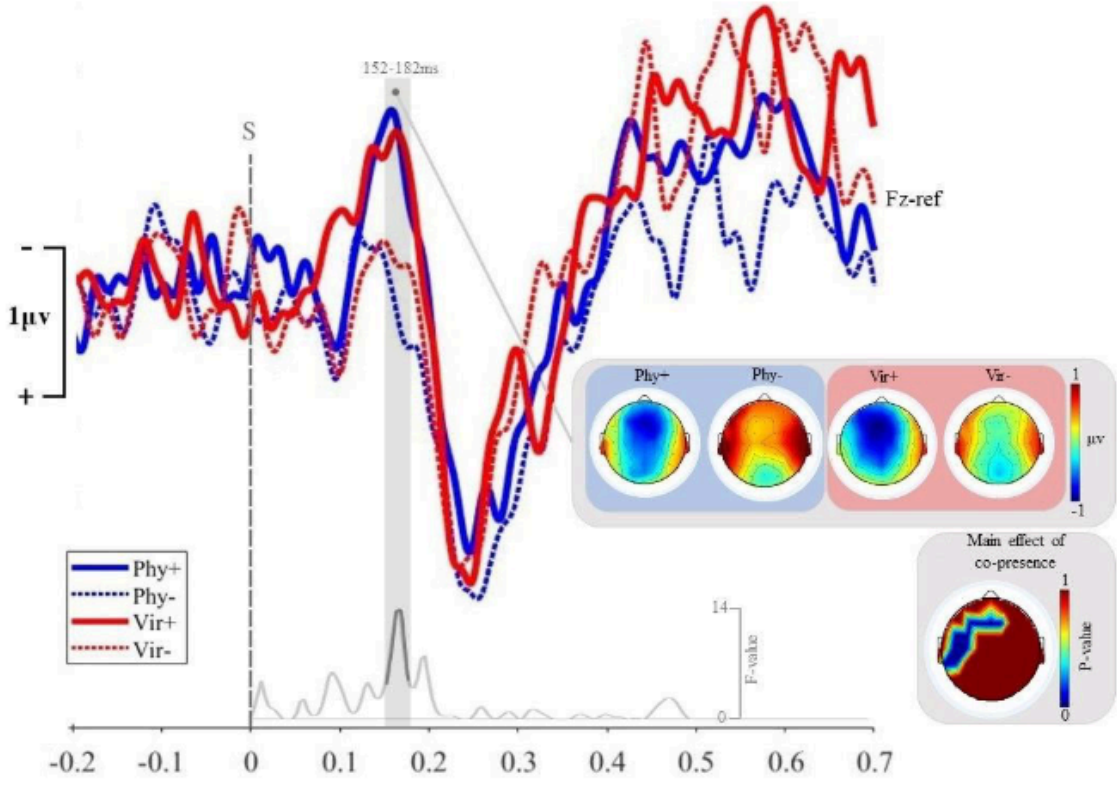


Condivisione virtuale



Condivisione virtuale



Condivisione virtuale