This paper presents a virtual reality experiment in which two participants share both the virtual and the physical space while performing a collaborative task. We are interested in studying what are the differences in human locomotor behavior between the real world and the VR scenario. For that purpose, participants performed the experiment in both the real and the virtual scenarios. For the VR case, participants can see both their own animated avatar and the avatar of the other participant in the environment. As they move, we store their trajectories to obtain information regarding speeds, clearance distances and task completion times. For the VR scenario, we also wanted to evaluate whether the users were aware of subtle differences in the avatars animations and footsteps sounds. We ran the same experiment under three different conditions: (1) synchronizing the avatars feet animation and sound of footsteps with the movement of the participant.