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Humans Imitate in Unique Ways: Comparing Children and Bonobos

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Is Overimitation a Uniquely Human Phenomenon? Insights From Human Children as Compared to Bonobos

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From an early age, children are very skilled in imitating the actions of others and are so motivated to do so that they will even copy actions for no reason. Imitation is part of what it means to be human, underlying our capacity to acquire and transmit culture, including social rituals, norms, and conventions. A new study compared children's capacity to imitate behavior with the same capacity of humans' closest living great ape relatives, the bonobos. The study found that bonobos do not copy actions as children do, which highlights the unique nature of human imitation.

The study, by researchers at the University of Birmingham and Durham University in the United Kingdom, appears in the journal *Child Development*.

"Our results show striking species differences in imitation," explains Zanna Clay, assistant professor of psychology at Durham University (formerly at the University of Birmingham), the study's lead author. "The young children were very willing to copy actions even though they served no obvious function, while the bonobos were not. Children's tendency to imitate in this way likely represents a critical piece of the puzzle as to why human cultures differ so profoundly from those of great apes."

In the study, researchers compared the imitative behavior of 77 typically developing 3- to 5- year-olds in the United Kingdom with that of 46 untrained bonobos living in naturalistic forest enclosures in Lola ya Bonobo Sanctuary in the Democratic Republic of Congo. Children were recruited from the Birmingham Science Museum, which resulted in an ethnically diverse sample from low- and middle-income families. Imitation was defined as faithfully copying others' body movements. Bonobos are our closest living relatives (along with chimpanzees), but have been studied much less. Since imitation is inherently social, social learning may be better to study in bonobos because they outperform chimps on certain sociocognitive tasks, show enhanced social orientation, and have high levels of social tolerance, such as peacefully sharing food with one another.

In the study, the researchers showed children and bonobos a small wooden box with a reward inside. Before opening the box, an experimenter performed some nonsensical actions over the box, such as waving a hand or tracing an imaginary line over it. Each participant was then given a box without any instructions. Most of the children spontaneously imitated the actions; in contrast, none of the bonobos made any attempt to copy any of the actions.

“The fact that the bonobos failed to imitate demonstrates that even enhanced social orientation may not be enough to trigger human-like cultural learning behaviors,” notes Claudio Tennie, research group leader at the University of Tubingen, who coauthored the study when he was at the University of Birmingham. “Although some animals show some limited abilities to copy, copying actions that have no apparent purpose appears to be uniquely human.”

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Summarized from *Child Development*, Is Overimitation a Uniquely Human Phenomenon? Insights From Human Children as Compared to Bonobos by Clay, Z (Durham University, formerly at University of Birmingham), and Tennie, C (University of Tubingen, formerly at University of Birmingham). Copyright 2017 The Society for Research in Child Development, Inc. All rights reserved.