



Semester: MED 10

Title: Agency and Virtual Body Ownership
of a Virtual Bat's Avatar in VR

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Abstract:

VR brings realistic experiences to the users. To enhance realism problems of virtual embodiment has been continuously studied. In order to investigate the potential factors for achieving the illusion of morphologically different from human shape body there has been experimented with agency and body ownership in virtual reality. First experiment included the acceptance of the bat's virtual body differences using only visuotactile feedback. The second one studied both limbs movement and the movement through the environment. Both studies showed significant difference between the conditions. Absence of tactile input in the first experiment was breaking the illusion of VBO. Furthermore observations showed that passive movement (movement of the virtual bat on the screen, when test subjects were not moved in physical reality) and absence of proprioceptive feedback deprived test subjects from relating to virtual body as their own.

The second experiment proved that there is a linear relationship between agency and virtual body ownership. The higher agency was the higher virtual body ownership became, which might indicate that agency structures body ownership in VR. Asynchronous mapping used for controlled movements produced the illusion that actions were synchronous. The last finding was that it is important to see virtual body present in the scene when non-human avatar is used.