

Trust game increases rate synchrony, study shows

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A study by researchers from Aarhus University recently published in the *Journal of Physiology and Behavior* shows that when people build trust, their hearts get in sync and beat as one. When a public goods game is used to introduce trust conditions during a cooperative task, participants' heart rate arousal and synchrony is increased.

In the new study 'Building [trust](#): Heart rate synchrony and arousal during joint action increased by public goods game' (*Journal of Physiology and Behavior*) PhD and assistant professor Panagiotis Mitkidis and colleagues from the Interacting Minds Centre at Aarhus University studied the link between [heart rate](#) and trust. They had 37 pairs of [participants](#) do a cooperative task involving building LEGO cars. The [control group](#) only did the LEGO task, while a second group played an investment game in between the building sessions. The game, known as the 'Public Goods Game', had the goal of including the element of trust in the experiment.

"When people are in the progress of building trust among each other their hearts get in synchrony and beat as one. Trust is a necessary ingredient for successful cooperation and of most importance for our society," said Panagiotis Mitkidis, PhD, assistant professor, Aarhus University.

The study showed that there was a larger physiological response in the form of an increase and synchrony of the participants' heart rates in the 'trust group', compared to the control group.

Studying trust

The game involved a simulated financial investment by the participants. Participants had the option of investing some or all of their money in a common pool, from which everyone would gain the 'profits' (the sum was multiplied in each game). The game was set up to ensure that the profit was greater for the group as a whole if all the participants trusted each other and invested all their money. For further details of the game, see Ledyard (1995).

Hearts beat as one

The study reveals that heart rate synchronization was significantly higher in the 'trust' group. Heart rate arousal (measured in beats-per-minute) was also significantly higher in the trust condition. Panagiotis Mitkidis et al. mention that the element of trust could explain the increased heart rates in the trust group, because the participants enter a certain risk when engaging in the investment game. The excitement of doing the task in itself could possibly explain the increase in heart rate, but not the synchronisation.

The cause of the synchronic heart beats is unknown. Panagiotis Mitkidis says that synchrony in autonomic physiology is an indicator of rapport, affiliation, and the improvement of group dynamics. A further indication of that is that heart rate synchrony is a significant predictor of expectations in the Public Goods Game, an indication of preferences and beliefs about the behavior of others. Most previous research on trust has been focused on the hormonal basis (e.g. the effect of oxytocin on social behaviour) and not on physiological responses like heart rate. Consequently, the study introduces new methods for studying social behaviour.

Provided by Aarhus University

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