

Fixing others' property: Young children make exceptions to property rights when violations
benefit owners
by

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Author's declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

Property rights serve to protect owners, and to prevent them from being deprived or inconvenienced. However, perhaps modifying others' property will be acceptable if we improve it, or modify it for the owner's benefit. I conducted five experiments (total N = 480) to examine how young children view improving others' property without asking. Children were shown a story with two characters, one of whom owned a broken object and then left for a minute. I then asked about the other character manipulating the broken object in a variety of ways. In Experiment 1, 3-5-year-olds said it was good to fix the broken object, but bad to move it. In Experiments 2 & 3, 4-6-year-olds found it more acceptable to fix and replace broken property than to look at or move it. Experiment 4 showed the same pattern of results as Experiment 3, and the relationship between owner and actor did not matter. Finally, in Experiment 5 children again found it more permissible to fix property than to manipulate the object through other actions. They judged actions with objective improvements (i.e., fixing) more acceptable than subjective ones (i.e., painting preferred colour), suggesting improvement type matters. These findings are the first to show that children make exceptions to ownership rights when the owner is objectively benefitted.

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Firstly, I would like to thank my supervisor Ori Friedman for his unwavering support and guidance throughout this program. Thank you for always having an open door, and being willing to answer any and all questions I had. My success in writing this thesis is largely attributed to everything you have taught me, and you have helped me become a better researcher, writer, and presenter. I admire your passion and enthusiasm for your work, and hope that I will one day be able to inspire and teach others the way you have done for me.

Secondly, I would like to thank all of the Developmental graduate students, members of the Child Cognition Lab, daycares and schools, and families and children who participated in my research. This research would not have been possible without them.

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Table of contents

| | |
|-------------------------------------|------------|
| Author's declaration | ii |
| Abstract | iii |
| Acknowledgements | iv |
| List of figures | vi |
| List of tables | vii |
| Introduction..... | 1 |
| The Current Experiments..... | 4 |
| Experiment 1 | 5 |
| Methods..... | 5 |
| Results and Discussion..... | 6 |
| Experiment 2 | 9 |
| Methods..... | 9 |
| Results and Discussion..... | 10 |
| Experiment 3 | 13 |
| Methods..... | 13 |
| Results and Discussion..... | 13 |
| Experiment 4 | 16 |
| Methods..... | 16 |
| Results and Discussion..... | 16 |
| Experiment 5 | 21 |
| Methods..... | 21 |
| Results and Discussion..... | 22 |
| General Discussion | 25 |
| Limitations..... | 26 |
| Future Directions..... | 28 |
| References | 31 |

List of figures

| | |
|---|----|
| Figure 1. Sample slides and scripts from Experiment 1 (Fix Condition) | 6 |
| Figure 2. Mean score by condition for each age. Error bars represent restricted SE. | 7 |
| Figure 3. Mean score by action type for each age. Error bars represent restricted SE. | 10 |
| Figure 4. Mean score by action type for each age. Error bars represent restricted SE. | 14 |
| Figure 5. Mean score by action type and age for each condition. Error bars represent restricted SE. | 18 |
| Figure 6. Sample slides and scripts from Experiment 5 (Objective Improvement Condition) | 21 |
| Figure 7. Mean score by action type and age for each condition. Error bars represent restricted SE. | 23 |

List of tables

Table 1. Means and (*SDs*) of responses by condition/action type and age 7

Introduction

Usually, people are not allowed to use or modify other's property. For example, imagine you have a pair of headphones. Your neighbour would not be permitted to take or use your headphones without consent. However, instances may arise where non-owners can act on other's property. For example, if your headphones are broken, your neighbour may be allowed to fix them without asking. Here, I explore whether young children deem improving people's property without permission acceptable. Investigating such issues can inform us about how children represent and understand ownership rights.

One possibility is children will view such actions as unacceptable. Accounts of ownership often hold people can use their property freely, while requiring they ask before using other's belongings. This is known as the right of exclusion (Snare, 1972). Previous findings indicate children strongly uphold this right. For example, 3-year-olds protest if a puppet attempts to take or harm another child's property (Rossano, Rakoczy, & Tomasello, 2011). Children also take the owner's side when an owner and non-owner disagree about an object's use. More specifically, from age 3, children support an owner who wants to use their property, even if a non-owner has and needs it (Neary & Friedman, 2014). Beginning at age 4, children also understand how ownership affects an object's purpose. They believe an owner can use their object in a variety of ways, but a non-owner has limited use, even for harmless actions. They even uphold owner's rights regardless of if the owner is known or present (Nancekivell & Friedman, 2014). Additionally, from age 4, children believe people require an owner's consent to share or discard property (Kim & Kalish, 2009). If children also judge fixing another's property without permission unacceptable, it would provide further evidence they strongly uphold the right of exclusion.

Alternatively, children might deem improving property without permission acceptable. This is also plausible since we make exceptions to the right of exclusion in our everyday lives. For example, moving someone's property from the ground to the lost and found is acceptable (so they can find it), yet this right is technically violated. Two accounts predict that children might also find improving property without consent acceptable. One account holds that children flexibly uphold the right of exclusion. In addition to returning lost property, exceptions are made to prevent harm and children ignore others' ownership rights in emergencies. Neary and Friedman (2014) found 3-5-year-olds allowed non-owners to use property in emergencies (i.e., using an object to prevent harm to an endangered animal), even if the owner said they did not want them to. On top of rights related to ownership, children flexibly uphold other moral rules. For example, children find it acceptable to refuse to help others when the cost of helping is high and the need is low (Siersma, Thijs, Verkuyten, & Komter, 2014). Children also lie to prevent moral transgressions, such as giving the incorrect location of a target when someone wants to steal from them (Harvey, Davoodi, and Blake, 2018). Together, these findings suggest that children acknowledge and prioritize extraneous factors such as harm and outcome when considering whether moral rules need to be upheld. Since we occasionally disregard the right of exclusion, and improving property results in a positive outcome, it is possible that children flexibly uphold this right and judge these actions acceptable.

Another account holds that children may find these situations acceptable because they do not strictly adhere to the right of exclusion. Instead, children may follow a principle of tacit permission. On this account, non-owners are not necessarily excluded from objects, but are restricted from actions that would violate the owner's wishes. However, if an owner had some desire regarding their property, it would be okay for non-owners to fulfill it. Returning to the lost

and found example, we presume owners want their lost property returned which makes it okay to move it. Previous work suggests children understand rules can occasionally be broken to meet individuals' desires. For example, in one study, 3-5-year-olds rated it more permissible to hit an animal when this made the animal happy and petting made them cry than vice versa (Zelazo, Helwig, & Lau, 1996). Therefore, if children follow a principle focusing on inferred permission (rather than exclusion), it is reasonable to expect they find improving other's property acceptable, even without asking.

The Current Experiments

I conducted five experiments to examine how young children view improving others' property without permission. In Experiment 1, 3-5-year-olds were told about a character who temporarily left a broken object in a park. In a between-subjects design, children were asked whether it would be okay for a non-owner (actor) to move or fix it. In Experiment 2, 4-6-year-olds were shown the same story as Experiment 1 and were asked if it would be okay for the actor to look at the object, move it a short distance, fix it, or replace it with a working version (within-subjects). Experiment 3 used the same design as Experiment 2, but I asked if the actor was allowed to do each action to focus on the permissibility of the actions rather than the outcome. In Experiment 4, 4-6-year-olds were shown a similar protocol. However, I also specified the characters' relationship (between-subjects). They were described as strangers, or as classmates. Finally, in Experiment 5, 4-6-years-old were shown broken property, or property that the owner wished was modified to being a different colour (between-subjects) and were asked to judge the acceptability of the actor doing similar actions as the previous experiments.

Experiment 1

In this experiment, I examined whether young children view manipulating other's property through different actions positively or negatively. To determine if there are developmental changes in these judgements, 3- to 5-year-old children were tested.

Methods

Participants. I tested 120 children: 40 3-year-olds ($M = 3;6$, range = 3;0-3;9, 18 female), 40 4-year-olds ($M = 4;6$, range = 4;0-4;11, 19 female), and 40 5-year-olds ($M = 5;6$, range = 5;0-5;11, 24 female). Five additional children (two 3-year-olds, two 4-year-olds and one 5-year-old) were also tested but were excluded due to not answering the test questions ($n = 4$) or failing the comprehension check twice ($n = 1$). Children were recruited from and tested at child-care centers and schools in the Waterloo, Canada region.

Procedure. Children were brought to a quiet room to complete the experiment. They listened to a story which was shown on a laptop through a PowerPoint presentation and was narrated by the experimenter (see Figure 1 for sample slides and scripts). In the story, two girls were at a park. One girl owned a hula hoop, which was broken, and she left to go home for a minute. Children were randomly assigned to one of two between-subjects conditions. In the fix condition, the actor (non-owner) went over and fixed the broken hula hoop so that it worked again. In the move condition, the actor went over and moved the broken hula hoop onto a nearby bench. In both conditions, the actor then moved back to her original spot so it was clear she was not going to do anything else to the hula hoop. After the story, children were asked to assess whether the action was good or bad (e.g. *Was it good or bad for the girl to [move/fix] the hula hoop?*). After answering, children were asked a follow up question about the severity of this choice: *Was it a little [good/bad], medium [good/bad], or very [good/bad]?* These responses

were recoded onto a 6-point scale ranging from 1 (very bad) to 6 (very good); this procedure was inspired by previous studies on children's judgments of acceptability (e.g., Olson & Shaw, 2011; Shaw & Olson, 2015). One child responded "I don't know" to the follow up question, and so I conservatively treated it as a response of "a little". This testing method was also used in the subsequent experiments.

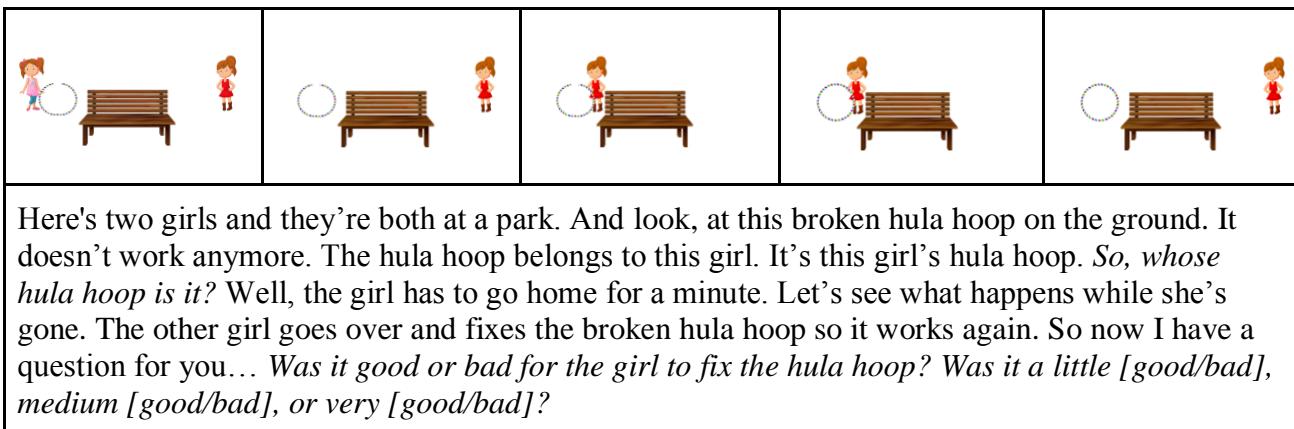


Figure 1. Sample slides and scripts from Experiment 1 (Fix Condition)

Each story also included a comprehension question about which girl owned the hula hoop. If children answered incorrectly, the ownership information was repeated and they were asked the question again. If they answered incorrectly a second time, they were excluded from the analyses. This procedure was also used with the comprehension questions in subsequent experiments.

Results and Discussion

I examined whether children's responses (see Figure 2) varied by condition and age. It is important to note that the assumption of homogeneity of variance was violated as indicated by the Levene's Test, $F(5, 114) = 8.04, p < .001$. However, an ANOVA was still deemed appropriate as the samples sizes were all the same, and the smallest standard deviation was less than 4 times smaller than the largest standard deviation (Howell, 2010, p. 334). A 2(condition:

fix, move) x 3(age-in-years: 3, 4, 5) ANOVA revealed a main effect of condition, $F(1, 114) = 106.19$, $MSE = 2.51$, $p < .001$, $\eta^2_p = .48$, as children in the Fix condition scored higher than those in the Move condition (see Table 1). There was no main effect of age, $F(2, 119) < 1$, $MSE = 2.51$, $p = .480$, and no condition by age interaction $F(2, 114) < 1$, $MSE = 2.51$, $p = .885$.

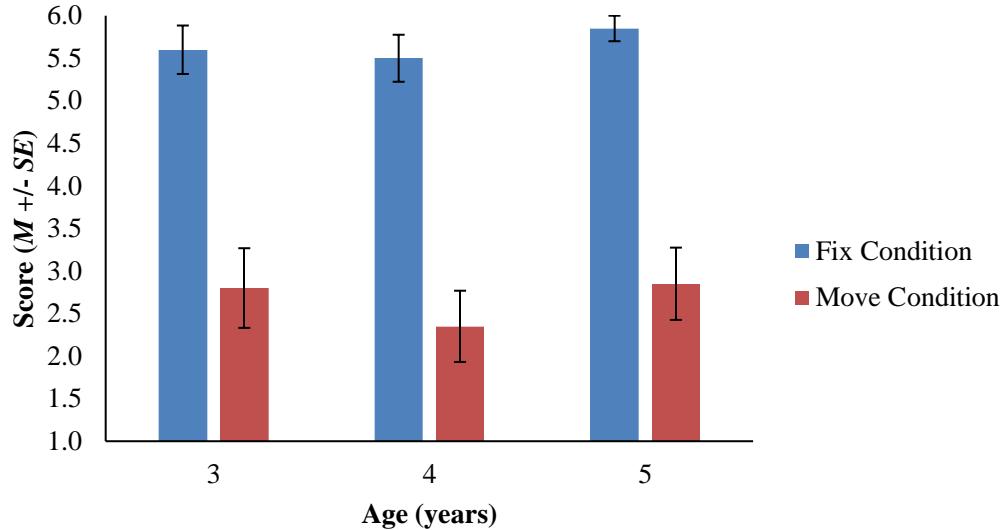


Figure 2. Mean score by condition for each age. Error bars represent restricted *SE*.

Table 1. Means and (*SDs*) of responses by condition/action type and age

| Experiment | | 3-year-olds | 4-year-olds | 5-year-olds | 6-year-olds |
|---------------|---------|-------------|-------------|-------------|-------------|
| 1 | Fix | 5.60(1.27) | 5.50(1.24) | 5.85(0.67) | |
| | Move | 2.80(2.09) | 2.35(1.87) | 2.85(1.90) | |
| 2 | Look | | 3.20(0.62) | 3.25(0.79) | 2.95(0.83) |
| | Fix | | 3.45(0.51) | 3.70(0.47) | 3.75(0.55) |
| | Replace | | 3.25(0.55) | 3.05(1.00) | 2.85(1.14) |
| | Move | | 2.75(0.91) | 2.30(0.98) | 1.95(1.00) |
| 3 | Look | | 2.65(0.88) | 3.05(0.89) | 3.05(1.15) |
| | Fix | | 3.05(0.76) | 3.30(0.57) | 3.00(1.26) |
| | Replace | | 2.80(0.77) | 2.75(0.64) | 2.45(1.15) |
| | Move | | 1.80(0.77) | 1.80(0.70) | 1.30(0.66) |
| 4 (strangers) | Near | | 2.25(0.91) | 2.35(0.81) | 2.55(1.05) |
| | Fix | | 3.10(0.79) | 3.20(0.83) | 3.15(1.09) |
| | Replace | | 2.70(1.03) | 2.40(1.05) | 2.05(1.19) |
| | Move | | 1.95(0.83) | 1.85(0.81) | 1.60(1.05) |
| 4 (familiar) | Near | | 2.50(0.83) | 2.80(0.83) | 2.40(1.10) |
| | Fix | | 3.10(0.72) | 3.35(0.59) | 3.20(0.77) |
| | Replace | | 2.85(0.75) | 2.70(0.98) | 2.35(1.04) |

| | | | | |
|----------------|--------|------------|------------|------------|
| | Move | 2.30(0.80) | 1.95(0.60) | 1.35(0.49) |
| 5 (objective) | Beside | 2.95(0.83) | 2.80(0.83) | 2.70(1.03) |
| | Fix | 3.35(0.81) | 3.25(1.02) | 2.95(1.15) |
| | Look | 2.85(0.93) | 1.70(0.92) | 1.70(0.98) |
| | Take | 2.00(0.92) | 1.30(0.47) | 1.25(0.55) |
| 5 (subjective) | Beside | 2.95(0.76) | 3.20(0.89) | 2.65(1.09) |
| | Paint | 2.40(0.88) | 2.05(1.28) | 2.00(0.92) |
| | Look | 2.50(0.76) | 2.95(1.23) | 2.00(0.92) |
| | Take | 2.25(0.85) | 1.80(1.06) | 1.25(0.44) |

These findings suggest that 3- to 5-year-olds generally view manipulating others' property positively when it results in a beneficial outcome such as it being fixed. These results suggest children do not always strongly uphold the right of exclusion and instead either flexibly uphold it or follow a principle of tacit permission. However, asking questions in this manner could be problematic for actions that are not necessarily good or bad. Therefore, in the second experiment I wanted to improve the question wording. I also added other actions in order to get a better sense of how children view fixing objects without the owners' permission relative to other actions.

Experiment 2

Methods

Participants. I tested 60 children: 20 4-year-olds ($M = 4;6$, range = 4;0-4;11, 13 female), 20 5-year-olds ($M = 5;7$, range = 5;0-5;11, 9 female), and 20 6-year-olds ($M = 6;5$, range = 6;0-6;11, 9 female). Ten 3-year-olds were also tested but their answers did not differ from question to question, suggesting the experiment's procedure was too difficult for them. As such, they were subsequently excluded and I limited the age range to include 4-6-year-olds. Children were recruited from and tested at child-care centers and schools in the Waterloo, Canada region.

Procedure. Children were again told a story about two girls at a park. One girl owned a broken hula hoop. Children were asked about four actions the actor could do to the broken hula hoop: look at it, fix it, replace it with a new hula hoop, and move it. I added the looking question because looking at someone else's property should be completely acceptable. The replacing question was added because it results in a positive outcome; the girl has a working hula hoop, which is the same outcome as fixing the hula hoop. However, replacing someone's property is a more severe violation of their ownership rights than simply fixing it. The order in which the questions were asked was counterbalanced as being asked from most (looking) to least neutral (moving) (in that they do not harm the object further or interfere with the owner using her property) or vice versa. This counterbalancing was also used in all subsequent experiments.

Rather than asking if it was good or bad to do each action as in Experiment 1, I asked whether it would be okay for the actor to do each action (i.e., "Would it be okay for this girl to [look at/fix/replace/move] the broken hula hoop?"). After answering each question, children were asked a follow up question about the severity of this choice: Definitely [yes/no] or maybe [yes/no]? Then, these responses were recoded onto a 4-point scale ranging from 1 (definitely no)

to 4 (definitely yes); nine children did not respond to all of the follow up questions, and so I conservatively treated their omissions as a response of “maybe”. Here is the script:

Here are two girls and they’re at a park. And look, at this broken hula hoop on the ground. It doesn’t work anymore. The hula hoop belongs to this girl. It’s this girl’s hula hoop. *So, whose hula hoop is it?* Well, this girl has to go home for a minute. *Do you see this other girl over here? Would it be okay for this girl to look at the broken hula hoop? Definitely [yes/no] or maybe[yes/no?] Would it be okay for this girl to fix the broken hula hoop so that it works again? Definitely[yes/no] or maybe [yes/no]? Would it be okay for this girl to replace the broken hula hoop with a new one? Definitely [yes/no] or maybe [yes/no]? Would it be okay for this girl to move the broken hula hoop? Definitely [yes/no] or maybe [yes/no]?*

Results and Discussion

I examined whether children’s responses (see Figure 3) varied by action type and age. A 4(action type: look, fix, replace, move) x 3(age-in-years: 4, 5, 6) ANOVA revealed a main effect of action type, $F(3, 171) = 32.32, MSE = 0.53, p < .001, \eta^2_p = .36$. There was no main effect of age, $F(2, 57) = 1.71, MSE = 1.02, p = .190$, and no action type by age interaction $F(6, 171) = 2.08, MSE = 0.53, p = .059$. The main effect of action type resulted because moving the object was less acceptable than all other actions, replacing the object was less acceptable than fixing it, and looking at the object was less acceptable than fixing it (LSD post-hoc tests, all $p < .001$) (see Table 1).

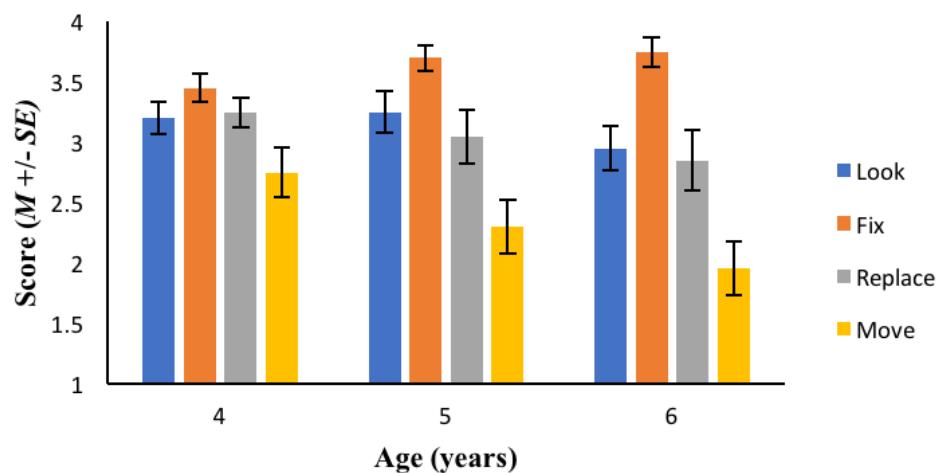


Figure 3. Mean score by action type for each age. Error bars represent restricted SE.

These findings suggest that when violating ownership rights, actions that result in a positive outcome are viewed as acceptable, and that the severity of the violation matters. This becomes clear because both fixing and replacing the broken hula hoop were viewed as acceptable, but, replacing the broken hula hoop was significantly less acceptable than fixing it. The acceptability of replacing an object depends on whether or not we find it fungible. That is, whether or not we believe it can be freely interchanged with another object. Previous work suggests that children do not believe objects are fungible. More specifically, 4- and 5-year-olds were shown scenarios involving identical looking objects, each of which were owned by a different character. One character went into their house and the second character took either their own object or the other character's object. When asked if this was okay, children judged it acceptable for them to take their own object, but not the other person's, even though they were identical (McEwan, Pesowski, & Friedman, 2016). Therefore, children may judge replacing the object as acceptable, although less acceptable than fixing it because they are balancing their object fungibility beliefs with benefiting the owner. Moving the object was viewed as unacceptable. Again, these results suggest children do not strongly uphold the right of exclusion, but rather flexibly uphold it and make exceptions or follow a separate principle of tacit permission.

A potential concern with my findings so far is that the test questions may have focused children's attention on the outcome of the actor's actions. For example, when I asked if it would be okay for the girl to do each action, children might have asked themselves whether the outcome would be beneficial. This may explain why looking at the object was viewed as less acceptable than fixing it, because it did not result in a positive outcome. Moving forward, I

wanted to shift the focus to the permissibility of the actions (i.e. focusing on how the actor is violating the owner's rights) rather than the outcome (i.e. whether or not the owner has a working hula hoop). Therefore, in Experiment 3 I replicated the procedure of Experiment 2 but changed the question wording to ask if the actor is *allowed* to complete each action in order to focus on the permissibility of the actions.

Experiment 3

Methods

Participants. I tested 60 children: 20 4-year-olds ($M = 4;6$, range = 4;2-4;11, 9 female), 20 5-year-olds ($M = 5;4$, range = 5;0-5;9, 11 female), and 20 6-year-olds ($M = 5;4$, range = 6;0-6;10, 10 female). Ten 3-year-olds were also tested but their answers did not differ from question to question, suggesting the experiment's procedure was too difficult for them. As such, they were subsequently excluded and I limited the age range to include 4-6-year-olds. Children were recruited from and tested at child-care centers and schools in the Waterloo, Canada region.

Procedure. Children were tested using the same procedure from Experiment 2. The only change was to the wording of the test question. In this experiment, I asked whether the actor was allowed to do each action to the broken hula hoop (i.e., “Is this girl allowed to [look at/fix/replace/move] the broken hula hoop?”). The same follow up question from Experiment 2 to determine the severity of their choice was included. Then, these responses were recoded onto a 4-point scale ranging from 1 (definitely no) to 4 (definitely yes); eight children did not respond to all of the follow up questions, and so I conservatively treated their omissions as a response of “maybe”.

Results and Discussion

I examined whether children’s responses (see Figure 4) varied by action type and age. A 4(action type: look, fix, replace, move) x 3(age-in-years: 4, 5, 6) ANOVA revealed a main effect of action type, $F(3, 171) = 43.84$, $MSE = 0.60$, $p < .001$, $\eta^2_p = .44$. There was no main effect of age, $F(2, 57) = 1.20$, $MSE = 1.27$, $p = .310$, and no action type by age interaction $F(6, 171) = 1.37$, $MSE = 0.60$, $p = .229$. The main effect of action type resulted because moving the object

was less acceptable than all other actions and replacing the object was less acceptable than fixing it (LSD post-hoc tests, all $p < .001$) (see Table 1).

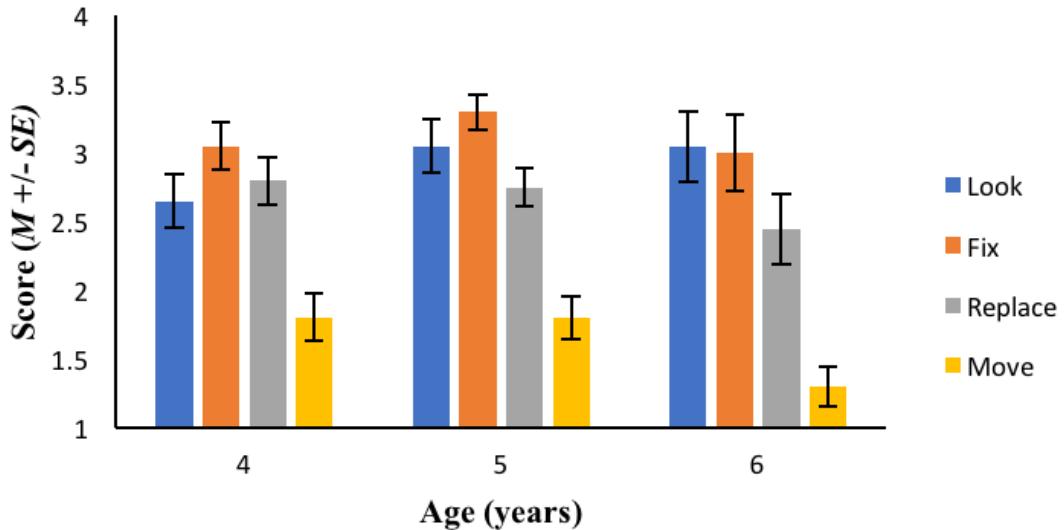


Figure 4. Mean score by action type for each age. Error bars represent restricted SE .

These results suggest that my findings are robust because actions that resulted in a positive outcome were still viewed as acceptable, and the severity of the action mattered for acceptability. This is apparent because fixing and replacing the broken hula hoop were both acceptable, however, replacing was significantly less acceptable than fixing, probably due to object fungibility as previously discussed. Since looking was no longer significantly different from fixing, this suggests that the change in question wording was successful in shifting the focus from the outcome to the permissibility of the actions. Moving the object was still viewed as unacceptable. From the previous three studies, it is apparent that children do not always strongly uphold the right of exclusion. Instead, they either flexibly uphold the right of exclusion and make exceptions such as when the owner benefits or harm is involved, or they follow a separate principle of tacit permission.

However, in these three experiments I did not specify the relationship between the owner and actor. It is possible that children may have been making assumptions about their relationship. For example, children may have judged them to be friends or to have some other relationship because they were at the park together. This may explain why children's acceptability judgements were quite high. Maybe children would strongly uphold the right of exclusion if relationship information was provided.

On the other hand, if children are following a principle of tacit permission, I would also expect the relationship between the owner and non-owner to impact acceptability judgements. For example, when a friend comes over to your house they do not necessarily need to ask permission to sit on your couch. But, if a salesperson knocked on your door they would need permission to come in and do so. This is because your friend can assume they are welcome to sit down (i.e., tacit permission), while the salesperson cannot as they do not have a relationship with you. So, if children are following this principle I would also expect them to judge it more acceptable for a familiar person, such as a friend or family member, to fix one's belongings than a stranger.

In Experiment 4 I replicated the procedure of Experiment 3 but manipulated the relation between the owner and non-owner. Also, instead of asking about looking at the hula hoop, I asked about standing near it in case there was some assumption about what looking at the hula hoop entailed (i.e., picking it up and examining it closely).

Experiment 4

Methods

Participants. I tested 120 children: 40 4-year-olds ($M = 4;6$, range = 4;0-4;11, 23 female), 40 5-year-olds ($M = 5;6$, range = 5;0-5;11, 20 female), and 40 6-year-olds ($M = 6;5$, range = 6;1-6;10, 18 female). Children were recruited from and tested at child-care centers and schools in the Waterloo, Canada region.

Procedure. Children were tested using a similar procedure as Experiment 3. However, in this experiment, I specified the relationship between the two characters (between-subjects). They were described as either strangers or classmates. Children were then asked to judge the acceptability of the same four actions as Experiment 3, except looking at the broken hula hoop was replaced by standing near it (within-subjects). Then, these responses were recoded onto a 4-point scale ranging from 1 (definitely no) to 4 (definitely yes); 24 children did not respond to all of the follow up questions, and so I conservatively treated their omissions as a response of “maybe”. Here is the script:

Here are two girls and they’re at a park. [The girls do not know each other. They’ve never met before/The girls know each other. They’re in the same class] And look, at this broken hula hoop on the ground. It doesn’t work anymore. The hula hoop belongs to *this* girl. It’s *this* girl’s hula hoop. So, whose hula hoop is it? Well, the girl has to go home for a minute. *Do you remember this other girl over here? Is she allowed to stand near the broken hula hoop? Definitely [yes/no] or maybe [yes/no]? Is she allowed to fix the broken hula hoop so that it works again? Definitely [yes/no] or maybe [yes/no]? Is she allowed to replace the broken hula hoop with a new one that works? Definitely [yes/no] or maybe [yes/no]? Is she allowed to move the broken hula hoop? Definitely [yes/no] or maybe [yes/no]?*

Results and Discussion

I examined whether children’s responses (see Figure 5) varied by relationship, action type and age. It is important to note that the assumption of homogeneity of variance was violated as indicated by the Levene’s Test, $F(5, 114) = 2.43, p = .039$. However, an ANOVA was still

deemed appropriate as the samples were all the same size, and the smallest standard deviation was less than 4 times smaller than the largest standard deviation (Howell, 2010, p. 334). A 2(condition: strangers, familiar) x 4(action type: near, fix, replace, move) x 3(age-in-years: 4, 5, 6) ANOVA revealed a main effect of action type, $F(3, 342) = 57.00$, $MSE = 0.64$, $p < .001$, $\eta^2_p = .33$. There was no main effect of age, $F(2, 114) = 2.76$, $MSE = 1.24$, $p = .068$, and no main effect of condition, $F(1, 114) = 1.94$, $MSE = 1.24$, $p = .167$. The main effect of action type resulted because moving the object was less acceptable than all other actions, and standing near the object and replacing the object were less acceptable than fixing it (LSD post-hoc tests, all $p < .001$) (see Table 1).

There was an action type by age interaction, $F(6, 342) = 2.60$, $MSE = 0.64$, $p = .018$, $\eta^2_p = .04$. No other interactions were significant (all F s < 1). LSD post-hoc tests revealed that the interaction between action type and age resulted because 6-year-olds judged replacing the broken object as less acceptable than 4-year-olds, $p = .013$, and 6-year-olds also judged moving the broken object as less acceptable than both 5-year-olds, $p = .017$ and 4-year-olds, $p < .001$. There were no other differences in acceptability of the other actions based on age (see Table 1). The acceptability of these actions appears to be influenced by age, with older children having more rigid acceptability judgements. However, no age effects were found in previous experiments and so these results should be interpreted with caution.

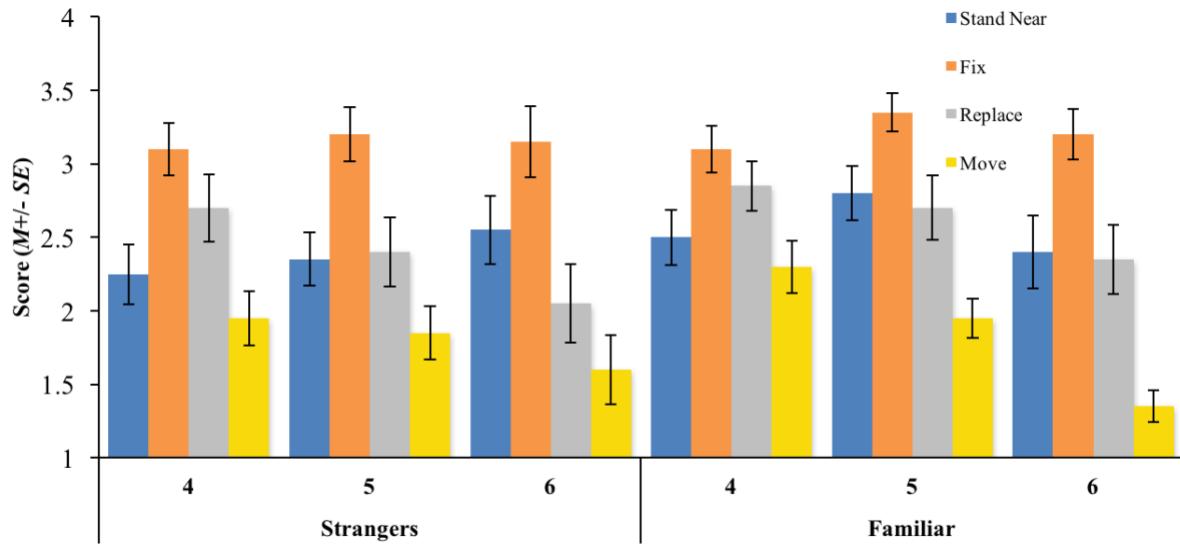


Figure 5. Mean score by action type and age for each condition. Error bars represent restricted *SE*.

These results suggest that the relationship between the owner and actor does not influence the acceptability of the actor manipulating the owners' property. It also suggests that children were either not making assumptions about their relationship in previous experiments, or that they were, but relationship did not matter. This is apparent because there was no main effect of their relationship, and no interaction of their relationship with any other variables. Therefore, children seem to judge improving other's broken property as acceptable regardless of who fixes the object.

This suggests that they do not always strongly uphold the right of exclusion. It also casts doubt on the tacit permission account because under this account, relationship should matter as previously discussed. However, I found no impact of relationship on acceptability judgements. But, this does not necessarily rule out the account that children are using a principle of tacit permission because they may not consider relationships to be important. Instead, maybe they are focusing on the fact that if the actor *had* asked the owner, the owner would say yes regardless of who it was, so they do not need to ask.

In the previous experiments, the manipulation always involved fixing broken property. It is possible that children's acceptability judgements for fixing and replacing the broken object were high because this is an objective improvement. For example, most people would be upset if their property was broken and they were no longer able to use it. Thus, they may be happy that someone fixed their property, even if it technically violated their ownership rights.

However, sometimes what counts as an improvement is subjective and depends on individual preferences or desires. For example, if an owner had a broken chair, fixing it would improve it in an objective manner. This is because most people would agree that fixing the broken chair improves it. But, if an owner had a chair they wished was blue instead of brown, painting it blue would improve it in a subjective way to them. This is subjective because it is a unique, individual preference that would not be shared by the majority of people (some people may prefer it stay brown, others would prefer red to blue, etc.). Since these actions both fulfill the owner's desires, I would expect that if children are following a principle of tacit permission they would find both improvement types equally acceptable. Previous work suggests children understand both types of desires as they could identify how agents would feel after certain outcomes in both objective and subjective situations (i.e., bike breaking vs. wanting one sticker over another) (Rakoczy, Warneken, Tomasello, 2007). Further, children may understand these subjective improvements because previous work found they understand that people can have idiosyncratic desires and preferences not shared by others (Wright Cassidy et al., 2005; Zelazo, Helwig, & Lau, 1996; Wellman & Woolley, 1990).

Therefore, in Experiment 5 I used a similar procedure to Experiment 3 but asked about either objective or subjective improvements- fixing a broken object or painting an object in accordance with the owner's preferences. This way, I would be able to see if acceptability

judgements are influenced by the type of improvement, either objective (fixing broken property) or subjective (painting property a preferred colour). Since there was no effect of relationship between the owner and actor in Experiment 4, this specification was dropped.

Experiment 5

Methods

Participants. I tested 120 children: 40 4-year-olds ($M = 4;6$, range = 4;0-4;11, 19 female), 40 5-year-olds ($M = 5;6$, range = 5;0-5;11, 26 female), and 40 6-year-olds ($M = 6;5$, range = 6;0-6;11, 18 female). Children were recruited from and tested at child-care centers and schools in the Waterloo, Canada region¹.

Procedure. Children were tested using a similar procedure as Experiment 3. However, in this experiment, the broken hula hoop was replaced by a mailbox. I manipulated whether the mailbox was broken and the owner wished it was fixed, or if it was blue and she wished it was red (between-subjects; see Figure 6 for sample slides and scripts). This way, the mailbox could either be improved objectively (fixing it when it was broken) or subjectively (painting it red when it was blue).

In this experiment, I showed a girl (the owner) at her house with her mailbox. Then, she left to go on vacation and another girl (actor) appeared. Children were then asked to judge the acceptability of the actor doing four different actions: standing beside, improving it by either fixing or painting it, looking inside, and taking things from inside of it (within-subjects). Then, these responses were recoded onto a 4-point scale ranging from 1 (definitely no) to 4 (definitely yes); 17 children did not respond to all of the follow up questions, and so I conservatively treated their omissions as a response of “maybe”.



¹ 2 of the 5-year-olds were tested at a local science centre.

Here is a girl and this is her mailbox. The mailbox is broken. She wishes it was fixed. Well, she is going to go away on vacation. And look! Here comes another girl. So now I have a question for you. *Is she allowed to stand beside the mailbox? Definitely [yes/no] or maybe [yes/no]? Is she allowed to fix the broken mailbox? Definitely [yes/no] or maybe [yes/no]? Is she allowed to look inside the mailbox? Definitely [yes/no] or maybe [yes/no]? Is she allowed to take things from inside the mailbox? Definitely [yes/no] or maybe [yes/no]?*

Figure 6. Sample slides and scripts from Experiment 5 (Objective Improvement Condition)

Results and Discussion

I examined whether children's responses (see Figure 7) varied by improvement type, action type and age. A 2(improvement type: objective, subjective) x 4(action type: beside, improve, look, take) x 3(age-in-years: 4, 5, 6) ANOVA revealed a main effect of action type, $F(3, 342) = 46.42, MSE = 0.76, p < .001, \eta^2_p = .29$, a main effect of age, $F(2, 114) = 12.74, MSE = 1.11, p < .001, \eta^2_p = .18$ and an interaction between action type and improvement type, $F(3, 342) = 16.94, MSE = 0.76, p < .001, \eta^2_p = .13$. These findings were qualified by a 3-way interaction between action type, improvement type, and age, $F(6, 342) = 2.22, MSE = 0.76, p = .040, \eta^2_p = .04$. No other main effects or interactions were significant. (see Table 1). In order to break-down this 3-way interaction, I conducted separate analyses to examine the effect of improvement type on the acceptability of action type at each age.

4-year-olds. In the objective improvement condition, 4-year-olds judged fixing the broken mailbox as more acceptable than looking inside of it. They also judged taking things from inside the mailbox as less acceptable than all other actions. However, in the subjective improvement condition, the only difference was that they judged taking things from inside the mailbox as less acceptable than standing beside it (LSD post-hoc tests, all $p < .050$) (see Table 1).

5-year-olds. In the objective improvement condition, 5-year-olds judged fixing the broken mailbox as more acceptable than standing beside or looking inside of it. They also judged

taking things from inside the mailbox as less acceptable than all other actions except looking inside of it. However, in the subjective improvement condition, 5-year-olds judged painting and taking things from inside the mailbox as less acceptable than standing beside or looking inside of it (LSD post-hoc tests, all $p < .001$) (see Table 1).

6-year-olds. In the objective improvement condition, 6-year-olds judged fixing the broken mailbox and standing beside it as more acceptable than looking inside of it. They also judged taking things from inside the mailbox as less acceptable than all other actions except looking inside of it. However, in the subjective improvement condition, 6-year-olds judged taking things from inside the mailbox as less acceptable than all other actions, and the only other difference was that looking inside of it was less acceptable than standing beside it. (LSD post-hoc tests, all $p < .050$; see Table 1).

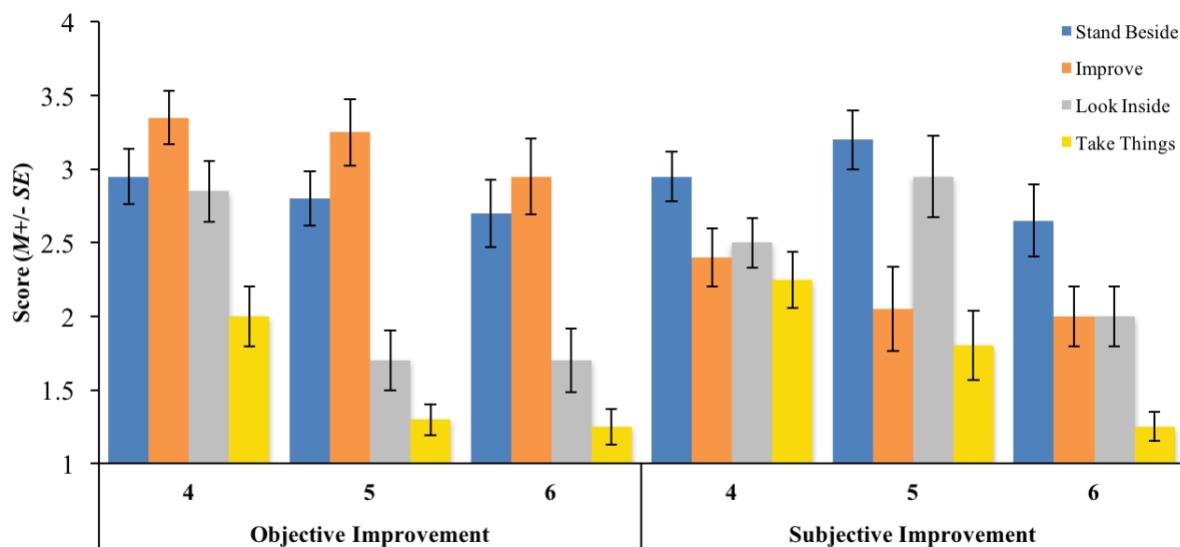


Figure 7. Mean score by action type and age for each condition. Error bars represent restricted SE.

These results suggest that the type of improvement, either objective or subjective, influences its acceptability. This is apparent because across all ages children judged improving

another's property in a subjective manner as less acceptable than if they did so in an objective manner. When improving the property in a subjective manner, it was either equally or less acceptable than other actions. However, in the objective improvement condition, improving the property was consistently more acceptable than other actions, as in the previous experiments. This suggests children do not consider these types of improvements the same way. Therefore, when considering how property can be improved, they do not value owner's subjective desires as strongly as objective desires and the property's well-being. The acceptability of these actions also appears to be influenced by age, depending on the type of action. However, age effects were found inconsistently in previous experiments and so these results should be interpreted with caution. As discussed further below, these findings cast further doubt on the possibility that children's judgments about improving other's property depend on beliefs about tacit permission.

General Discussion

In these studies, I examined how young children view improving other's property by showing two girls, one of whom owned a broken object. She then left, and I asked about the other girl manipulating the broken object in multiple ways. In Experiment 1, 3-5-year-olds said it was good to fix the broken object, but bad to move it. In Experiments 2 & 3, 4-6-year-olds found it more acceptable to fix and replace broken property than to look at or move it. In Experiment 4 I found the same pattern of results as Experiment 3, and the relationship between owner and actor did not matter. Finally, in Experiment 5 children again found it more permissible to fix property than to manipulate the object through other actions. They judged actions with objective improvements (i.e., fixing) more acceptable than subjective ones (i.e., painting preferred colour), suggesting improvement type matters. Throughout all experiments, I found inconsistent age effects and so these should be interpreted cautiously and examined further.

I proposed three accounts for how children could view these scenarios. One possibility was children would uphold the right of exclusion and find these actions unacceptable, consistent with much of the work on their views of ownership rights (Rossano, Rakoczy, & Tomasello, 2011; Neary & Friedman, 2014; Kim & Kalish, 2009). However, in all five experiments children found fixing other's property without asking acceptable, suggesting they do not rigidly uphold the right of exclusion.

Another possibility was children would find these actions acceptable because they follow a principle of tacit permission. Under this principle, manipulating other's property without asking is allowed because we assume the owner is okay with it. Here, I would expect the relationship between the owner and actor to matter. As previously discussed, at a friend's house we assume we can come in and sit down on the couch. But, if a salesperson goes door to door, they must ask to do so. This demonstrates how interpersonal relationships influence an action's

acceptability under this principle. However, the relationship between owner and actor did not influence acceptability judgements. Additionally, as both objective (fixing) and subjective (painting another colour) improvements fulfill the owner's desires, the tacit permission account predicts them to be similarly acceptable. Yet, subjective enhancements were less acceptable than objective ones. Together, this suggests that children do not follow a principle of tacit permission.

Finally, a third possibility was children would flexibly uphold the right of exclusion and make exceptions when the owner benefited, as they do to prevent potential physical harm to others (Neary & Friedman, 2014). The results from these five experiments are most consistent with this account, suggesting children make exceptions such as when actions result in an objectively positive outcome. This is apparent because children found fixing another person's property without asking acceptable. Also, interpersonal relationship between owner and actor (classmate vs. stranger) did not matter, but action type did because while objective improvements were considered okay (i.e., fixing broken property), subjective ones were not (i.e., painting property a preferred colour). Thus, I suggest children flexibly uphold the right of exclusion and make allowances for objective improvements.

Limitations.

I continue by discussing some limitations which impact the conclusions one can draw from these results. One concern is the owner had to leave their property in order to ask if the actor could manipulate it without asking, which could be considered abandonment. If the owner had instead remained present, though, children might have judged manipulating property unacceptable, even with a positive outcome. However, the owner left temporarily (go home for a minute, go on vacation), and certain actions (i.e., moving, taking things, and painting another colour) were unacceptable, suggesting children did not treat the object as abandoned and

therefore fair game. Additionally, with the owner absent, the fixer could not ask for permission. But, if the owner had remained present, this would have been possible and it may have seemed weird for the actor to manipulate the object without asking. Also, if the owner stayed, children could have interpreted their lack of complaining or intervening as tacit permission.

Another potential concern is these findings simply reflect a belief that good equals acceptable. Children may believe “good” actions which have a positive outcome or are nice, are acceptable regardless of whether the actor gets permission. More specifically, fixing someone’s broken item is a nice thing to do, and results in a positive outcome. Therefore, children may judge it acceptable without considering ownership rights. But, other “good” actions were not deemed acceptable, suggesting a more complicated relationship. For example, replacing a broken object with a new one has the same outcome as fixing it (having a working object), and painting it a preferred colour also fulfills the owner’s desires. However, these actions were judged as less acceptable than fixing, even sometimes unacceptable. Rather, children may balance ownership rights and benefiting owners so they have useful and valuable property. Replacing a broken object might be less permissible because discarding property and replacing it with a new item, even one which looks similar, is a larger violation than fixing current property. This is especially likely as children tend to view objects as non-fungible (McEwan, Pesowski, & Friedman, 2016). In other words, although the outcome is the same, it may not be worth the violation. Additionally, subjective desires such as painting something a new colour might not increase the usefulness or value enough to disregard ownership rights. Subjective desires are also more likely to change and be difficult to meet (i.e., painting the wrong shade of red, deciding they want it purple now, etc.). So, while these actions result in good outcomes, they may not be considered good enough to warrant violating ownership rights. Therefore, these findings suggest a more

delicate relationship between upholding ownership rights and making allowances for beneficial outcomes.

Future Directions.

Several questions arise from these results which could be examined in future studies. Firstly, future studies could investigate the inconsistent age differences I found to follow the developmental trajectory of these judgements. It is possible that while younger children prioritize objective improvements over ownership rights, older children and adults would do the reverse and therefore judge these actions unacceptable. This is especially possible given their higher likelihood of owning property and greater experience interacting with others' and their property. Older children and adults may also consider additional factors that young children are not when making these judgements. For example, to improve someone's broken mailbox, you must first access their land without permission which also infringes on their rights. Also, when fixing a broken object, there is the potential risk of damaging it further or not fixing it correctly. Therefore, older children and adults may consider these issues too high of a risk to outweigh the benefit of fixing someone's property without permission.

Secondly, one could examine whether other factors influences acceptability. One such factor could be object history (i.e., if the object was a family heirloom). In the current experiments, the broken object's history was never specified. If the item was something without meaningful history (such as a hula hoop you just got for the summer), it may not matter to you if someone fixes it. But, if you had inherited your great-grandmother's engagement ring and one of the stones was loose, you might still be upset and unaccepting of someone fixing it without asking. Previous work suggests preschool aged children understand object history as it relates to ownership (Gelman, Manczak, & Noles, 2012). In addition, from age 3, children understand that

an object's value is subjective (Gelman & Davidson, 2016). Further, 4- to 7-year-olds judged objects with special histories (i.e., won as a prize) as more special than those with regular histories (i.e., bought at the store last week) (Pesowski & Friedman, *in press*). Therefore, making these specifications may demonstrate interesting caveats to children's acceptability judgements of fixing others' property. Or, it could show that in these scenarios they do not care about object history, only benefiting the owner.

Another factor that may influence acceptability is an object's monetary value (i.e., if the object was highly valuable). In the current experiments the object did not have high value given its nature. If the object had instead been one of high monetary value, we might expect acceptability judgements to be lower than those for a plastic toy. For example, imagine again that you have a pair of headphones which are broken. You might be okay with, and even happy that your neighbour fixed them without permission. However, if you had an original Picasso painting that had a broken frame, you might be extremely upset and unforgiving of your neighbour fiddling with this highly valuable piece of property, even if they fixed it. Not all value is necessarily monetary though, and object history which was discussed previously could also be considered in terms of value (sentimental value). Thus, there are parallels in how these factors could influence the acceptability of improving objects without permission.

Lastly, actors' expertise in repairing the object (i.e., professional vs. someone who has never done it before) may also influence acceptability. If the actor was a novice who did not have experience, we might expect acceptability judgements to be low compared to if the actor was a professional. For example, if your car needed an oil change, you might be more accepting of a professional mechanic fixing it without asking than a stranger who has never done it before. In the current experiments, the actor's expertise was never specified. Therefore, it would be

interesting to specify this information in the future to see if children consider skill level when making these judgements.

Finally, it would be informative to examine how children judge different kinds of subjective improvements. Subjective improvements could be as simple as changing the colour of an item, but they could also involve improvements which have more tangible benefits. For example, imagine someone prefers that a toy no longer makes a certain sound either because they do not like it (no harm) or because they find the sound scary (harm). Children may find subjective changes which prevent subjective harm more acceptable than those that do not, especially since they make exceptions to ownership rights to prevent more serious harm (Neary & Friedman, 2014). If they did, it would suggest children make exceptions to ownership rights when actions involve objective improvements or subjective ones with tangible benefits. But, that they do not consider idiosyncratic benefits (i.e., fulfilling an owner's cosmetic preferences) valuable enough to overrule ownership rights. Therefore, there are several interesting avenues that could be pursued from this line of research.

In conclusion, my findings are informative about how children uphold ownership rights. They have implications for how children's views of ownership rights develop as well as how they uphold them in complex situations. Rather than viewing them as fixed or unbreakable rules, they make exceptions when it objectively benefits owners.

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