NEWS | POSTED MARCH 12, 2025

Why do Children use Loopholes? New Research Explains the Development of Intentional Misunderstandings in Children

PRESS RELEASE / CHILD DEVELOPMENT: Embargoed for Release on March 12, 2025

PRESS RELEASE

Published

Wednesday, March 12, 2025

10:14am

Learning Loopholes: The Development of Intentional Misunderstandings in Children

Read the Child Development article:

WILEY ONLINE LIBRARY

Contact:

Jessica Efstathiou, Public Relations

E-MAIL

Q&A with Child Development Journal Author

Most people are familiar with loopholes. When your boss, landlord, partner, customer, or government asks you to do something you don't want to do, and yet you can't say "no," you may resort to malicious compliance – doing what someone asked, but not actually what they meant. Most parents are probably familiar with such "little lawyer" behavior too: if a parent says, "Time to put the tablet down," a child might physically put the tablet down on the table – and then keep playing on it. While such intentional misunderstandings are common and important, there has been little research on the development of loophole behavior across childhood.

In a new Child Development study from the Society for Research in Child Development (SRCD), researchers at the Massachusetts Institute of Technology and Harvard University examined when and why children engage in loopholes. Tracing the origin of loophole behavior and how communication goes wrong can help us to better understand how communication often goes right, when people are motivated to cooperate.

To understand more about how, when, and why children use loopholes, 260 parents were asked to report on their children's (N = 425; 3-18 years old; 42% female; 34% White) use of loopholes. The study team paired this with actual children's (N = 298; 4-10 years old; 49% female; majority White) behavior in experiments across three studies.

The research showed that over time, children learn to distinguish loopholes from compliance (cooperation) and non-compliance (refusal). Children from four to ten years of age expect that loopholes will help decrease the amount of trouble they would get into, and they are more likely to use them when they don't want to do what their parent asks. In particular, the researchers found that loophole behavior typically starts around five to six years of age and then peaks in frequency around seven to eight years. In addition to standard questions, the researchers also examined whether children thought loopholes were funny, looking at their

smiles and laughter. Consistent with children's behavior and with parent's report, children thought loopholes were amusing, while other behaviors were not. This may be the first research to explore the phenomenon of loopholes across development and can help contribute to a broader understanding of social reasoning.

SRCD had the opportunity to speak about this research with Kiera Parece, a co-author of the paper and graduate student in the Early Childhood Cognition Lab at the Massachusetts Institute of Technology.

SRCD: Can you please provide a brief overview of the study?

Ms. Kiera Parece: Our work examined children's use and understanding of "loopholes." Loopholes are intentional misunderstandings, when a request is technically satisfied but the underlying spirit is violated. They're common in law, history, and everyday life, but as far as we know no one has examined how and when they develop in childhood. We combined a naturalistic parent survey with three empirical studies in which we asked children to evaluate loopholes, predict when someone will use loopholes, and come up with loopholes of their own. We found that over time children start to distinguish "loopholes" from both compliance and non-compliance. Children expected loopholes to result in less trouble compared to outright defiance and predicted that other children will use loopholes more when there's a conflict between the goals of a parent and child. While not all children use loopholes, and not all of them develop their use at the same time, the developmental picture that emerged was strongly robust across the studies and parental report: Children's understanding and use of loopholes seems to emerge around ages five to six and then peak around ages seven to eight.

Children also thought loopholes were funny: They smiled and laughed more when they heard stories about loopholes than when hearing stories about children doing what they were told or outright refusing to do so. While younger children struggled to come up with ways of being sneaky, from five to seven years of age children were increasingly able to come up with valid loopholes on their own.

SRCD: What led you to study loophole behavior in children?

Ms. Kiera Parece: First of all, loopholes are just super interesting. And once you start to think about them, they're everywhere: law, history, fables, rebellions, everyday life, governments, corporations, you name it. And they're also important: loopholes are something in between complying and not complying, they can get

you out of trouble, they're creative. They're also worrying: we as humans are currently developing new forms of machine intelligence, which may not do what we want. If we end up building a genie, we better understand genies!

With all that in mind – that loopholes are important, and pervasive, and worrying– it makes sense to think about where they come from. If we understand when and why children start using loopholes, we'll have a better understanding of this phenomenon, and of communication more generally. Also, it probably helped that the senior author's child (Dr. Ullman's son) was around five or six when we got interested in this, so there was constant pressure at home to better understand this behavior.

SRCD: Did you learn anything that surprised you?

Ms. Kiera Parece: One thing that delighted and surprised me was the creativity and wittiness of children's loopholes, which can be seen in the parent anecdotes we collected, and also the more official experiments we ran. We saw that children engage in loopholes across a wide range of domains. It's not just "oh, they learned what the word "can" means, so now they can use a loophole that involves 'can.'" Everything from technology (a child is told no computer, so they use a tablet) to eating sweets (a child is told no more gummy bears, they switch to gummy worms), to spatial reasoning, to the understanding of time and relationships, children were finding creative, diverse ways around all of this.

The other thing that was non-obvious to me going into this is the specific robust pattern that we found: Children generally start to use and understand loopholes around ages five to six, it then peaks around seven to eight and falls off from there. It's interesting that it doesn't robustly start before then, and to think: why not? Children already understand a lot of pragmatics, pretense, theory of mind, and other ingredients of loopholes at younger ages, so why this pattern? I'm sure parents of five to six-year-olds will not be surprised to hear other kids do this, but I hope it gets them to think about why children do this, and why at this age.

SRCD: Can you please explain how this research might be helpful for researchers, parents, caregivers, teachers and others who work with children?

Ms. Kiera Parece: Absolutely. Parents, caregivers, teachers, or researchers who work with kids are often facing this basic dynamic: they want to get a child to do something. They have some kind of goal for the kid (whether a chore, or something the child needs to learn, or whatever), and they need to communicate that

goal to the child. But the child has their own goals, and their goal might not be the same as the parent or teacher or caregiver.

Usually, this process is so obvious and transparent we don't even think about it: we tell the child what we want, and the child either does it or does not do it. The use of loopholes throws that process off balance. It's like a visual illusion; it's a breakdown that gets you to think about a process that usually works fine. In this case, it highlights that all language is fuzzy, and that cooperative communication involves a process in which the child first needs to understand what we want and then decide what to do about that. So, we hope this research highlights for teachers and caregivers that everyday communication is actually pretty special, that loopholes are not just something one child does but something a lot of kids do, that it can be creative and witty and funny, and that it is the cornerstone for a behavior we see all over the place as adults.

More generally, we also think this research is helpful for policymakers who are in a similar position to parents. That is, instead of a parent trying to get a child to do something, think of an authority figure more generally trying to get someone within their authority to do something, whether it is the government, the law, or engineers developing artificial intelligence systems. This research is helpful in understanding how intentional misunderstandings emerge, which hopefully sets the foundation for how to avoid them in cases where we want to avoid them, or how to use them in cases where we want to encourage them.

SRCD: Can you please address some of the research limitations?

Ms. Kiera Parece: Great point, and like any research this one had limitations too. The children who participated in our studies were based in the United States, and it's possible that differences in culture and parenting styles play a role in the emergence and use of loopholes. Also, we focused on children's relationship with parents, but they likely use loopholes in other situations and relationships as well, ones that vary in intimacy (say, teachers and babysitters) or hierarchy (think of the difference between a parent asking you to do something or a younger sibling asking you to do something. You may use a loophole with your parents, but you might just tell your younger brother 'no!').

In addition, we focused on children from four to ten years of age. While we found a very interesting transition there, it leaves out parts of the developmental picture. Additional work with teenagers and toddlers can tell a clearer story of the development of loopholes.

SRCD: What's next in this field of research?

Ms. Kiera Parece: There's so many interesting questions still open when it comes to loopholes in general, and loopholes in children more specifically.

To pick a few of those:

First, while we found a robust and non-obvious developmental pattern in understanding loopholes, more work is needed to understand *why* the transition is happening at those ages. Why don't children start using loopholes robustly around ages three to four, or eight to nine? It probably has something to do with the specific cognitive skills necessary to engage with them, so that charts a clear research direction that looks more directly at the correlation between the use of loopholes and other developmental phenomena.

On top of that, we found that children believe that loopholes will lead to less trouble than simply defying a request. But it doesn't explain why they think that. We're not short on answers there, it's just that there are several and it isn't clear which is the right one. For example, maybe loopholes get you out of trouble because they are funny and creative. Or maybe it is because they provide 'plausible deniability', so a child can claim they generally didn't understand the request.

But that just raises more questions. For example, why are loopholes funny? They very much are, that's just an empirical fact, and kids thought they were funny too. But it's not obvious why acting on the letter of the law as opposed to the spirit of the law makes even a five-year-old crack up. We have some thoughts on this, but it'll take more research to figure out.

And for "plausible deniability", the more you think about it the weirder that explanation sounds. The child who was told to 'put the tablet down' and put it on the table only to keep playing games on it, can they honestly claim they were confused? The parent knows what they meant, the child knows what they meant, the child knows the parent knows what they meant, what is 'plausible' about a loophole? Finally, I'm sure parents, teachers, caregivers, and AI engineers would appreciate knowing what can make loopholes more or less pervasive.

++

This work was supported by the National Science Foundation's (NSF) Science of Learning and Augmented Intelligence program and the Jacobs Foundation.

Summarized from an article in Child Development, "Learning Loopholes: The Development of Intentional Misunderstandings in Children" by Bridgers, S., (Department of Brain and Cognitive Sciences at the Massachusetts Institute of Technology, and Department of Psychology at Harvard University), Parece, K., Iwasaki I., Broski, A., Schulz, L., (Department of Brain and Cognitive Sciences at the Massachusetts Institute of Technology) and Ullman, T., (Department of Psychology at Harvard University). Copyright 2025 The Society for Research in Child Development. All rights reserved.