



# Max Planck Institute for Evolutionary Anthropology

## PRESS RELEASE

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### Social disappointment in chimpanzees

**Chimpanzees refuse a less-preferred food reward from a human distributor – but not a machine – if they could have been given a better one**

Researchers of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, show that unlike humans, chimpanzees do not compare their payoffs to the payoffs of a social partner. They do, however, display a different, potentially evolutionarily more ancient, form of fairness: They react with disappointment if someone fails to take their personal preferences into consideration when distributing resources.



Humans respond negatively to unfairness. For example, we protest when our colleague who has worked just as hard receives a pay of 100 Euros but we receive only 20 Euros. Do chimpanzees, one of our closest living relatives, show the same sense of fairness based on social comparison? In order to find out, Jan Engelmann and his colleagues of the Max Planck Institute for Evolutionary Anthropology

engaged the animals in a situation similar to the unequal pay among colleagues.

In their study, one chimpanzee received a high-quality reward from a human experimenter for inserting a tool into an apparatus, and a second chimpanzee only received a low-quality reward for the same action. Two variables were manipulated. First, whether the distribution was carried out by a human experimenter or by a simple machine. Second, whether the first chimpanzee was actually present and received the high-quality reward, or whether the second chimpanzee simply received a low-quality instead of a high-quality reward in the absence of the first chimpanzee.

The results were clear cut: chimpanzees did not show the same sense of fairness based on social comparison as humans. Whether another chimpanzee received high-quality food did not influence their behavior. However, what made a difference was whether the distribution was carried out by a human experimenter rather than a machine. Chimpanzees refused the low-quality reward when they received it from a human experimenter, but not when they received it from a machine. “If they received a less-favored reward from the human, chimpanzees got disappointed and often refused the reward”, says Jan Engelmann. “This was not the case if the same reward was distributed automatically by a machine.” Chimpanzees’ reactions to receiving the less-preferred food from the human distributor ranged from active protests, like throwing the tool at the experimenter, to more passive forms of protest, like dropping the tool on the ground and moving to the corner of the room.

“This study suggests that chimpanzees do not compare their payoffs to the payoffs of others”, says Engelmann. “However, it does suggest that chimpanzees compare how they are being treated to how they could be treated by a social partner. They thus form special expectations towards social partners, which represent an important step on the way to a moral sense as seen in humans.”

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**Social disappointment explains chimpanzees’ behavior in the inequity aversion task**

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Image:

Chimpanzees with different amounts of food. Do they find this unfair? Interestingly, they do not. © Max Planck Institute for Evolutionary Anthropology

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