

Why psychotherapy benefits (and will) from new technologies ?



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PhD student in computer science,
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Early Career Psychiatrists (ECP) Workshop: ABCs of Psychotherapy,
Online EPA Congress, Madrid, 2020, recorded June 15th



La pitié Salpêtrière



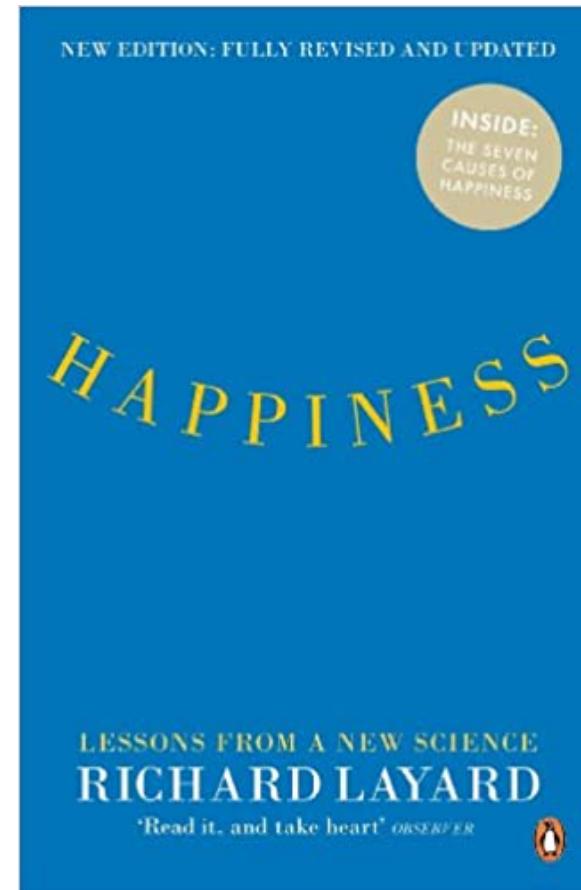
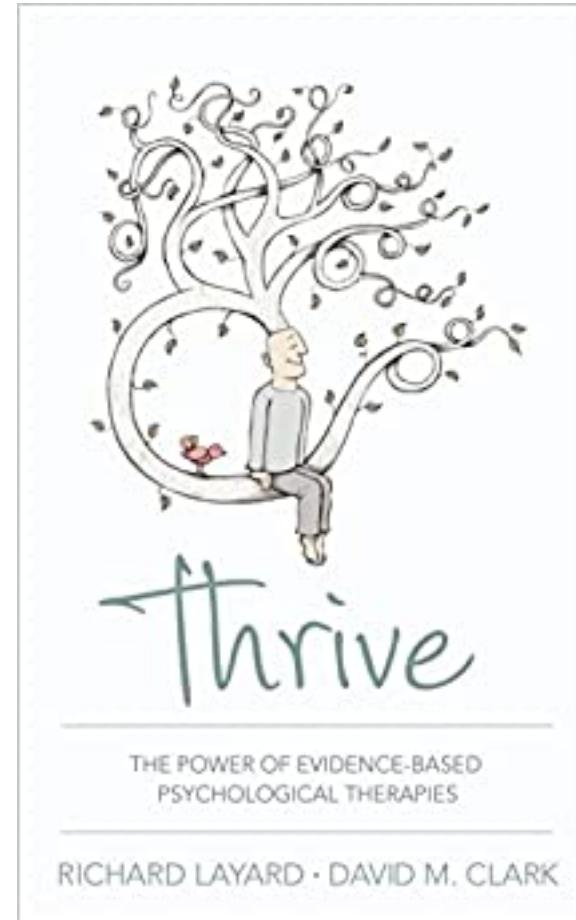
Conflict of interest : None

- Secretary of EPA section of psychotherapy,
- Officer for research - EPA section of telemental health
- Member of the board of directors of French speaking Association of Motivational Interviewing



Why training in psychotherapy is important ?

- Depression only is the 1st cause of global disability according WHO
- The costs are huge : total cost of brain disorders €798 billion (Gustavsson, 2011)
- Evidence based and cost effective psychotherapies exist (Layard, 2015)



Accessibility is low

- In Europe, 90 % of young psychiatrist want to be trained but more than half can't. Imagine an internist without training...

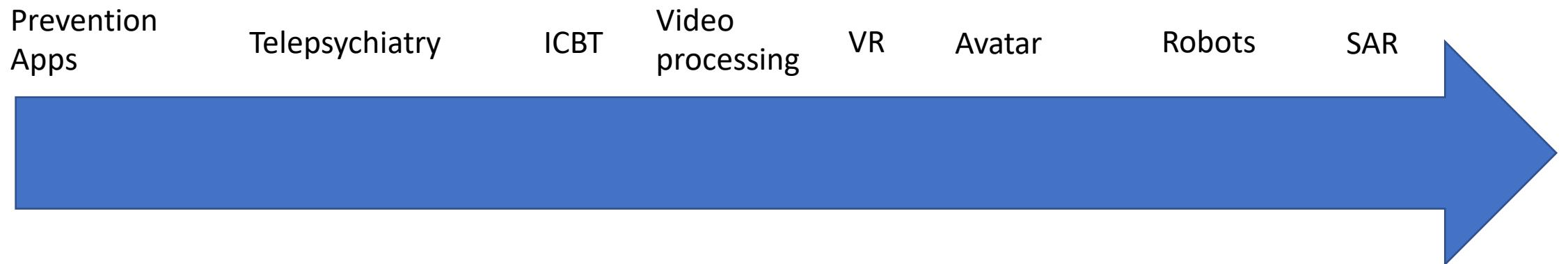
Session: **1330 - Workshop: Psychotherapy Training in Europe**

- Waiting list of 6 months. Imagine a world in which after an hearth attack or a stroke, we ask you to come back 6 months after
- Medical appointment of 10 min. Imagine an appendicetomy with 5 min of surgery

Challenges

- Because we deal with brain disorders : How it works ?
- More specific to psychiatry: How do we measure the progress ?
- Even worse in psychotherapy : What are we really doing ?

Low to High Intensity and complexity



Apps

European Psychologist (2018), 23, pp. 167-187. <https://doi.org/10.1027/1016-9040/a000318>. © 2018 Hogrefe Publishing.

Internet- and Mobile-Based Psychological Interventions: Applications, Efficacy, and Potential for Improving Mental Health A Report of the EFPA E-Health Taskforce

David D. Ebert  , Tom Van Daele  , Tine Nordgreen  , Maria Karekla  , Angelo Compare  ,
Cristina Zarbo  , Agostino Brugnera  , Svein Øverland  , Glaucio Trebbi  , Kit L. Jensen  ,
Fanny Kaehlke  , and Harald Baumeister 

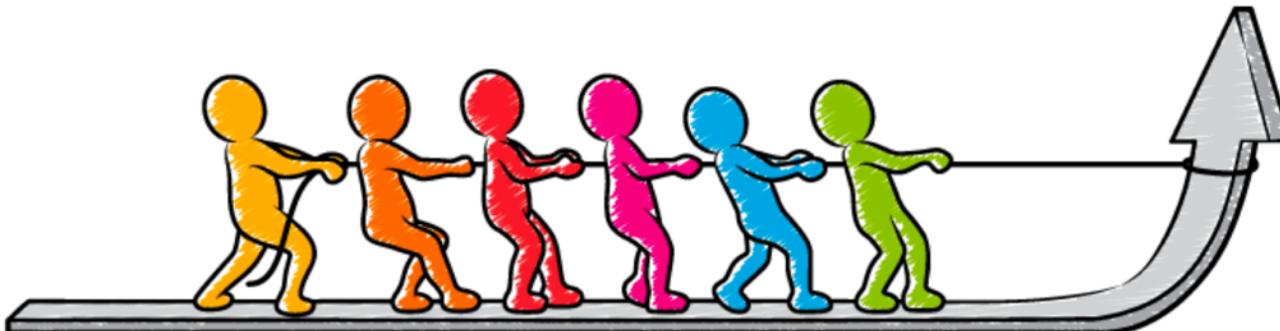
 Correction available



- The clinical significance of results of **purely self-guided interventions is for many disorders less clear**, especially with regard to effects under routine care conditions. Studies on the prevention of mental health disorders (MHD) are promising (Elbert, 2018)

Peer groups

- Social medias (Facebook, Twitter)



Comprendre, savoir, faire tomber les idées reçues, rétablir une image juste



Collectif
Schizophrénies

Collectif Schizophrénies

Organisation à but non lucratif

 En savoir plus

Accueil

Vidéos

Photos

À propos

Plus ▾

 J'aime déjà

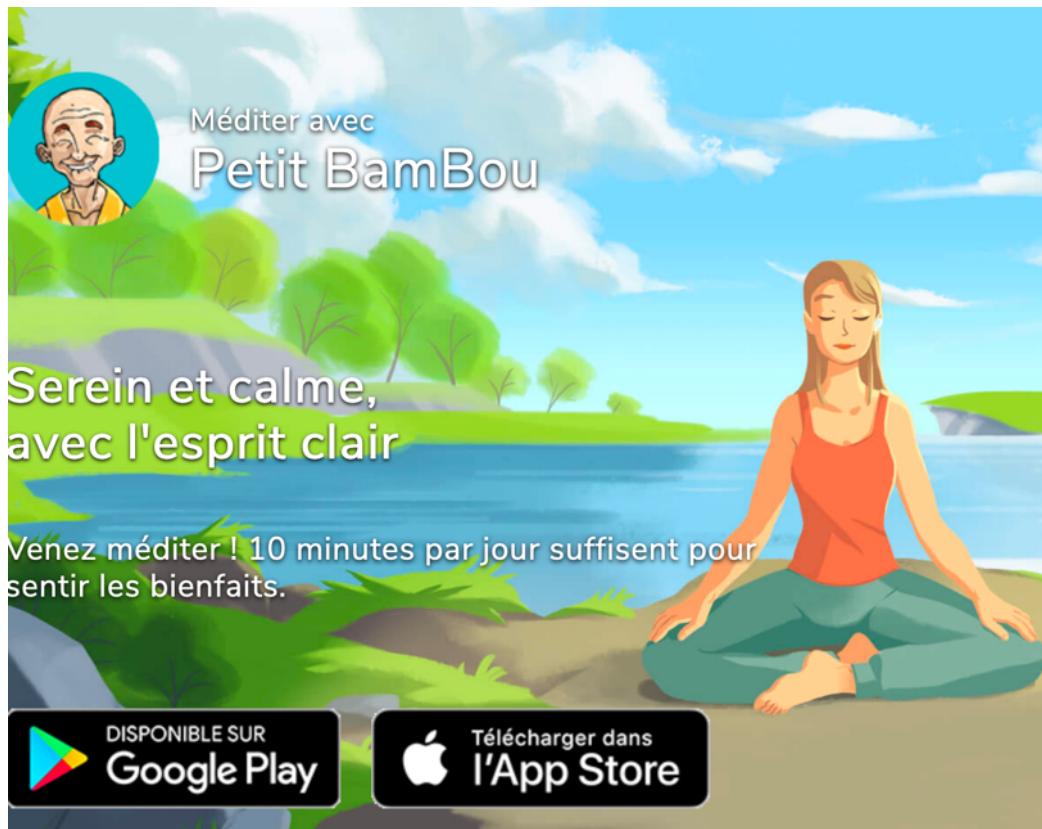
 Message



...

Guided ERP (Exposition and Response Prevention)

Mindfulness,
prevention of depression relapse



« Petit Bamou , “Headspace”

(The Lancet, Kuyken, 2015)

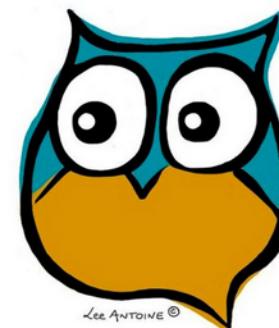


[JS Abramowitz](#), 2002

Chatbots



Owlie
[@owliechatbot](#)



Bots are always available and don't judge

Available for free or with subscription

How to intervene?



Free Open source App

Early
Psychological
Support

Rose, 2002

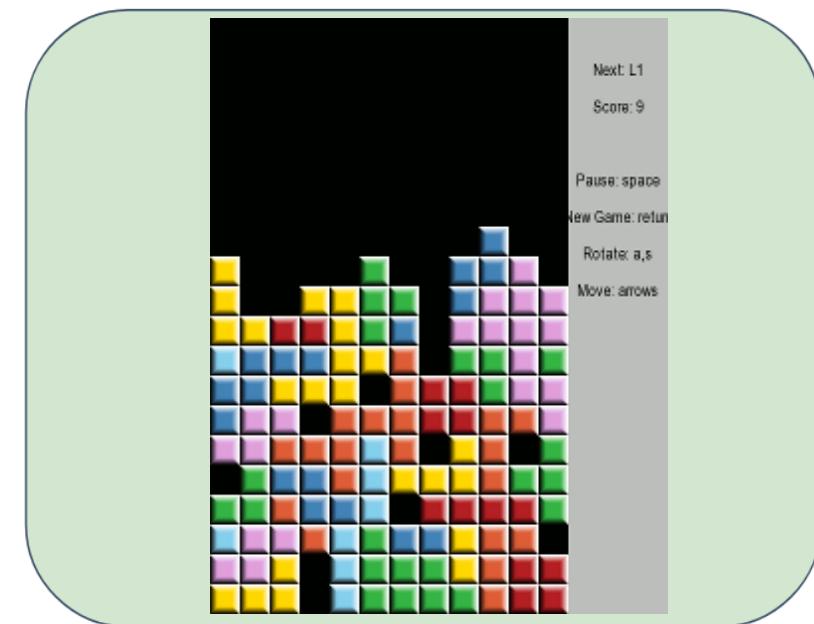


Family and Social
Support

Zohar, 2016



Study protocol, prototype



Iyadurai, 2017 ; Holmes, 2020

Molecular
Psychiatry

THE LANCET
Psychiatry

Telepsychotherapy : Yes it is possible online !

Telemedicine and e-Health, Vol. 25, No. 6 | Review

 Free Access

 Figures

 References

 Related

 Details

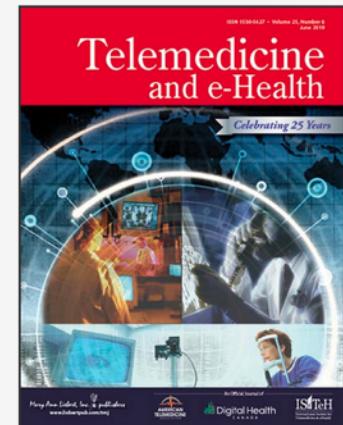
Videoconferencing Psychotherapy and Depression: A Systematic Review

Micha Blake Berryhill , Nathan Culmer, Nelle Williams, Anne Halli-Tierney, Alex Betancourt, Hannah Roberts, and Michael King

Published Online: 30 May 2019 | <https://doi.org/10.1089/tmj.2018.0058>

 Sections  View article

 Tools  Share



Information

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Abstract

- *Most controlled studies reported no statistical differences between VCP and IP groups receiving the same intervention.*

Systematic review

[Berryhill et al., 2019](#)

Accessibility ICBT :

We don't always need transfer, Hybrid models are the best

- Improve accessibility :
 - ICBT

New Online Views 6,275 | Citations 0 | Altmetric 182 | Comments

Original Investigation

May 13, 2020

Effect of Internet vs Face-to-Face Cognitive Behavior Therapy for Health Anxiety A Randomized Noninferiority Clinical Trial

Erland Axelsson, PhD^{1,2}; Erik Andersson, PhD¹; Brjánn Ljótsson, PhD^{1,3}; et al

» Author Affiliations

JAMA Psychiatry. Published online May 13, 2020. doi:10.1001/jamapsychiatry.2020.0940

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The Canadian Journal of Psychiatry



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Gerhard Andersson¹, Per Carlbring, Nikolai Titov¹, more...

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<https://doi.org/10.1177/0706743719839381>

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Article available in:

Vol 64, Issue 7, 2019



Related Articles

Andersson, 2019

Nils Lindefors, Sweden

Gerhard Andersson, Sweden

EPA Symposium: Internet Interventions with CBT - 2830

Games reengineering: gamification



Hope. You can change your feelings



Relaxation



Communication, assertiveness, negotiation



Activity scheduling



Strong emotions, anger, mindfulness



Problem solving: STEPS



Identifying and challenging unhelpful thoughts (GNATs)



Identifying and growing SPARX



The FDA just approved the first prescription video game — it's for kids with ADHD

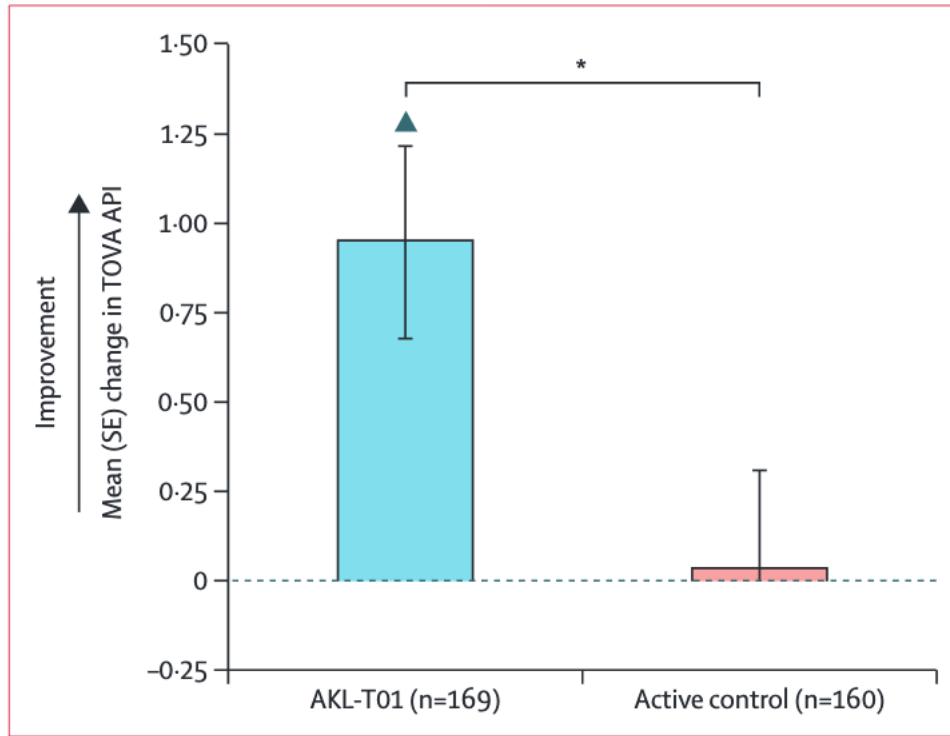


Figure 2: Primary endpoint: TOVA API mean (SE) change pre-intervention to post-intervention in the intention-to-treat population

*Adjusted p<0.050; prespecified Wilcoxon rank-sum test. Triangle represents median change, pre-intervention to post-intervention.



Kollins et al., 2020, The Lancet Digital Health.
<https://my.akili.care/endeavor/enrollment>

Avatar therapy

Take back control of hallucination in Schizophrenia



Video processing

Synchrony-Empathy-Therapeutic Alliance

=> This is also very much motor

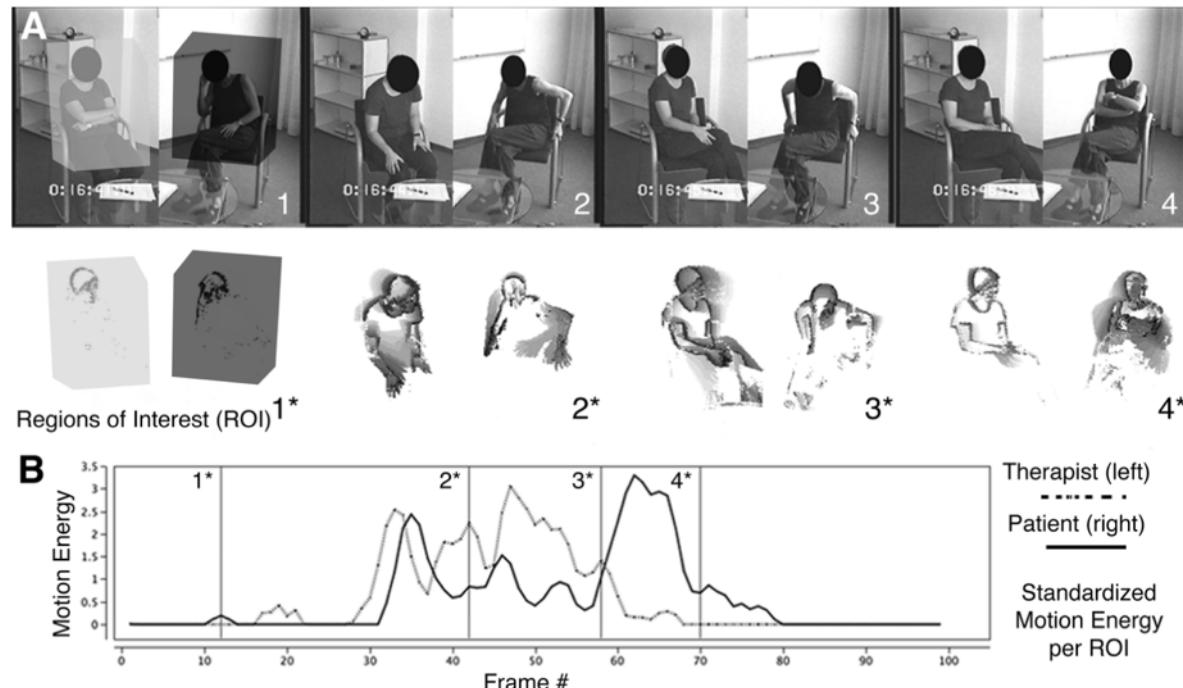


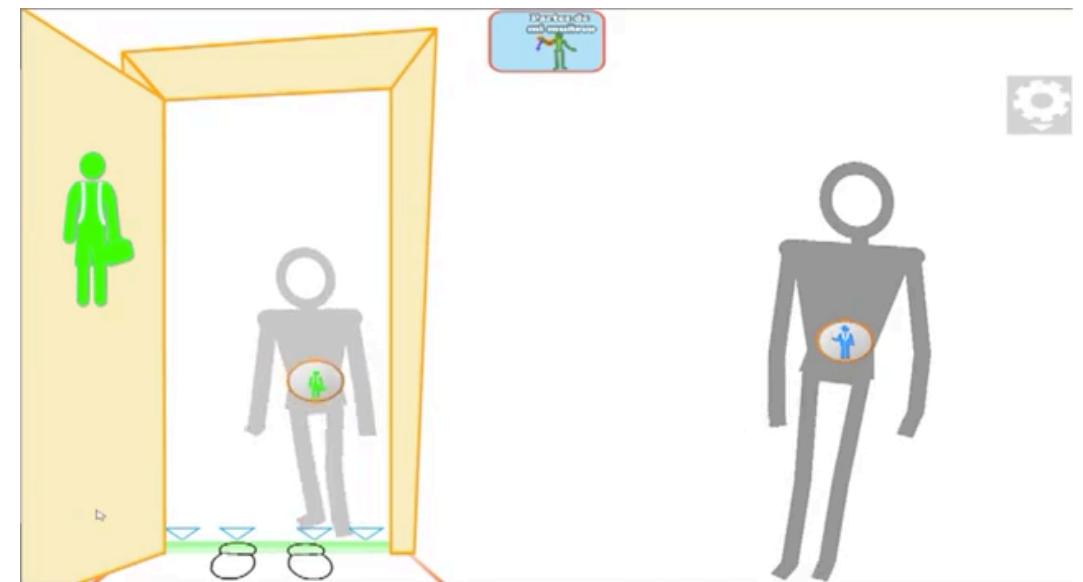
Fig. 1: Motion energy analysis (MEA).

Ramseyer, 2011

Review : Koole, 2016

Online Posture Tracking with a Kinect®

Feedback helps to become aware and improve



Free product available

<https://www.fondationorange.com/Pictogram-room>

VR (Virtual Reality)

Exposition in highly controlled environments



We found no evidence that VR exposure is significantly less efficacious than *in vivo* exposure in Specific Phobia and Agoraphobia

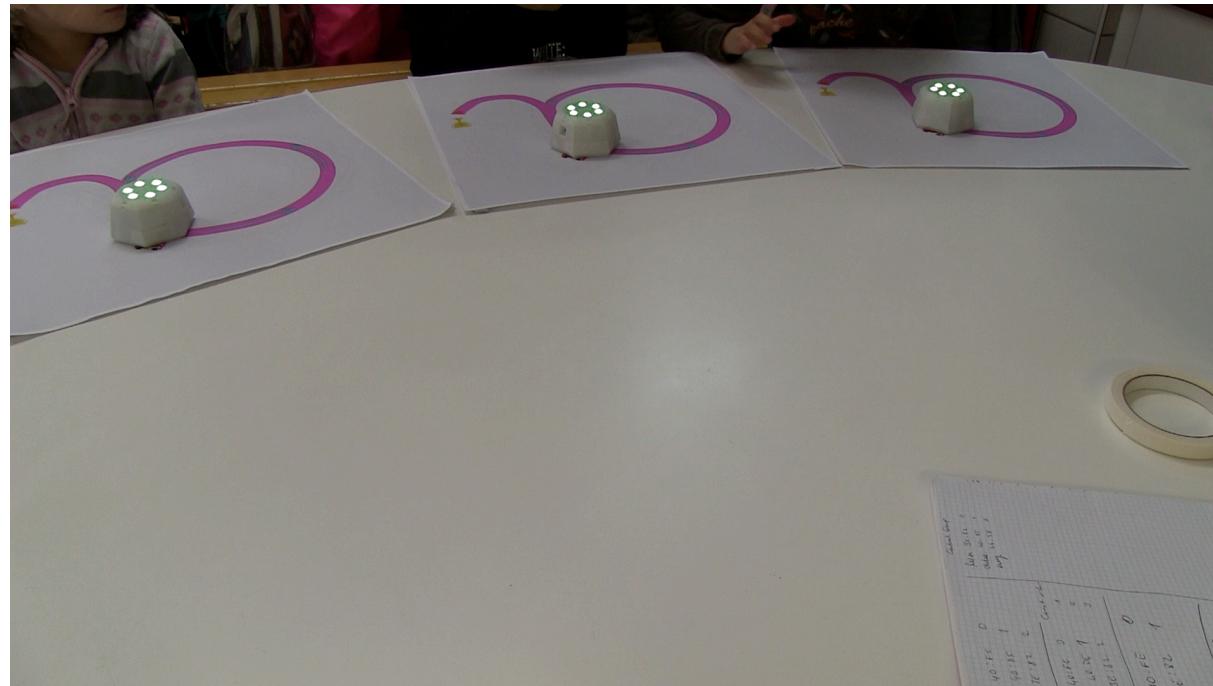
Systematic review

Wechsler, 2019
Hilty, 2020

https://www.youtube.com/watch?v=1t4_uXr9YiY

Robots

- Cellulo
- Precise feedback loop



E-Poster ECNP
congress, 2020

Simplified motor turn-taking to learn sensori-motor competencies social skills in Autism Spectrum Disorder ?

Social Assistive Robots: New scenarios, embodiment ?

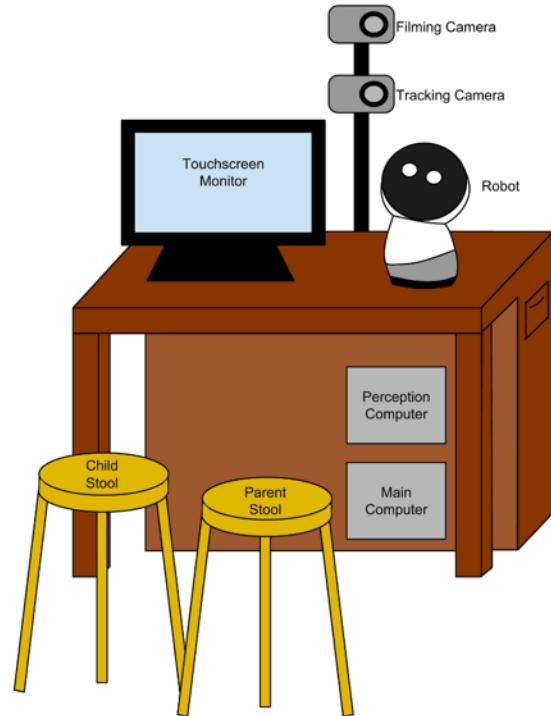
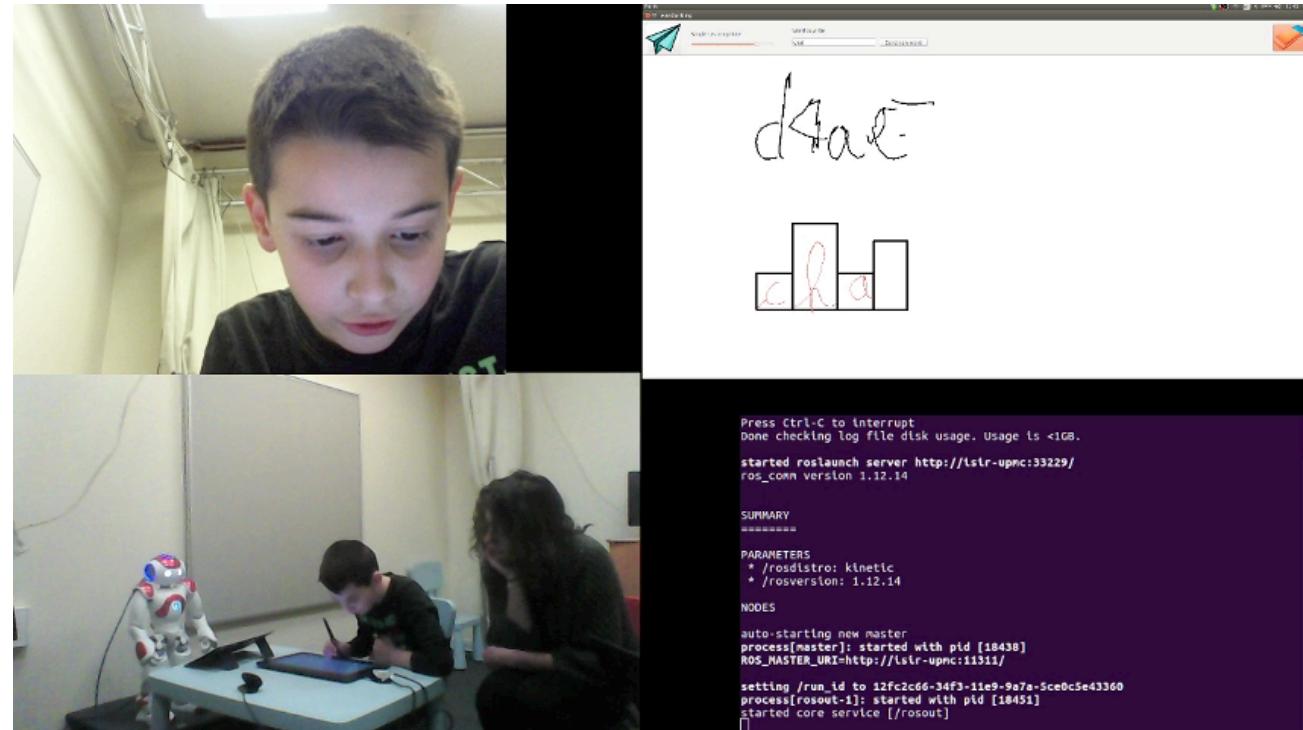


Fig. 1. Robot-assisted intervention system. Our system consists of a social robot, touch screen monitor, and two RGB cameras. The system supports triadic interactions between the robot, the child, and the caregiver. Software running on the perception computer uses an elevated camera to track both the child's and caregiver's attentional foci, whereas the other camera records the intervention session (Fig. 2). The main computer controls the flow of the intervention and the robot's behavior to ensure presentation of coherent, meaningful intervention.

Scassellati, Yale, USA

Evaluation of the metrics : Comparative study
(Asselborn, 2018 ; *Nature digital medicine*)
Short term studies and long term case studies

- Learning by teaching (protégé effect)



- Wizard of Oz to make the re-education more

Dillenbourg (EPFL-Lausanne),
Cohen (Pitié Salpêtrière-Paris)

Challenges

- Drug models don't fit well : Placebo ?
- Open new challenges:
 - Acceptability
 - Feasibility
 - Implementation in the large scale
 - Security ++
 - Iterative design
 - Funding model, Reimbursement
 - Training of professionals

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