

Social objects in the brain

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A new study from IMC researchers Kristian Tylén, Riccardo Fusaroli, and Andreas Roepstorff, published in the scientific journal *NeuroImage*, used LEGO bricks to investigate the neurocognitive underpinnings of our engagements with symbolic objects. The study suggests that we experience symbolic objects as social entities.

Sometimes objects are just objects, that is, static, material things. But some objects are relevant to us due to their particular role or value in our social lives. Symbolic artifacts such as road signs, national flags, wedding rings, and artworks are imbued with social significance as they are developed, negotiated and engaged in a variety of everyday cultural practices. More than mere physical objects, we thus experience them as vehicles of social meaning: although a red traffic light does not present any physical impediment to movement, it still (most often) stops us from crossing the street.

LEGO Bricks to illustrate

A new study conducted by IMC researchers Kristian Tylén, Riccardo Fusaroli and Andreas Roepstorff, and just published in the high-ranking scientific journal *NeuroImage*, investigates the neurocognitive underpinnings of our engagements with such symbolic artifacts. In a two-day experimental study, participants in groups first built collective models of LEGO bricks to illustrate their understanding of abstract concepts such as 'justice', 'safety' and 'collaboration'. Later they went into an fMRI brain scanner where they would be presented with pictures of their own and others' LEGO models. Interestingly, when participants

attended to the meaning of the models, [brain areas](#) associated with social cognition and language were activated. These areas are often found in studies where participants watch social stimuli or are instructed to think about other people's mental states. Lead researcher Kristian Tylén explains:

"It is really interesting that brain areas associated with social interaction and reasoning are also active when our participants look at static, dead objects. It tells us that these objects have gained symbolic meaning through social interaction in the preceding group interventions".

Furthermore, special activation patterns in brain areas related to social empathy were found when participants saw LEGO models that they had built with their own group in contrast to models made by other groups. Riccardo Fusaroli continues:

"Activation in these areas were found to depend on how closely the [participants](#) felt related to their fellow group members after the LEGO construction sessions."

Together these findings shed new light on the special status of symbolic objects in human cognition. More than simple material structures these objects are experienced as an extension of our social engagements with each other, as trails of social and cultural interactions.

More information: Kristian Tylén et al, Trails of meaning construction: Symbolic artifacts engage the social brain, *NeuroImage* (2016). [DOI: 10.1016/j.neuroimage.2016.03.056](https://doi.org/10.1016/j.neuroimage.2016.03.056)

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