

## (10) Presence as perceived continuity of experience

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### Abstract

This paper identifies difficulties in current definitions of "presence", proposing an alternative definition, based on recent work in "consciousness studies". In the model recently proposed by F. Biocca, the user of a virtual environment is located in a space defined by three "poles of attraction": mental imagery, the virtual environment and the physical environment. However, introspection suggests that this representation is inaccurate. We can feel present in a virtual reality *or* in a physical environment but *never in both environments at once*: in terms of Biocca's model, users are always located at one of the poles and never in intermediate positions.

Insights from consciousness studies allow us to build on this intuition. Edelman and Tonoli suggest that consciousness presents us with a single, non-contradictory interpretation of the world: we can interpret an environment as if it were real or as if it were artificial but we cannot hold both interpretations at the same time. Combining this concept with ideas from Damasio, we propose that presence can be defined as a *subjective feeling, representing the emotions associated with a perception of continuity in the brain's interpretation of the world*. The opposite of a sense of presence is the *feeling of non-continuity* when our brains flip between different interpretations: what M Slater has called a "break in presence" (BIP). Presence is experience without BIPs.

It is often suggested that presence depends on the realism of virtual environments. The concept of presence as perceived continuity of experience suggests, on the contrary, that the true cause of presence is a medium's ability to monopolize the user's attention – as achieved by the best books, films, theater and videogames. If this is true the future effectiveness of virtual media will depend on new forms of artistic expression: not just *quantitative improvements* in technology but *qualitative changes* in the way the technology is used. We are learning how to print – now we need to write.