This study examines the impact of motion and racial identity on empathy and implicit bias using a two-by-two mixed design. Sixty participants from UCLA engaged in two sessions. In session one, participants performed twenty-four everyday actions, which were motion-captured and later bound to avatars of either their own race or an outgroup (white vs black). Session two involved virtual reality interactions with avatars paired to either the participants' own motion or a same-sex motion. Neural activity was recorded using functional near-infrared spectroscopy (fNIRS). Measures of implicit bias (IAT, AMP, Racial Dictator Game), empathy (IOS, IRI), and self-reported affinity toward the avatar were collected pre- and post-interactions.

Predictions include enhanced neural synchrony in mirroring, motor, and mentalizing networks when participants engage with avatars displaying their own motion. Participants interacting with Black avatars bound to self-motion are expected to exhibit increased empathy toward the racial outgroup, alongside decreased implicit bias. Self-motion is hypothesized to increase affinity for the avatar, extend interaction times, and reduce interpersonal distance. The findings could provide insight into reducing racial bias and using VR to improve empathy and relationships between people of different backgrounds.