

# Virtual Reality Adjunct to Mentalization Based Treatment

Penny Cutting, Caroline J. Falconer & Paul Moran



## Introduction

**Mentalization Based Treatment (MBT)** aims to cultivate mentalization, the process by which we make sense of the thoughts, emotions and behaviours of ourselves and others. There has been success in the application of MBT in terms of interpersonal functioning, suicidality and in-patient admissions for Borderline Personality Disorder (BPD; [Bateman & Fonagy, 2009](#)).

**However**, MBT is a complex process and mentally taxing for both patients and therapists. New ways of facilitating MBT could therefore make a significant impact on delivery and patient outcomes.

**We investigated** the feasibility and acceptability of integrating an adjunctive, virtual reality avatar software into MBT for BPD, with the aim of facilitating delivery and enhancing the practice of mentalization.

**We hypothesised** that specific features of the avatar software ProReal ([www.proreal.co.uk](http://www.proreal.co.uk)), such as the ability to shift perspective and to visually narrate inter- or intra-personal relations, would facilitate MBT and consequently mentalization.

## Methods

**We recruited** 15 participants (13 females; age range 22 – 43 years) who had a diagnosis of BPD and were enrolled as an outpatient receiving MBT at Croydon Personality Disorder Service, London.

**We developed** an avatar adjunct to MBT (Figure 1) and delivered four, group-based sessions to participants via a large touchscreen computer.

**The avatar software** ProReal allows users to create a visual representation of their inner and outer world using avatars, props (e.g. bridges, fires, shields) and the landscape (e.g. river, hills, crossroads, castle). Furthermore, the avatars can be assigned emotions, animated behaviours, size, colour and inner dialogue. The interactive landscape also allows users to alter their perspective, either through the use of a free camera or perspectives anchored to avatars (Figure 2).

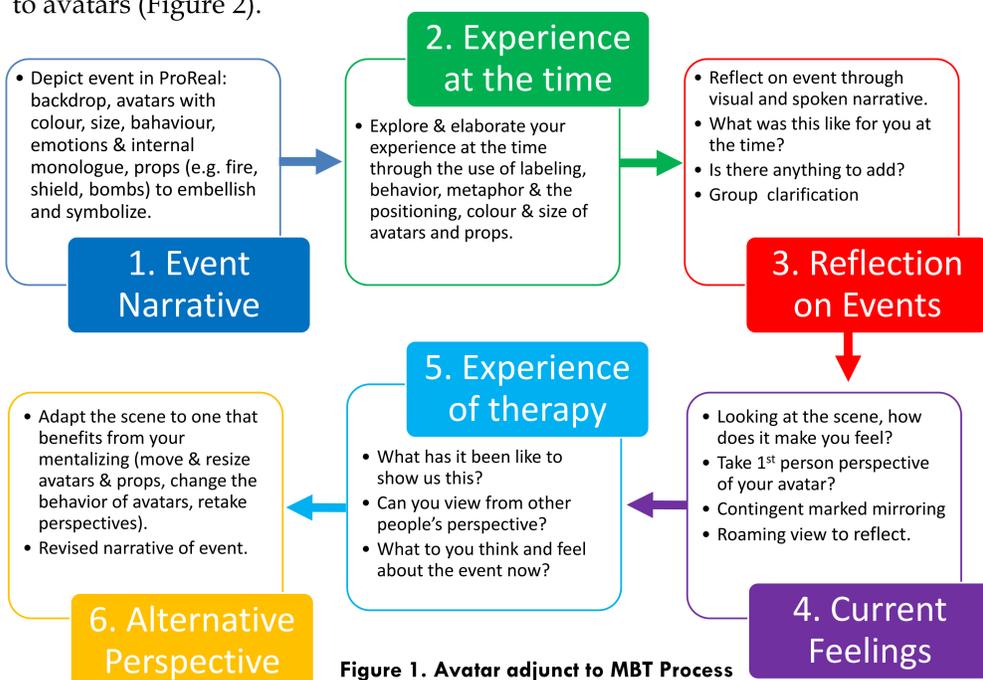


Figure 1. Avatar adjunct to MBT Process



Figure 2. ProReal avatar software

**Using a mixed methods approach**, participants completed self-report questionnaires on mood (DASS-21; [Henry & Crawford, 2005](#)), mentalization (MZQ; [Hausberg et al, 2012](#)) and borderline personality disorder (ZAN-BPD; [Zanarini, 2003](#)) at each of the four weekly sessions. Qualitative, semi-structured interviews were conducted with participants at the end of the four sessions.

## Results

Of the 15 participants recruited, 11 participants (nine females) completed all four sessions of the avatar adjunct to MBT. One participant completed two sessions but discontinued and three participants left treatment. Eight (seven females) of the 11 participants who completed the study participated in interviews while three did not respond to requests.

### Qualitative Results:

There was an overwhelmingly positive response to the avatar adjunct, and all participants would like to continue using ProReal. All participants said that their preferred setting for ProReal would be in a group-based setting because it was helpful to have others contribute to generating alternative perspectives and understanding. Most participants also reported seeing the potential benefits of using ProReal on a one-to-one basis (e.g. to focus on a difficult or more private event) but only three expressed any interest in using ProReal on a self-guided basis.

When asked whether and in what way ProReal had been helpful (or unhelpful) there were several themes that emerged (participants reported no unhelpful examples):

### Theme 1: Visual nature of ProReal beneficial for delivery



*"I often have trouble concentrating and following what's happening if someone is just talking. And so seeing it physically and going through it bit by bit was really helpful. I could give more feedback than usual."* Female, 27.

### Theme 2: Shifting perspective gives perspective



*"Being able to look at what happened and being able to look at it from a bystanders point of view or from the other persons point of view...I think it gives you more of an idea of how the scenario looked to other people, which can be very important for my own mentalising...It's made me ask more questions about how other people perceive the situation."* Female 43

### Theme 3: Distance to observe and reflect



*"To take all of those things [thoughts and emotions] out of my head and body, put it in front of me as a separate thing is kind of revolutionary...When you put them [thoughts and emotions] separate from you, out there, you're kind of looking at it from a different aspect, not governed by those things."* Male, 34.

### Quantitative Results:

A repeated measures ANOVA was conducted for each of the study variables to determine within-subjects effects. To examine trends over time, the main effect test from the ANOVA was replaced by tests of linear and quadratic effects. There were no significant within-subjects effects (smallest  $p = .12$ ). There was a significant quadratic effect for self-reported stress levels (DASS-21),  $F(1, 10) = 6.91$ ,  $p = .025$ ,  $\eta_p^2 = .41$ , but all others effects were non-significant.

## Discussion & Conclusions

Our results indicate that the avatar adjunct to MBT is both feasible to deliver and acceptable to patients.

There was an overwhelmingly positive response from participants, all of whom expressed a wish to continue using ProReal. It is conceivable, given the length of outpatient treatment (~18 months), that four sessions of ProReal did not produce significant changes in self-report measures. However, and importantly, there was no indication of decline of mental health through these measures.

Qualitative feedback suggests potential mechanisms of therapeutic change as a results of ProReal, such as a) **facilitating the delivery of MBT through a visual medium**, b) **offering literal perspective changes through avatars** and c) **providing an opportunity for distancing oneself from thoughts and emotions in order to reflect**.

**Limitations:** This was an uncontrolled, small-scale study in one service. Further research is required to investigate the efficacy and effectiveness of our avatar adjunct to MBT.