

Can sounds trick the brain into perceiving your body differently?

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Self-action sounds help us understand physical properties of objects and our own body. Picture by Antonio Caballero

(Medical Xpress) -- Have you ever found yourself paying attention to the sound of your footsteps when walking down a quiet corridor? Or perhaps you enjoy creating rhythmic patterns by tapping on a surface? Almost every bodily movement we make generates an impact sound and a team of academics have been studying whether the perception of the physical dimensions of our body can be challenged by spatially altering the 'action' sounds we make.

The research team from Royal Holloway, University of London conducted various experiments to determine whether our action sounds influence the way we picture ourselves and whether these perceptions change when the sound is manipulated.

Dr Manos Tsakiris from Royal Holloway said: "These sounds provide an important source of information about the physical properties of the objects and the space around us, but they also inform us about the physical properties of one's own body, although we are mostly not aware of this process."

The study, *Action sounds recalibrate perceived tactile distance*, is published in *Current Biology* and shows that increasing the distance to sound events produced when tapping on a surface with one's [arm](#) influences the subsequent judgments of distance between two objects touching the arm. "Participants did not report feeling their own arm extended as a result of this test possibly because it is difficult for someone to accept that the dimensions of their body can change from one minute to the other. However, the increase in reported distance between two points touching one's arm do suggest an unconscious change in the way participants mentally represented their arm, as if they would represent this arm as being longer," Dr Tajadura-Jiménez explains.

The researchers hope this study could have clinical applications and help in the way chronic pain is treated or help motivate older people to move further or for longer than they previously thought was possibly by manipulating the action sounds they make.

More information: Action sounds recalibrate perceived tactile distance, *Current Biology*, 2012.

Provided by Royal Holloway, University of London

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