Children's and Adults' Reasoning in Property Entitlement Disputes

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

An understanding of ownership is an important aspect of child development because it helps to promote harmonious social interactions. People are typically restricted from using objects belonging to others. Respecting others' ownership rights is necessary for socially appropriate behaviour. Because of the frequent property disputes that children engage in, it might be expected that preschoolers' appreciation for ownership is limited and that adult input is needed to teach children about ownership rights. In three experiments, I demonstrate the opposite. Preschoolers value ownership rights more strongly than do adults and support ownership rights in property entitlement disputes between a possessor and an owner. An additional two experiments demonstrate that although children strongly value ownership rights above other principles of entitlement, they show some flexibility in their reasoning about ownership rights when provided with sufficiently compelling reasons to consider disregarding these rights.

These findings show developmental differences in children's ability to determine when ownership rights should be disregarded. Older children and adults disregard ownership rights when they are provided with compelling enough reasons do so, whereas younger children often uphold owners' rights to the exclusion of all other factors. Together, these studies challenge the intuitive view that children learn about ownership from adult input. Rather than strengthening children's appreciation of ownership rights, adult input may serve to teach children about situations where it is socially appropriate to disregard ownership.

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Dedication

A journey of a thousand miles must begin with the first step—Chinese Proverb

This thesis is dedicated to my husband John Neary, who often told me that even the most difficult task can be accomplished if it is done one step at a time. He was right. For me the first step was marrying a wonderful man who believed in me. I will forever be grateful for your love and support.

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Chapter One: Introduction and Literature Review

Ownership has important consequences for everyone. First, ownership (and the rules surrounding ownership) protects our possessions. Without ownership, our household items, our cars, and even our homes could be confiscated by anyone who desired them. Second, ownership helps to determine our behaviour toward objects. It is necessary to have an understanding of ownership before deciding how to behave toward an object in various situations. Suppose Sue writes in a stranger's notebook without asking permission. This action could very easily result in a heated argument. However, suppose Sue writes in her friend Jimmy's notebook without asking permission. In this case, rather than being upset at Sue, Jimmy might actually be interested in what Sue was writing. Thus, the same behavior may be acceptable in one situation but not in another, depending on the owner of the object and the relation between the individuals involved. Third, understanding ownership is necessary for normal social functioning. Failure to recognize the intricacies of ownership inevitably results in conflicts that seriously impede an individual's ability to function socially.

Privileges Associated with Ownership

Ownership implies not only that owners have certain rights to what they own, but also that these rights are unique to the owners; they are not shared with others (Cohen, 1954; Merrill, 1998; Snare, 1972). The philosopher Frank Snare outlined three rules of ownership. First, owners have the *right of use*. In the example above, this right entitles only Jimmy to use his notebook whenever he likes because he is the owner of the notebook. Second, owners have the *right of exclusion*. This right implies that non-owners

are excluded from using the object unless they are given permission by the owner. Thus, the owner decides who can and cannot use his property. If Sue is a friend, then perhaps Jimmy would allow her to use the notebook, but he may decide to exclude non-friends. Third, owners have the *right of transfer*. This right implies that Jimmy can transfer ownership of his notebook to Sue or whoever else he wants to own it. If ownership is transferred to Sue, she will gain all of the ownership rights associated with the notebook, including the right to transfer the notebook to another person. Jimmy will no longer have any more rights associated with the notebook than any other non-owner.

Ownership Disputes in Early Childhood

Ownership and related ideas are central to children's property disputes. Object disputes are the earliest, most frequent, and most intense interpersonal conflicts among young children (Ross & Conant, 1992). On average, young children are involved in disputes with their peers more than nine times per hour and the largest percentage of toddler and preschool disputes involve the possession and use of objects (Brenner & Mueller, 1982; Hay, 1984; Shantz, 1987). Object exchange and object possession disagreements are the most frequent occurrences in shared meaning interactions (social interactions with a shared theme) among two-year-old children (Brenner & Mueller, 1982). The most frequent conflicts for 2- to 5-year-olds involve disputes over the use and possession of objects (Eisenberg & Garvey, 1981).

An understanding of ownership is therefore an important aspect of child development because it helps to promote harmonious social interactions. Suppose that Billy owns a ball. If Sally does not understand the concept of ownership, then she will not be aware that as a non-owner she has an obligation to ask Billy for permission to use his

ball. Without this understanding, Sally might take the ball without asking for permission, which will likely lead to an argument with Billy. The argument may be difficult to resolve because both children may feel that they have a right to use the ball. If Sally grasps the concept of ownership, she may still choose to take Billy's ball without asking, but she will likely be aware of her misdeed and will probably not fight as relentlessly to keep possession of the ball. Ownership is important because we want to maintain the objects that belong to us and also minimize conflict with others.

Understanding Ownership in Early Childhood

Why might young children have frequent property disputes? An intuitive answer might be because they know very little about ownership. One might assume that children find themselves in these disputes because they have no understanding of what it means to own something and what it means not to own something. As a result, they frequently violate owners' rights and become involved in recurrent property disputes.

Several studies have investigated children's understanding of what it means to own something. These studies do support the view that young children have a limited understanding of ownership and of the rights associated with ownership. A study investigating children's ability to reason about the ownership of large scale items (such as public buses and public schools), found that younger children (5- to 6-years-old) lacked a mature understanding of ownership of public property until at least 8- to 9-years-old (Cram & Ng,1994). Similarly, a study investigating children's ability to infer who owns items such as local factories, public transportation, and farmland, found that the youngest children performed poorly, often attributing ownership to the person with the closest physical contact (i.e., the worker owns the factory) (Berti, Bombi, & Lis, 1982). And

another study investigating children's reasoning about legitimate (e.g., purchasing) and illegitimate (e.g., stealing) bases of ownership found that the youngest children did not have an accurate understanding of what made someone an owner or what rights were associated with ownership (Cram & Ng, 1988). Furthermore, when children aged four years and older rated the badness of characters who refused to give an object back to its previous owner, children 4- to 6-years old failed to understand that refusing to return an object to its owner is worse if the object was acquired by theft than by gift. The findings were interpreted as showing that young children understand "own" in the same way that adults understand "on loan" (Hook, 1993).

Young children have also shown difficulty understanding when ownership can be permanently transferred. A study investigating children's knowledge of ownership transfers found that young children have problems discriminating between legitimate transfers such as gift-giving and illegitimate transfers such as stealing. The authors claimed that children do not have a mature understanding of such ownership transfers until at least age five (Blake & Harris, 2009). However, even younger children were more successful at recognizing a transfer of ownership when it occurred during highly ritualized contexts such as when ownership was being transferred by giving a wrapped gift for a birthday present (Blake & Harris, 2009; Friedman & Neary, 2008).

Despite the studies suggesting that young children do not have a mature understanding of ownership, I think that these studies underestimate children's abilities. Several of the mentioned studies involved children reasoning about ownership of large-scale items (Berti, Bombi, & Lis, 1982; Cram & Ng,1994). The difficulty children had with reasoning about ownership may have occurred because children were simply

unfamiliar with who the actual owners of these items are. Similarly, when children had difficulty reasoning about what rights were associated with ownership, they were asked to judge stories about children's interactions with a shopkeeper. The responses in this study may have underestimated children's understanding of ownership rights simply because children only have experience buying items from shopkeepers and may have had difficulty reasoning about exchanges with a shopkeeper that involved unusual situations that are unlikely to occur within a shop setting (i.e., gift-giving) (Cram & Ng, 1989).

It also seems unlikely that children have no understanding of ownership for two additional reasons. First, imagine a world in which young children know nothing of ownership. If young Bobby were given a toy car, he would be unlikely to maintain possession of it for very long. He would be unaware that he could use the car whenever he wanted, and he would not realize that he had the right to exclude others from taking it. Other children, also unaware of ownership, would attempt to use his car, and neither the owner nor the non-owner would know how to resolve any conflict that arose. It would be difficult to determine whether the first child who was given the object should be awarded the object or whether the second child should get it. Without a general understanding of ownership, children would have no concept of entitlement. To resolve this conflict using the rules of ownership, Bobby would need instruction on what it means to be the owner of an object. He would also need to learn that, as an owner, he has the right to maintain possession of his object and to exclude others from his property.

In reality, children rarely seem to need such instruction. Instead, children seem acutely aware of and possessive of what they own, such that parents often feel it necessary to intervene during property disputes, encouraging their children to share or to find

something else to play with (Ross, 1996; Ross, Telsa, Kenyon, & Lollis, 1990). One might think that teaching children to share or to find something else to play with should actually provide them with a sense that, as an owner, they do not have any rights (they do not have the right to exclude if they are always told to share the object). It seems likely, then, that young children do have some understanding about ownership and that parents do not need to instruct them on what it means to be the owner of an object.

Second, other studies have demonstrated that children reason about ownership from a young age. Very young children can determine who owns an object even if the owner is not physically in possession of an object. In fact, 2-year-olds (and even some children as young as 18 months) are able to differentiate between their own possessions and their mother's possessions when reasoning about objects with which they are personally acquainted (e.g., toothbrushes, books, and shoes) (Fasig, 2000). Two-year-olds are even able to determine who owns unfamiliar objects. One way that they do this is by assuming that the first person to possess an object is its owner. In one series of experiments (Friedman & Neary, 2008), 2-year-olds were shown scenarios where one child possesses an object and then another child immediately possesses this same object. In such scenarios, children report that the first person to possess the object is the owner. This is the same pattern of results demonstrated by adult participants in a similar study, showing that there is remarkable consistency between children's early understanding of how ownership is inferred from first possession and the heuristic that they will later use as adults (Friedman, 2008). And beginning at age three, young children judge that a person who creates an object (or creatively modifies it) is that objects owner (Kanngiesser, Gjersoe, & Hood, 2010).

Young children can also observe someone controlling permission over an object and can infer that the person exerting this type of control is likely the object's owners (Neary, Friedman, & Burnstein, 2009). Children 3- to 5-years old were shown scenarios where one character asks the other character to play with a toy. The second character either grants or denies permission to play with the object. Children as young as 3 ½ inferred that the character who is either granting or denying access to the object is likely that object's owner when the character actually controlled access to the object (i.e., the first character cannot play with it because the second character will not let them). However, children did not make this inference when the character was preventing access to the object because of some situation out of their control (i.e., the first character cannot play with it because it is dinner time right now).

Young children not only know how to infer ownership, they also seem to have some understanding of what it means to be the owner of an object. Eisenberg-Berg, Haake, Hand, and Sadalla (1979) told 2-year-olds that an item belonged either to them or to the school. Two-year-olds were more likely to stop other children from taking possession of a toy when they were told that the toy belonged to them and they could take it home, but not when they were told that the toy belonged to the school (see also Eisenberg-Berg, Haake, & Bartlett, 1981). Thus, it appears that children do understand Snare's (1972) rule of exclusion. However, there is an alternative possibility. Perhaps when children were told that they were the owners and could take the object home with them, they became more attached to the object and simply became more determined to keep the object in their possession. This determination to keep the object with them may have caused them to fight more adamantly and to be more persistent in their stance. This

may have then helped them to resist the takeover attempts from others. However, a more recent study using a third-person methodology not open to such alternative explanations, has found that children aged four and five often uphold an owners' rights, although they do so less often than adults (Kim & Kalish, 2009).

The Developmental Question

Ownership is invisible and abstract. When you look at an object you cannot see whether or not someone owns the object, you cannot see who owns the object, and you cannot see what rights and privileges are associated with owning the object. As previously mentioned, the Friedman and Neary (2008) and Neary, Friedman, and Burnstein (2009) studies provide evidence that children can make accurate inferences about the ownership of objects, suggesting that they do have a concept of ownership. But how is it that children come to learn about the rights associated with ownership? The most obvious source of ownership information is parental input. Presumably, when a child is involved in a property dispute with another child, parents intervene and teach the children how to settle the dispute by outlining the rules and expectations for the particular situation. Parents respond to children's transgressions and disputes with reasons for these rules and expectations. Given that property disputes are the most common type of conflict among young children (Ross & Conant, 1992), and because children are so emotionally invested in these disputes, it seems likely that this would be an ideal time for parents to teach children the proper rules of ownership. If children acquire their understanding of ownership directly from parental input, then children's ownership reasoning during property disputes should mirror that of their parents. However, this certainly is not always the case.

Ross (1996) compared parents' and siblings' (aged 2- and 4-years-old) principles of entitlement during property disputes. The siblings were observed during free play and details on property conflicts were recorded. Specifically, the type of conflict, the children's reasoning as to why they should get to use the object, the eventual outcome of the dispute, whether parental intervention occurred, and the parent's entitlement arguments were all recorded and analyzed.

The siblings were involved in many different types of property disputes. Most arguments centered on possession and ownership disputes. In some disputes, one child possessed an object (i.e., was holding it or playing with it) and the other child wanted it, but neither child specifically owned it. In another type of dispute, one child possessed and owned an object that another child wanted. In other disputes, a non-owner possessed a toy and wanted to continue using the toy at the same time that the owner of the object also wanted to use the toy. These types of property disputes are particularly interesting because they give insight into whether children and adults value possession or ownership more strongly when settling property disputes.

Ross's study (1996) found that adults were inconsistent in the rights that they upheld, sometimes supporting ownership rights while other times supporting possession rights. When one child owned and possessed a toy that another child wanted, parents upheld ownership rights, judging that the child who currently possessed the object should continue to have the object. However, when a child was the owner of a toy that another child possessed, parents ignored ownership rights, judging that the child who currently possessed the object should continue to have the object. For instance, if Sue owned a toy train and Bobby was in possession of the train, parents almost always sided with Bobby.

The experimenters also noted inconsistency in when parents chose to intervene in their child's property dispute; in some situations, parents would intervene, but they frequently would also choose not to intervene in the children's disputes and leave them to settle the disputes on their own.

Interestingly, when parents did intervene and instructed their children on what they should do to settle the property dispute, parents frequently contradicted ownership principles by encouraging their children (both owner and non-owner) to avoid the conflict by finding something else to play with or by sharing the disputed object. The aforementioned right of use and right of exclusion rules of ownership dictate that an owner should have the right to use his object and to exclude others from using the object. Parents instructing owners to share their objects are, in a sense, teaching their children that owners do not have these rights. Constantly hearing that they should share their objects may teach children that they have the right to use their toys only so long as no one else is interested in playing with them. It is unlikely that parents are trying to oppose ownership rights when they tell their children to share. It is more likely that they are aware that their children have strong feelings of ownership and are trying to teach their children to share so as to foster more harmonious social interactions.

Additionally, Ross (1996) found that children have more consistent rules for settling property conflicts than do adults. Children aged two and four supported claims of ownership over claims of possession during most disputes. For instance, if Sue owned a toy train and Bobby was in possession of the train, Sue's rights were upheld during a property dispute. The rights of the owner were upheld regardless of whether the owner was in possession of the toy, and regardless of whether parents intervened. Children's

support of owners' rights occurred in all types of property disputes. It is remarkable that children consistently upheld the rights of owners despite being provided with conflicting messages from parents. Thus, Ross's findings contradict the intuition that children learn how to settle property disputes through their parents.

Why is there a difference between children's and adults' reasoning during property disputes? One possibility is that children reason differently from adults because children value the owner's right to exclude so much that they are unable to see that sometimes there are situations that necessitate limiting the owner's right. Similarly, children may only be able to consider one factor at a time when making decisions; therefore, they focus only on the rights of owners and ignore all other factors relevant to the circumstance. Conceivably, adults are better able to consider multiple factors before reaching a decision. Perhaps adults do believe that the owner should have certain privileges associated with ownership, but they put more value on the other extenuating factors involved in the specific situations (factors such as who had the object first, who needs the object more, and even who will react more strongly to having the object removed). If we accept these possibilities, we may suppose that adults and children actually have similar ownership beliefs, but that they demonstrate their beliefs differently depending on the context of the situation, with adults paying more attention to context than children do.

Alternatively, both the children's and adults' reasoning may differ depending on the position that they are in at the time of making the property allocation decision. When parents were intervening in the property disputes of their children, they did not have any personal desire to obtain the object in conflict. Therefore, one might suppose that parents were able to make property allocation decisions that reflect their true beliefs about

ownership. However, parents may not be completely unbiased when making allocation decisions during property disputes that involve their children, because they may be strongly motivated to end the dispute and establish co-operation among their children. If this is the case, then when parents make their allocation decisions, they may instead focus on the easiest way to minimize and eliminate the conflict rather than considering only who owns the object.

In Ross's (1996) study, children were involved in the property disputes as first party members. The owner's rights may have been upheld, not because the parties involved in the dispute understood ownership rights. Instead, the owner's rights may have been upheld because the owner's may have been more emotionally attached to the objects than the non-owners, and because they were more attached they may have been more motivated to fight for the objects. This motivation to fight may have allowed them to be more successful in the disputes. For example, if Tom and Sue are arguing over a crayon that Tom owns, Tom may fight harder to keep his object because he is the owner. Sue may relinquish the crayon, not because she knows that the crayon belongs to Tom, but because Tom is more determined to keep the crayon and is better at fighting to maintain his possession.

To have a true understanding of how children and adults reason about ownership during property disputes, it is important to not just investigate how they would behave during actual disputes, but also to investigate how they would judge third party property disputes. Further studies should explore the difference between children's and adults' property entitlement reasoning in situations where they are not personally involved and therefore are less likely to have a vested interest in the outcome.

Understanding the Rights of Owners

In summary, from a young age, children have a general idea about who may own objects within their environment. They also use a number of cues to determine who the owner of the object is (e.g., first possession and control of permission) if they do not initially know who the owner is. In addition, children appear to have some idea about what it means to own an object and tend to value the rights associated with ownership. However, this needs to be further explored in studies that remove children's own interests.

Ownership Bias

An additional interpretation that can be made from the results of the Eisenberg-Berg et al. (1979, 1981) and Ross (1996) studies is that children value the rights of owners so strongly that they are unable to consider any other factor when making allocation decisions during property disputes. This strong belief in owner's rights may cause children to evaluate a property dispute with an "ownership bias". That is, children are biased to uphold and defend owners' rights to exclude and to use, and hence largely discount other factors. Such an ownership bias could be acquired very early in children's development and could be activated whenever children need to make a decision involving ownership. It may be only during subsequent development that children become more flexible in their reasoning and come to appreciate all of the situational factors that need to be considered before making a decision.

Chapter Two: Thesis Rationale

A great deal of what children learn stems from the teaching of their parents. Parents instruct their children on the names of different items (Gleason, 2005, pg 47-54), on how to behave socially (no hitting, no pulling hair, be nice to others) (Smetana, 1999), on how to colour, to complete a puzzle, to brush their teeth, and to use the bathroom, among a myriad of other situations. In all of these, parents teach their children through instruction and the children's behaviour matches parental expectations. For instance, parents may instruct their children that it is wrong to pull another child's hair, and (most of the time) children's behaviour demonstrates that they have accepted parental instruction and are behaving in accordance with their parent's expectations. However, in a key domain of social life, there appears to be an exception to this type of learning—gaining understanding of the concept of ownership.

It is my belief that parents do not directly teach their children much about ownership. I suspect that parents rarely tell their children why someone is an owner of an object or how that person acquired ownership, yet children are able make inferences about ownership from a young age. Similarly, parents do not spend time teaching their children about what it means to be an owner. For instance, parents do not teach their children that owners have the right to exclude others from property, yet children seem to have an early understanding of ownership rights nonetheless.

One area where parents do occasionally provide some information about ownership, even if only indirectly, is in property disputes (Dunn & Munn, 1987; Ross, 1996). When two children argue over a toy, parents occasionally intervene to settle the dispute. It might seem plausible, then, that children learn about ownership by attending to

the explanations that parents provide when settling disputes. However, during such interventions, parents infrequently discuss the ownership rules relevant to the specific property dispute. Instead, they often settle the dispute without any justification for their decision (Ross, 1996). Parents are more likely to say "Give the ball to Tommy" rather than, "Give the ball to Tommy because he received it as a gift from Grandma and so it belongs to him. As the owner, Tommy is allowed to play with the ball whenever he likes."

It is possible that children do not learn from what parents say, but instead abstract the rules of ownership from observations of how the parents' judge property disputes. Children may notice that parents typically favour owners by awarding them the object in dispute. Thus, children may learn that owners have a special privilege and they will subsequently uphold the owner's rights in future disputes, even in the absence of any parental intervention. However appealing this analysis is, it appears doubtful. As previously mentioned, during property disputes, personal observations and other studies (Ross, 1996) reveal many inconsistencies in adults who interact with children in schools, daycare settings, and home environments. Often adults will attempt to resolve the conflicts quickly without ever considering who the owners of the objects are (Ross, 1996). This may result in the adults awarding temporary possession of an object to the child who would most strongly object to having the object removed, rather than to the actual owner. For example, if Tommy and Sarah are arguing over who gets to use a ball, a parent may decide who should get the ball based on the two children's temperaments, with no consideration for ownership. Since Tommy is easygoing and more likely to move on and play with something else if he loses possession of the object, a parent may decide to award

the ball to Sarah, who is considerably more likely to be upset by not getting the ball, because this will allow for a quicker resolution of the dispute.

The lack of ownership-related instruction and the inconsistent use of rationales to support the rules associated with ownership, cannot provide children with a strong sense of how they should behave during property disputes. Imagine if parents instructed children to eat their spaghetti with a fork half of the time and to use their hands the other half of the time. Children would certainly have difficulty learning that they should actually use a fork to eat spaghetti and that it would be impolite to use their hands. Yet; despite similar inconsistencies in parents' ownership instructions children still uphold ownership rights.

The only consistent instruction that children receive related to ownership is that it is important to share (Ross, 1996). If children mainly learned about ownership from parental input, they would believe that, as owners, they have the right to play with their objects only if no other children are interested in playing. Children would also believe that owners are obligated to share everything they own and non-owners have the right to play with any object they see because owners have an obligation to share. Yet this clearly is not what the children believe, nor is it what they expect when they come across an object. Therefore, it is unlikely that children gain their main sense of understanding about ownership from parental input. Instead, they must have some other source(s) for their knowledge about ownership.

The hypothesis that motivates this dissertation is that there is something distinctive about ownership that enables children to understand its key concepts, despite a lack of instruction and/or inconsistent instructions. According to this nativist view, children are equipped with a very early concept of ownership. This ownership concept allows children

to make intuitive inferences about ownership. For example, children can recognize (even without any explicit instruction) who the owner of an object is, and may have intuitions about what rights and privileges should be associated with owning an object. For instance, if Tommy observes Sarah kicking a ball at the park and then walking away from it, Tommy will instantly believe that Sarah is the owner. Furthermore, Tommy will believe that, even though no one is currently playing with the ball, he should not begin playing with it unless he asks for permission. However, if a child encounters an object that is unlikely to have an owner, then the child will feel free to interact with the object. For example, if Tommy observes Sarah kicking a pinecone at the park and then walking away from it, Tommy will not assume that Sarah is the owner and will most likely not ask her for permission to play with it.

While in both situations, Tommy sees an unattended object that he is interested in interacting with, he is sensitive to the differences between the two scenarios. Tommy is able to differentiate between when he needs to ask permission and when he is free to interact with the object; he effortlessly activates the owner concept in one situation, but not in the other. This ability to differentiate is remarkable considering that Tommy is unlikely to have received parental input regarding discriminating between these types of situations. The claim is not that children have an innate understanding of which objects are owned versus which objects are un-owned. Rather, once children come into contact with an object that could be owned, they are quickly able to determine who the owner is and have intuitions about which rights and privileges go along with ownership.

The viewpoint that an ownership concept could be innate does not imply that children are able to understand the ownership concept at birth. Similarly, the claim that

growing teeth is innate does not mean that children are born with teeth. Rather, children are predisposed to having teeth, but still need a minimal level of nutrition and must reach a certain chronological age before the growing of a full set of teeth is triggered. Likewise, children are not born instantly understanding ownership, but instead need to interact with objects and with other individuals in relation to these objects before they are able to act upon their initial concepts of ownership. If children were to grow up without objects, it is unlikely that the concept of ownership would be triggered. Furthermore, if somehow the concept of ownership were triggered (i.e., children recognized that they were the owner of the object), they would have little use for an understanding of the rights of ownership, such as the right to exclude, because they would never came across anyone who might attempt to acquire the object.

When considering this account, it is important to note that needing experience to *trigger* the ownership concept is not the same as needing experience to *learn* the ownership concept. The former implies that the concept of ownership is already present, but that a certain amount of experience is needed to activate this understanding. This is similar to the need for a certain level of nutrition and development is to trigger the growth of teeth. The latter implies that the concept of ownership is not present and that experience is needed to acquire the concept of ownership.

The viewpoint that an ownership concept may be innate does not preclude any type of ownership learning from occurring. Children could have an innate concept of ownership, which allows them to learn about ownership-related concepts with little direct teaching. For instance, children may not need to be taught that objects (and perhaps even non-objects such as ideas or songs) can be owned, but might need to be taught the specific

ways in which ownership is legitimately acquired (purchase, trade, or gift exchange) or transferred within their culture. Similarly, children might not have to be taught the rights and privileges of ownership, but might require instruction on when to disregard these rights. For example, children might feel that they should be allowed to wear a shirt that belongs to them whenever they like. They may need to be taught that since they have outgrown the shirt, they should transfer ownership of the shirt (and the rights to wear the shirt whenever he likes) to a little brother.

This view of ownership yields the following developmental theory: children have an innate concept of ownership and strong intuitions about which rights should go along with ownership. Initially, children strongly uphold owners' rights (ownership bias) and are expected to prioritize ownership above all or most other factors when deciding who is entitled to an object involved in a property dispute. During development, children learn when it would be appropriate and expected to override their rigid beliefs. Specifically, children learn when they should be taking into account information other than ownership. Thus, children do not have to be taught the concept of ownership or the value of ownership; instead, they simply need to learn the specific situations when they must consider additional information, placing ownership in context. Adults involved in a child's life (parents, teachers, and babysitters) do not directly teach children an ownership concept, but instead teach them how to be flexible in their developing intuitions about ownership.

A learning theorist may propose that ownership is very salient for children and that little experience is needed for learning to occur. Perhaps children only need to be instructed that something belongs to them a few times before they learn to have a strong

ownership bias. However, it would be difficult to explain how young children could learn to have an ownership bias if parents are not providing them with direct instruction. If ownership is gradually learned from experience, why do children as young as 3-years-old already have a strong ownership bias? It would also be difficult to explain how young children could come to learn about the rights associated with ownership if they did not already have a concept of "own" in the first place. For instance, if a parent intervened in a property dispute between Billy and Susie by telling Susie to give the toy back to Billy because he is the owner, it would be difficult to see what this would mean to either child involved in the dispute if they did not already have a concept of own. If they lacked this concept then they may come to learn that when an authority figure asks you to give a toy to another child you should comply, but it is unlikely that either would come to learn that a person has rights associated with a toy simply because he is the owner. Moreover, learning about ownership would be very difficult because ownership is invisible and abstract. When you look at an object you cannot see if the object has an owner, who the owner may be, or which rights and privileges are associated with owning the object. Therefore, it is difficult to see how children could come to understand ownership, much less come to value ownership rights. Furthermore, the progression of children's ownership concept does not follow the development trend one would expect if ownership was learned. If children learn the concept of ownership, then you would expect that the concept would be lacking early in development and that children would acquire it later on, perhaps by learning from their parents. You would not expect young children to strongly *value* ownership and the rights associated with it.

It would be impossible to prove the innateness theory in one set of studies (or even hundreds of studies). Instead, this dissertation will test the hypothesis that children do not simply mirror adult input regarding ownership, but instead have an early ownership bias. If children do have an ownership bias, then this suggests that children not only have a sense of what ownership is, but that they also value the rights associated with ownership. If adults/parents do not explicitly demonstrate that they themselves value ownership rights over other principles of entitlement, then it would be difficult to explain how children could come to value ownership rights so early in development. I would argue that this early bias would follow more naturally from a nativist viewpoint than from a learning viewpoint.

Understanding ownership has two parts: the concept *owner* and the *rights* that come with being an owner. My thesis will not specifically address children's knowledge of *owner*. Instead, my thesis will investigate children's knowledge of ownership rights. This thesis presents five experiments examining how children and adults reason about ownership rights during property allocation disputes. Taken together, the results allow us to determine whether children share adults' intuitions about ownership rights or whether they have their own way of reasoning.

In previous studies, parents and children have demonstrated their understanding of ownership rights in situations in which they had a vested interest. This may have influenced the results of those studies as the children and parents seemed to have different goals in the dispute. In the following studies, I assessed children's understanding of ownership rights by removing any self-interest. I also explored adults' intuitions regarding ownership during property allocation disputes that they or their children were not involved

in. To do this I used third person methodology to assess whether preschoolers and adults differ in their reasoning following the observation of property allocation disputes. If there is a mismatch between children's and adults' resolutions of the property allocation disputes, then adult input may not include information about the rights of owners.

In the first experiment, I attempted to determine whether children or adults demonstrate an ownership bias, siding with the owner of the object despite there being a valid reason for a non-owner to be given temporary possession of an object. This type of dispute is familiar to children; they occasionally witness and perhaps take part in such situations themselves.

In the second experiment, I investigated children's and adults' reasoning about ownership during another type of property dispute. Would children continue to have an ownership bias when they knew that the owner did not have any valid reason for requesting the object in dispute? Arguably, the most socially acceptable/fairest way of resolving a dispute of this kind would be to allow the current possessor to continue using the object because the owner does not have a need for the object. If children continue to side with the owner, then this would demonstrate not only that children have a strong ownership bias, but also that they uphold an owner's right to exclude. Children should have no reason to side with the owner during this type of dispute unless they strongly value an owner's right to exclude (even in the absence of a good reason for the exclusion).

In the third experiment, I investigated children's and adults' reasoning about ownership rights during disputes between two adult characters over the use of objects that would be considered more valuable (i.e., both in monetary worth and also in importance) than the objects that were the focus of the disputes in the Experiment 1 and 2. I was

interested in determining whether children and adults reason about ownership rights during property allocation disputes with adult characters similarly or differently than they do during property allocation disputes between children.

In the fourth and fifth experiments, I investigated children's and adults' reasoning about ownership rights during situations that warrant the violation of owners' rights. Specifically, I investigated whether children can override the ownership bias when a non-owner needs to use an owner's property to prevent harm from occurring (Experiment 4) or when an owner intends to misuse his property to cause harm (Experiment 5). Determining whether children will override the ownership bias in this type of circumstance will help to determine whether this bias is inflexible, or whether children are able to override the bias when provided with strong enough reasons to do so.

My thesis explores the difference between children's and adults' property entitlement reasoning in situations where they are not personally involved and therefore should not have a vested interest in the outcome. There are four main questions that I hope to answer with this research. First, do children and adults differ in their intuitions about ownership issues during property disputes? Second, do children have an ownership bias? Specifically, do children tend to side with the owner during property disputes despite there being compelling reasons for the non-owner to be given temporary possession? Third, assuming that an ownership bias exists, how strong is it and are there some situations where children can disregard it? Fourth, do children understand the right of exclusion and if so do they appear to value this right more than adults? The answers to these questions will inform us about how children reason about something that is abstract and invisible.

Chapter Three: Experiment 1

In the first experiment, I investigated whether children and adults reason similarly about ownership during property disputes. Within each age group, half the participants received tasks in which two characters each wanted to use the same object. One character possessed the object and had a reason for continuing to use the object and the other character wanted the object (wanter) and was the owner of the object. If children have an ownership bias, they should disregard the need that the current possessor had for the object and instead side with the owner (wanter). However, children could have sided with the owner for other reasons that do not involve an ownership bias. First, young children might not have been able to consider a character's need when making allocation decisions during property disputes. Second, children might not have been able to consider more than one factor when making allocation decisions. To rule out these possibilities, half of the participants in each age group received a non-ownership condition that was identical to the ownership condition, except that neither character owned the object. One character needed the object (and possessed it during the dispute) and the other character wanted to use the object, but did not need it (and did not own it).

If children have an ownership bias, than one should expect that in the ownership condition children would disregard the non-owner's reason for needing the object, and instead uphold the rights of the owner. However, if there was no owner involved in the dispute (non-ownership condition), and children are able to consider the importance of current possession and need, then children should side with the character that currently possessed the object and needed it to complete a task.

Based on the results from Ross's (1996) findings, I expected that the adults would not support owners over non-owners, but would instead support the character that currently possessed the object and needed the object to finish a card. I expected them to reason this way regardless of who the owner of the object was.

Method

Subjects. Fifty-six children were tested: 16 3-year-olds (age range = from 3 years 0 months to 3 years 10 months; *M* = 3 years 6 months; 8 girls and 8 boys), 18 4-year-olds (age range = from 4 years 0 months to 4 years 11 months; *M* = 4 years 5 months; 10 girls and 8 boys) and 22 5-year-olds (age range = from 5 years 0 months to 5 years 10 months; *M* = 5 years 3 months; 13 girls and 9 boys). In this experiment and all subsequent children were recruited from and tested at their daycares, preschools, and elementary schools. Most were white and from middle-class families, though demographic information was not formally collected. Nine additional 3-year-olds were seen, but failed to answer the memory questions correctly in the non-ownership condition. As a result, all remaining 3-year-olds were tested in the ownership condition only (described further in the Results section). In addition, three 3-year-olds in the ownership condition, three 4-year-olds in each of the ownership and non-ownership conditions, and two 5-year-olds in the non-ownership condition also failed to answer the memory questions correctly and were excluded from further analysis.

Forty-four adults were tested (age range = from 18 years to 25 years, *M* = 20 years; (21 females and 23 males). Adults were recruited and tested at a University of Waterloo campus student center. Also, different children and different adults participated in each experiment.

Materials and procedure. Children were given a screening task to ensure that they had the basic language ability and skill necessary to understand and participate in the task. The screening task was presented on an 8 ½ x 11 page. The page had a picture of an animal in each corner (rabbit, snake, horse, and monkey). Children were asked to point to each animal (for example, "Can you point to the monkey?"). To pass the screening task, children were required to point to three out of four animals correctly. No children failed the screening task in this experiment or any of the following experiments.

Immediately following the screening task, children watched two stories enacted on a foam board stage using small replicas of children and toys; different replicas were used for each story. In each story, a boy and a girl character were positioned a few inches apart facing the participant. An object (a crayon in story 1, scissors in story 2) was placed directly beside one of the characters (i.e., the character who was described in the stories as the current possessor). Participants were randomly assigned to either the ownership condition or the non-ownership condition.

In the ownership condition, the two characters were at school. Character A was using the object, but character B wanted to use the object and was its owner. A sample story from this condition is presented below:

> This is a story about these two kids at school. This one is a boy and this one is a girl. And what is this? It is a__(crayon). The crayon belongs to the girl; it's the girl's crayon. *Pre memory question*: *Whose crayon is it? (girl)*. Well, the boy is using the crayon to make a birthday card for his mom. He needs the crayon to finish the card. The girl wants to use the crayon. I have some questions for you.

The non-ownership condition was nearly identical except I said that the school owns the object.

The sample story from this condition is presented below:

> This is a story about these two kids at school. This one is a boy and this one is a girl and what is this? It is a __(crayon). The crayon belongs to the school; it's the school's crayon. *Pre-memory question: Whose crayon is it? (school).* Well, the girl is using the crayon to make a birthday card for her mom. She needs the crayon to finish the card. The boy wants to use the crayon. I have some questions for you.

Immediately following the stories, children were asked two questions (always in the same order)—a test question and a post memory question. The pre- and post-memory questions were asked to ensure that the participants followed the story.

1) Test question. Who should get to use the crayon?

2) Post-memory question. Whose crayon is it?

Adults were given the same two stories as the children with slight modifications. Adults were given cartoon depictions of the main task (see Appendix A for an example) displayed on a computer using PowerPoint and they were not asked the pre-memory question. The stories were narrated by the experimenter just as they were for the children. Adults were randomly assigned into the ownership or non-ownership conditions.

Within each condition and age group, two factors were fully counterbalanced between subjects: (1) whether boy characters were on the right and girl characters were on the left in both stories, or the reverse; (2) whether the child with the need for the object was a boy in the first story and a girl in the second, or the reverse.

Results

Participants were scored 0 for choosing the current user of the object and 1 for choosing the other character who wanted the object. Therefore, for the two scenarios, participants could obtain a maximum score of 2 points 1 point on each. A 2 (condition: ownership, control) X 3 (age: four, five, adult) ANOVA revealed a main effect of condition, $F(1, 78) = 46.73$, $p < .01$, a main effect of age, $F(2, 78) = 12.40$, $p < .01$, and a interaction between condition and age, $F(2, 78) = 4.71$, $p < .01$. I was interested in determining whether children at both ages would reason similarly to each other but differently from adults. Therefore, I conducted an additional 2 (condition: ownership, control) X 2 (age: four, five) ANOVA. There was a main effect of condition, $F(1, 36) = 33.10$, $p < .01$, but no main effect of age, $F(1, 36) = .43$, $p = .52$, and no interaction between condition and age, $F(1,36) = 0.01$, $p = .94$). As a result, findings from the 4-and 5-year-olds were combined for further analysis, and they are henceforth referred to collectively as "children".

A 2 (condition: ownership, control) X 2 (age: children, adult) ANOVA revealed a main effect of condition, $F(1, 80) = 40.29$, $p < .01$, a main effect of age, $F(1, 80) = 24.69$, $p < .01$, and a interaction between condition and age, $F(1, 80) = 9.45$, $p < .01$. As can be seen in Figure1, the main effect was due to the fact that participants at both ages were more likely to choose the wanter when this character was the owner (ownership condition) than when this character was not the owner (non-ownership condition) (children: $t(38) = 5.87$, $p < .01$; adults: $t(42) = 2.66$, $p = .01$). However, as shown by the age x condition interaction, this difference was greater for children than for adults. One-sample t-test showed that the interaction was due to the fact that while children and adults

systematically judged that the wanter should not be given the object when it was owned by the school (children: t (18) = 5.71, $p < .01$; adults: t test could not be run because variance was 0), children were the only ones (children 79%, adults 23%) who systematically judged that the wanter should be given the object when he/she was its owner (children: $t(20) = 3.23$, $p < .01$; adults: $t(21) = 3.20$, $p < .01$).

As noted in the participants section, 3-year-olds had difficulty with the non-ownership condition. In this condition, children were told that the school owned the crayon. After nine 3-year-olds had been tested, it was observed that they had difficulty with the pre- and post-memory questions ("Whose crayon is it?") in the non-ownership condition. Ninety percent of the 3-year-olds attributed ownership to the character currently possessing the object rather than attributing ownership to the school. However, most children in the ownership condition successfully answered this question. Presumably, 3-year-olds had difficulty in assigning ownership to an institution and were more successful at attributing ownership to a specific person. As a result, all remaining 3-year-olds were tested in the ownership condition only and were therefore excluded from the above analysis due to the absence of the non-ownership condition.

An additional analysis (one-way ANOVA) tested whether 3-year-olds would differ from the 4- and 5-year-olds in the ownership condition. When the wanter was the owner (ownership condition), 3-year-olds did not differ from 4- and 5-year olds ($F(2, 37) = 0.37$, $p = .69$) and most (69%) tended to judge that the wanter should have the object in dispute ($t(15) = 1.86$, $p = .08$).

Discussion

This study examined two principles of entitlement: current possession and ownership. I sought to determine whether reasoning about these principles of entitlement

would vary with age or would depend upon the specific details of the dispute. I found that children and adults do differ reliably in their reasoning about ownership during this type of property entitlement dispute.

Adults sided with the character that was using the crayon over the character that owned it, regardless of whether the character that wanted to use the object was its owner. This finding suggests that adults value possession rights over other factors such as a characters' desire for an object or an owner's right to use his object. In contrast, children varied their responses depending upon the specific details of the dispute. If there was no owner involved in the dispute, they reasoned like adults and sided with the character that currently possessed the object. However, if the owner was involved in the dispute (as the wanter who did not currently possess the object) children overwhelmingly sided against the possessor and instead sided with the wanter. This finding suggests that children have an ownership bias. That is, children appear to value the rights of an owner so strongly that they side with the owner during property disputes despite there being compelling reasons for the non-owner to be given temporary possession.

It should be noted that adults were not completely unaffected by the presence of the owner. Although adults were more likely to support the rights of the possessor in both the ownership and non-ownership condition, they sided with the wanter more often in the ownership condition than in the non-ownership condition. This finding is important because it demonstrates that both children and adults are influenced by the presence of an owner in their decision making. However, adults appear to value the other factors, such as the character's need for the object, more strongly than the owner's rights, whereas children appear to value the rights of the owner above all other factors.

It could be argued that children did not make their decision purely on the basis of ownership, but in fact considered ownership along with additional factors. For instance, there is a possibility that children sided with the owner because they felt that the owner must have a good reason for asking for the crayon back (even though no such reason was provided) and in light of the fact that he was both the owner and had a need for the object, children may have felt that this character was more deserving of the object. I conducted a second experiment to rule out this possibility.

In the next experiment, I investigated whether children would continue to demonstrate an ownership bias when presented with a story in which it was made clearer that the owner did not have any good reason to want the object. I also examined children across a broader range of ages (4- to 7-years-old) to determine what the range of development the ownership bias applies to. I was especially interested in determining if school age children would have an ownership bias or if they would reason more similarly to adults. In Experiment 1, 3-year-olds had difficulty attributing ownership to the school in the non-ownership condition. Therefore, in Experiment 2, I added a third character, a teacher, and in the non-ownership condition children were told that the teacher was the owner of the object.

Chapter Four: Experiment 2A

Children again watched scenarios where two characters each wanted to use the same object. One character possessed the object, and had reason for using it. The other character owned the object, and although he had no reason for requesting the object, he objected to the first character's use of the object. In this scenario, children might be less willing to side with the owner because the owner does not currently need or want to use the object. If children continued to side with the owner, this would then suggest that children value the rights of owners so strongly that they are biased toward only considering the owner's point of view. This would provide further evidence that children strongly value owners' rights—the ownership bias. It is also possible that children may feel that owners have the right to their property in all instances, even when they have no reason to use the object—ownership is 10/10 of the law. Because of their belief in owners' rights, children will not or cannot consider any other factors that may give a non-owner the right to the property.

If children have an ownership bias relative to adults, than one would again expect that in the ownership condition children would disregard the non-owner's reason for needing the object, and instead would uphold the rights of the owner. While adults would be expected to instead prioritize the non-owner's need for the object over the owner's right to his object, and side with the possessor.

An alternative explanation for why children may once again side with the owner during this experiment could be that children are incapable of considering lack of need when making allocation decisions during ownership disputes. To rule out this possibility, the remaining participants in each age group received a non-ownership condition in which

one character possessed the object and had a need for continued use and the other character objected, but did not appear to have a reason for wanting it. Since there was no owner involved in the dispute in this condition, one would expect that children and adults would both side with the character that currently possessed the object and needed it to complete a task.

Method

Subjects. One hundred and nine children were tested: 29 4-year-olds (age range = from 4 years 0 months to 4 years 11 months; *M* = 4 years 5 months; 17 girls and 12 boys), 26 5-year-olds (age range = from 5 years 0 months to 5 years 10 months; *M* = 5 years 5 months; 17 girls and 9 boys), 27 6-year-olds (age range = from 6 years 0 months to 6 years 11 months; *M* = 6 years 5 months; 14 girls and 13 boys), and 27 7-year-olds (age range = from 7 years 0 months to 7 years 11 months; *M* = 7 years 5 months; 18 girls and 9 boys). One 4-year-old in the ownership condition and two 5-year-olds (one in each condition) were eliminated due to shyness (failure to respond to questions).

Forty adults were tested (age range = from 17 years to 27 years, *M* = 20 years; 21 females and 18 males). Adults were recruited and tested at a University of Waterloo campus student centre.

Materials and procedure. Children were given the same screening task as in Experiment 1. Immediately following the screening task, children watched two stories enacted on a foam board stage using small replicas of children and toys; different replicas were used for each story. In each story, a boy and a girl character were positioned a few inches apart facing the participant. A third character, the teacher, was positioned in the back right hand side of the stage. A toy object (a crayon in story 1, scissors in story 2) was

placed directly beside one of the characters (the character who was described in the stories as the current possessor). Participants were randomly assigned to either the ownership condition or the non-ownership condition. In this experiment participants were asked two test questions (rather than one) to rule out the possibility of a yes/no bias. Participants were asked: "Would it be ok for the girl/boy to keep using the crayon? And "Should he/she stop using the crayon?". If children responded with a yes bias or a no bias then their answers would contradict themselves (i.e., answering no to the first question would support the owner, while answering no to the second question would support the possessor).[1]

In the ownership condition, the two characters were at school. One character was using the object, but the other character (the owner) wanted him to stop using the object immediately. Here is a sample story from this condition:

> This is a story about these two kids at school. This one is a boy and this one is a girl. And this is their teacher. And what is this? It is a__(crayon): Well, the crayon belongs to the girl. It is the girl's crayon. *Pre-memory question*: *Whose crayon is it? (girl)* Well, the boy is using the crayon to make a birthday card for his mom. He needs the crayon to finish the card. The girl wants him to stop using the crayon. She wants him to stop using it right now. I have some questions for you.

The non-ownership condition was nearly identical except that the teacher owned the object. The sample story from this condition is presented below:

This is a story about these two kids at school. This one is a boy and this one is a girl and this is their teacher. And what is this? It is a __(crayon). The crayon belongs to the teacher. She lets everyone in the class use it. *Pre- memory question*: *Whose crayon is it? (teacher).* Well, the girl is using the crayon to make a birthday card for her mom. She needs the crayon to finish the card. The boy wants her to stop using the crayon. He wants her to stop using it right now. I have some questions for you.

Immediately following the stories, children were asked three question (always in the same order).

1) Test question one. Would it be ok for the girl/boy to keep using the crayon?

2) Test question two. Should he/she stop using the crayon?

3) *Post-memory question.* Whose crayon is it?

Adults were given the same stories as the children with the same modifications mentioned in Experiment 1. Adults were randomly assigned to the ownership or non-ownership conditions.

Within each condition and age group, two factors were fully counterbalanced between subjects: (1) whether boy characters were on the right and girl characters were on the left in both stories, or the reverse; (2) whether the child with the need for the object was a boy in the first story and a girl in the second, or the reverse.

Results

Participants were scored 0 for siding with the current user of the object and 1 point for siding with the character who wanted the user to stop using the object. Participants

could obtain a maximum score of 4 points (2 points per story as each story had two questions). A 2 (condition: ownership, control) X 5 (age: four, five, six, seven, adult) ANOVA revealed a main effect of condition, $F(1,138) = 142.50$, $p < .01$, a main effect of age, $F(4,138) = 8.97$, $p < .01$, and a interaction between condition and age, $F(4, 138) = 3.01$, $p = .02$. I was interested in determining whether children at all ages would reason similarly to each other but different from adults. Therefore, I conducted an additional 2 (condition: ownership, control) X 4 (age: four, five, six, seven) ANOVA. There was a effect of condition, $F(1, 101) = 128.85$, $p < .01$, but no main effect of age, $F(3, 101) = .74$, $p = .52$, and no interaction between condition and age, $F(3, 101) = 2.00$, $p = .12$. As a result, findings from the 4- to 7-year-olds were combined for further analysis, and they are henceforth referred to as "children".

A 2 (condition: ownership, control) X 2 (age: children, adult) ANOVA revealed a main effect of condition, $F(1, 144) = 82.06$, $p < .01$, a main effect of age, $F(1, 144) = 32.74$, $p < .01$, and a interaction between condition and age, $F(1, 144) = 6.09$, $p < .01$. As can be seen in Figure 2, The main effect was due to the fact that children and adults were more likely to choose the wanter when this character was the owner (ownership condition) than when this character was not the owner (non-ownership condition) (children: $t(107) = 11.23$, $p < .01$; adults: $t(37) = 3.84$, $p < .01$). However, as shown by the age x condition interaction, this preference was greater for children, than for adults. One-sample t-test showed that the interaction was due to the fact that while children and adults systematically judged that the wanter should not be given the object when it was owned by the teacher (children: $t(53) = 7.52$, $p < .01$; adults: t test could not be run because variance was 0), children were the only ones (children 84%), who systematically judged

that the wanter should be given the object when he/she was its owner (children: $t(54) = 8.38$, $p < .01$; adults: $t(19) = 1.31$, $p = .20$).

Discussion

In this experiment, I sought to determine whether children would continue to uphold the owner's rights even when the owner expressed no desire to actually use the object. I also examined children across a broader range of ages to determine whether school-aged children would show an ownership bias or whether by that age they would reason similarly to adults.

Adults once again sided with the character that was currently using the object over the character that wanted to use the object, regardless of whether the character that wanted the object was the owner. Once again, this demonstrates that adults value other factors, such as the character's need for the object, more strongly than the owner's right to his object. In contrast, children across a wide range of ages were more strongly influenced by who owned the object than they were with why the non-owner wanted to use the object. Thus, when the owner was involved in the dispute (as the wanter), children disregarded the fact that the owner did not have a compelling reason for wanting his object, and instead upheld the owner's right to use his object. However, if the owner was not involved in the dispute, then children reasoned like adults and sided with the character that currently possessed the object.

This replicates the ownership bias found in preschoolers in Experiment 1, and demonstrates that school-aged children also appear to have an ownership bias. Pre-school and school-aged children value the rights of owners so strongly that they are biased toward only considering the owner's point of view while disregarding persuasive reasons

for the non-owner to be given temporary possession. It is surprising that school-age children continue to support the rights of owners' despite the additional years of experience they would have received from adults instructing them that the most socially acceptable thing to do would be to share the object with someone that had a need for temporary possession. The finding that school-age children also have an ownership bias contradicts the intuitive view that children's understanding of ownership rights is strongly influenced by parental input.

The results of this experiment demonstrate not only that children have a strong ownership bias, but also that they uphold an owner's right to exclude. Presumably, children would have no reason to side with the owner during this type of dispute unless they strongly valued the owner's right to exclude (even in the absence of a good reason for the exclusion).

In this experiment, participants were asked two test questions: "Would it be ok for the boy to keep using the crayon?" and "Should she/he stop using the crayon?" In piloting, I found that 3-year-olds had difficulty understanding one of the test questions asked ("Would it be ok for the boy to keep using the crayon?"). As a result, only 4- to 7-year-olds were tested. However, I was interested in determining whether 3-year-olds would reason similarly to the older children (and differently from adults). Therefore, an additional experiment (Experiment 2B) tested whether 3-year-olds would perform similarly to the older children and continue (as in Experiment 1) to judge that the wanter should have the object in the dispute when this character was also the owner. Experiment 2B also sought to determine whether 3-year-olds would reason similarly to all age groups

and judge that the user should have the object when there is no owner involved in the dispute (non-ownership condition).

Chapter Five: Experiment 2B

Method

Subjects. Twenty-eight 3-year-olds (age range = from 3 years 0 months to 3 years 11 months; *M* = 3 years 5 months; 15 girls and 13 boys) were tested. An additional child was eliminated from analysis due to shyness (failure to respond to questions).

Materials and procedure. The materials and procedure for Experiment 2B were identical to those of Experiment 2A with one modification: Children were only given the second test question ("Should she stop using the crayon?").

Results

Participants were scored 0 for siding with the current user of the object and 1 point for siding with the other character who wanted the object. Participants could obtain a maximum score of 2 points.

An initial analysis tested whether 3-year-olds differed in score across conditions. As can be seen in Figure 3, three-year-olds were more likely to choose the wanter when this character was the owner (ownership condition) than when this character was not the owner (non-ownership condition) ($t(26) = 5.20$, $p < .01$). Further analyses against a chance score of 1 revealed that 3-year-olds in the ownership condition sided with the wanter (93%) far more often than chance ($t(13) = 6.00$, $p < .01$). In the non-ownership condition, when ownership was not attributed to one of the characters involved in the dispute, 3-year-olds were less likely than chance to side with the wanter (29 %)($t(13) = 2.12$, $p = .05$).

Discussion

In Experiment 2B, I sought to determine whether 3-year-olds would have an ownership bias when judging property disputes placing possession rights against ownership rights, and whether they would reason differently about these principles of entitlement when the specific details of the dispute changed. Specifically, I sought to determine whether 3-year-olds would value ownership as strongly as the older children when judging property entitlement disputes.

Three-year-olds, in Experiment 2B, like 4- to 7-year-olds in Experiment 2A, varied their judgments depending upon the details of the property dispute. If there was no owner involved in the dispute, 3-year-olds reasoned like the older children and the adults, siding with the character that currently possessed the object. However, if the owner was involved in the dispute (as the wanter who did not currently possess the object) children overwhelmingly sided against the possessor and instead sided with the wanter. This replicates the findings from Experiment 1 and once again suggests that 3-year-olds have an ownership bias.

Together, these studies (Experiments 1, 2A and 2B) suggest developmental changes in reasoning about ownership: Pre-scholars and school-aged children alike strongly value an owner's rights and are biased to uphold these rights to the exclusion of all other factors (ownership bias) and will even continue to support owner's rights despite presumably having experienced many years of parental input suggesting that an owner should share their property. However, adults do not appear to value ownership as much as children and are therefore able to minimize the influence of ownership when provided with reasons to do so.

Chapter Six: Experiment 3

The previous experiments demonstrated that children and adults differ in their reasoning about ownership. Children valued ownership rights, such as the right of exclusion and the right of use, much more strongly than adults did. However, in the previous experiments, the adults were judging property disputes between two child characters. These characters were in disputes over objects that had little monetary value for adults. As a result, adults may not have considered the owners' rights as much as they would during adult property disputes between adult characters over more valuable objects.

To examine this, participants were shown property disputes between two adult characters, and in which the objects were of greater monetary value. Reasoning about ownership rights during the types of property disputes that adults might find themselves involved in, could provide us with a more accurate understanding of adults' ownership reasoning. If adults do value ownership rights, but only during adult-related scenarios, then they should now side with the owner over the current possessor. However, if adults generally value other principles of entitlement, like current possession and need, over the rights of owners, then they should continue to side with the character that currently possesses the object.

I expected the results of this study to closely resemble those of the previous studies. Because of children's tendency to uphold owners' rights and inability to consider other factors involved in the disputes, I did not expect the value of the object or the age of the characters involved in the dispute to change the types of judgments that children or adults make. Therefore, I expected children to continue to strongly value ownership above current possession and need and therefore to side with the owner. In contrast, I expected

that the adults would once again prioritize the non-owners need for the object in dispute, and judge that the possessor should get the object. Thus, I predicted that children and adults would continue to differ in how strongly they valued the owner's rights. I was also interested in determining whether the adults' reasoning depended upon the monetary value of the object. Therefore, participants were presented with objects that varied in their monetary value. In story one participants were asked to judge disputes involving a shovel and in story two they were asked to judge disputes involving a cell phone (higher monetary value).

Method

Subjects. Twenty-two 4-year-olds (age range = from 4 years 1 months to 4 years 11 months; M = 4 years 6 months; 7 girls and 15 boys) were tested.

Twenty-two adults were tested (age range = from 17 years to 21 years, M = 18 years; 9 females and 13 males). Adults were recruited and tested at a University of Waterloo campus student cafeteria.

Materials and procedure. Children were given the same screening task as in Experiments 1and 2. Immediately following the screening task, children watched two stories presented on a laptop computer. The stories were presented in PowerPoint using cartoon replicas of two adults and 2 different objects; different cartoon replicas were used for each story (see Appendices C & D for examples). In each story, a man and a woman character were positioned a few inches apart in the middle of the slide. The character that was not the owner had an object (owned by the other character) in his/her hand (a shovel in story 1, a cell phone in story 2). Participants were only tested in the experimental condition as the previous experiments had already ruled out alternative reasons for their

judgements (preference for judging based on whose turn is next or inability to keep two factors in mind). Participants were asked a different test question than previous experiments in order to determine if the findings from the previous experiments (children support owners' rights, while adults support other factors more strongly) would replicate in different types of situations. Participants were asked, "who should get the shovel/cell phone right now. The addition of "right now" was added to make clear to the participants that I did not mean who should get the object *after* the first character has finished using it. Here is a sample story from this condition:

> This is a story about these two adults. This one is a man and this one is a woman, and they are friends. And what is this? It is a__(shovel): Well, the shovel belongs to the woman. It is the woman's shovel. The man is using the shovel to plant a flower. He needs the shovel to finish planting the flower. The woman does not want the man to use her shovel. She wants him to give it back right now.
>
> Immediately following the stories, participants were asked a test question
>
> *Test question.* Who should get the shovel right now?

Children and adults were given the same stories and both were asked only one test question.

Two factors were fully counterbalanced between subjects: (1) whether the male characters were on the right and female characters were on the left in both stories, or the reverse; (2) whether the person with the need for the object was a man in the first story and a female in the second, or the reverse.

Results

Participants were scored 0 for choosing the current user of the object and 1 for choosing the other character who wanted the object. Participants could obtain a maximum score of 2 points over the two stories.

An initial analysis tested whether scores differed across ages. As can be seen in Figure 4, 4-year-olds were more likely to choose the owner than were adults ($t(42) = 2.14$, $p = .04$). Further analyses investigated whether participants were more or less likely than a chance score of 1 to side with the wanter. Four-year-olds sided with the wanter (70%) more than chance ($t(21) = 2.11$, $p=.05$). However, adults sided with the owner (42%) and with the possessor (56%) at about chance rates, ($t(21) = 0.83$, $p = .42$).[2]

Discussion

When judging property disputes between two adult characters, children were strongly influenced by the rights of an owner and sided against the current possessor despite this characters need for the object. In contrast, adults placed lower value on ownership rights and more on current possession and need, and judged that the possessor should maintain possession of the object in dispute (however, not at rates exceeding chance). The findings from this experiment replicate those from previous experiments and demonstrate that children value ownership rights much more strongly than do adults.

Experiments 1, 2A, 2B, and 3 determined that children have a very strong ownership bias that is not easily disregarded when they are given a reason to do so. But what happens when children are provided with a more extreme reason for disregarding the owner's rights? Experiment 4 investigated the strength of children's ownership bias by determining whether the bias is rigid or can be overridden by a non-owner's extreme need for using the object.

Chapter Seven: Experiment 4

Violation of Owners' Rights in the Interest of Public Safety

Despite the fact that an owner's rights should be valued, there are some situations where other factors should be valued more strongly than an owner's rights to use or exclude others from his property. For instance, it is sometimes necessary to violate an owner's rights when this violation is needed to prevent harm toward others. For example, if a police officer suspects that a crime is being committed by a homeowner he can enter the home without permission from the owner. In this case, the homeowner does not have the right to exclude the officer. There are also more common everyday occurrences for violating owners' rights. For instance, if a child lost his gloves and had to walk to school on a very cold winter day, no one would likely object if he borrowed his brother's gloves without asking, especially if his brother drove to school and would be unlikely to need the gloves himself.

We know that many adults would likely agree with violating owner's rights during these and similar types of situations, but would children? If their ownership bias is rigid and inflexible then perhaps they will feel that there is never any reason to violate owner's rights and would not agree with the violation, even when it was needed to prevent harm from occurring.

Experiment 4 investigated whether children could disregard their ownership bias when presented with a situation where disregarding the owner's rights was needed to prevent harm from occurring

Children watched scenarios where two characters each wanted to use the same object. One character had a compelling reason for using the object and the other character was the owner of the object. Specifically, the character that was not the owner wanted to obtain the object so that he could prevent harm to an animal from occurring. However, the owner did not want this character to use his object. Once again, no mention was made about the owner's intended use for the object. This experiment places two moral principles in conflict with each other. Previous studies have shown that children are capable of judging moral rules, and that they often judge a moral rule violation that inflicts harm as worse than others (Tisak & Turiel, 1984).

If the ownership bias is rigid and inflexible, than I expect children to side with the owner. However, if the ownership bias is flexible and can be overridden in the interest of preventing harm, than I expect them to side with the character that needs the object to prevent harm to the animal. Adults are expected to side with the character that wants the object to help the animal.

An alternative explanation for why children would side with the owner may be that they could not consider that harm would occur to the animal if the non-owner did not obtain the object in dispute. To rule out this possibility, half of the participants in each age group received a control condition. In the non-ownership (control) condition the character protesting the use of the object that was needed to prevent harm had no claim to the object (i.e., in this condition, he is not the owner of the object needed). Instead, a third character, a teacher, was the owner of the object and lets everyone use the object. Because the owner was not involved in the dispute in this condition, one would expect that children and

adults would both side with the character that wanted the object to prevent harm to the animal.

Method

Subjects. Ninety-five children were tested: 37 3-year-olds (age range = from 3 years 0 months to 3 years 11 months; *M* = 3 years 6 months; 19 girls and 18 boys), 24 4-year-olds (age range = from 4 years 0 months to 4 years 11 months; *M* = 4 years 7 months; 12 girls and 12 boys), and 34 5-year-olds (age range = from 5 years 0 months to 5 years 11 months; *M* = 5 years 5 months; 16 girls and 18 boys). An additional three children were tested. One 3-year-old failed to answer the memory question in the non-ownership condition, one 3-year-old in the ownership condition would not participate, and one 5-year-old in the non-ownership condition would not participate. All were excluded from further analysis.

Forty-eight adults were tested (age range = from 18 years to 26 years, *M* = 21; 33 females and 15 males). Adults were recruited and tested at a University of Waterloo campus student center.

Materials and procedure. Children were given the same screening task as in the previous experiments. Immediately following the screening task, children watched two stories presented on a lap top computer. The stories were presented in PowerPoint using cartoon images of children and toys; different cartoon images were used for each story (see Appendices E & F for examples). In each story, a boy and a girl character were positioned a few inches apart in the middle of the slide. A third character, the teacher, was positioned in the bottom centre of the slide (centred between the two characters). An object (a net in story 1, a ladder in story 2) was placed between the two characters. A

cartoon depiction of a dog stuck in a swimming pool in story 1, and a cat stuck in a tree in story 2, was placed in the top centre of the slide. Participants were randomly assigned to either the ownership condition or the non-ownership condition.

In the ownership condition, the two characters were at school. Character A needed to use the object to rescue the dog (story 1) or cat (story 2), but character B, the owner of the object, did not want character A to use the object. Here is a sample story from this condition:

> Story one: This is a story about these two kids at school. This one is a boy and this one is a girl. And this is their teacher. And what is this? it is a__(net): Well, the net belongs to the girl. It is the girl's net. *Pre-memory question*: *Whose net is it? (girl)* Well, the boy needs to use the net because look, his dog is stuck in the swimming pool, and he can't swim! The boy needs the net to pull his dog out, so that the dog will be safe. But the girl doesn't want the boy to use the net. I have some questions for you.

In the non-ownership condition, children were given an almost identical story except that they were told that the teacher was the owner of the object. Here is a sample story from this condition:

> This is a story about these two kids at school. This one is a boy and this one is a girl. And this is their teacher. And what is this? it is a__(net): Well, the net belongs to the teacher, it is the teacher's net. and she lets everyone use it. *Pre- memory question*: *Whose net is it?(teacher)*. Well, the boy needs to use the net because look, his dog

is stuck in the swimming pool, and he can't swim! The boy needs the net to pull his dog out, so that the dog will be safe. But the girl doesn't want the boy to use the net. I have some questions for you.

Immediately following the stories, children were asked three question (always in the same order).

1) Test question. Would it be ok for the girl/boy to use the net/ladder?

2) Memory question. What does the girl/boy want to do with the net/ladder?

3) *Post-memory question.* Whose net/ladder is it?

Adults were given the same stories as the children but they were not asked the pre-memory question. Adults were randomly assigned to the ownership or non-ownership conditions.

Within each condition and age group, two factors were fully counterbalanced between subjects: (1) whether boy characters were on the right and girl characters were on the left in both stories, or the reverse; (2) whether the child with the need for the object was a boy in the first story and a girl in the second, or the reverse.

Results

Participants were scored 0 for choosing the character that needed the object and 1 for choosing the other character who wanted the object (max score = 2, 1 point per story). A 2 (condition: ownership, control) X 4 (age: three, four, five, adult) ANOVA revealed a main effect of age, $F(3,135) = 7.06$, $p < .01$. As can be seen in Figure 5, 3-year-olds were more likely to side with the wanter than 4- and 5-year-olds or adults. However, there was no main effect of condition, $F(1,135) = 2.52$, $p = .12$, and no interaction between condition and age, $F(3,135) = 1.21$, $p = .31$.

Although overall there was no main effect of condition or interaction with age, further analyses nonetheless examined whether scores varied by condition at any age group. Three-year-olds tended to side with the wanter more in the ownership condition than in the non-ownership condition ($t(35) = 1.91$, $p = .06$). However, there was no effect of condition for 4- and 5-year-olds (4-year-olds: $t(22) = 0.34$, $p = .74$; 5-year-olds: (32) = 0.22, $p = .83$) or adults ($t(46) = 1.16$, $p = .25$).

Additional analyses investigated whether participants chose the wanter more often than would be expected by a chance score of 1 in each condition. Three-year-olds did not choose the wanter more often than would be expected by chance in either the ownership or the non-ownership condition (ownership: $t(18) = 1.16$, $p = .26$; non-ownership: $t(17) = 1.56$, $p = .14$). However, 4-year-olds, 5-year-olds, and adults chose the wanter less often than would be expected by chance in both the ownership condition (4-year-olds: $t(11) = 4.18$, $p < .01$; 5-year-olds: $t(17) = 3.40$, $p < .01$; adults: $t(23) = 4.00$, $p < .01$) and the non-ownership conditions (4-year-olds: $t(12) = 5.00$, $p < .01$; 5-year-olds: $t(16) = 3.05$, $p < .01$; adults: $t(23) = 7.62$, $p < .01$), with most choosing the character that needed the object instead.

Discussion

In this experiment, children watched scenarios where one character (non-owner) needed to use an object to help save an animal, and another character wanted the object and protested (in the ownership condition this character is also the owner) the other characters desire to obtain the object to try to save the animal. Adults sided with the character who needed to use the object to prevent harm from occurring in both the ownership condition and the non-ownership condition. This demonstrates that the adults

place more value on prevention of harm than on an owner's rights to his object. Interestingly, in this experiment, most children similarly sided with the character that needed the object to help the animal in distress in both conditions. This is the first experiment to demonstrate that children can set aside the rights of an owner and instead reflect on the reason that a non-owner should be given temporary possession of an object. Presumably, when a non-owner has a very compelling reason for using an object (such as in the interest of preventing harm to an animal) children are able to set aside the owner's rights to his object and side with the non-owner. This suggests that children's ownership bias is not rigid, but rather is flexible and can be overcome when there are convincing reasons.

Although, regardless of the condition, most children sided with the character that needed the object to prevent harm, 3-year-olds tended to side with the wanter more often in the ownership condition than in the non-ownership condition. However, their scores did not depart from chance in either condition (unlike the other ages). One explanation for 3-year-olds' chance-level performance is that they had difficulty understanding the details of the story, and simply guessed which character to side with. Although the findings are consistent with this interpretation, it is unlikely that children had no understanding of the details of the story. If they did have difficulty understanding the stories, they would have had similar difficulty with the non-ownership condition and yet there was a clear difference in responses between conditions. Furthermore, it is implausible that children did not understand the details of the story as the structure of stories in this experiment was very similar to the format used for all the stories in this thesis.

An alternative explanation for the chance-level predictions is that children do understand the details of the study, but they are less able to disregard ownership than are older children. Perhaps because they value ownership rights so strongly, they uphold these rights to the exclusion of all other factors. The fact that the 3-year-olds tended to side against the character who wanted the object to prevent harm when the owner was involved in the dispute more often than when an owner was not involved in the dispute supports this view.

In this experiment, the object in dispute was placed between the characters and neither character possessed the object. Children and adults sided with the character that needed the object to prevent harm, providing evidence that they are able to consider a character's need for an object even when this character is not currently in possession of the object. In the previous experiments the character that possessed the object was also the character that had a more pressing need for the object. As a result when adults (and children in the non-ownership condition) sided with this character**,** they might have done so because of the value that they placed on possessor's rights *or* because of the value that they placed on that character's reasons for needing the object.

To further examine the flexibility of the ownership bias, Experiment 5 examined a different situation in which preventing harm requires ownership to be disregarded. This experiment examined a different type of situation–one in which ownership might need to be disregarded to prevent an owner from using his object in a destructive way.

Chapter Eight: Experiment 5

Sometimes violating owners' rights is needed to prevent harm to others. It is also sometimes necessary to violate owners' rights when the owner is about to use their property in a harmful way. An example of such reasoning is offered early in Plato's Republic, when Socrates suggests that it would be wrong to return weapons to a "man not in his right mind" (Plato, 1871). Presumably, the weapons should not be returned because the owner is likely to inflict harm with them. Although permission is typically required before taking an object that belongs to someone else, there are some situations where it is not necessary. For instance, if a person is walking down the street carrying a machete, a police officer can confiscate the machete even though the person is the rightful owner. Similarly, parents and teachers often have to take away a child's property to prevent them from harming their own property or to prevent them from harming another person. For instance, if a child is throwing their ball inside a classroom, a teacher may take the ball away from the child to prevent others from being injured. Experiment 5, examines 3- to 5-year-olds' and adults' judgments about such situations.

Children again watched scenarios where two characters each wanted to use the same object. One character (non-owner) currently possessed the object and refused to give it to the second character (owner of the object) because of the owner's plan to inflict harm with the object. If the ownership bias is rigid and inflexible, than one would expect children to once again side with the owner, despite the plans the owner has to inflict harm with the object. However, if the ownership bias is flexible, then one would expect children to once again override the ownership bias and reason more like the adults (by siding with

the character that wants to keep the object away from the person wanting to inflict harm with it).

An alternative explanation for why the children might side with the owner could also be that they could not consider the fact that if the owner obtains the object in dispute he will inflict harm with his object. To rule out this possibility, half of the participants in each age group received a control condition. In the control (non-ownership) condition, the character requesting the use of the object to inflict harm has no claim to the object (in this condition, he is not the owner of the object needed). Instead, a third character, a teacher, was the owner of the object and lets everyone use the object. Because the owner was not involved in the dispute in this condition, one would expect that children and adults would both side with the character that wanted the object to prevent the other character from inflicting harm with it.

Method

Subjects. Ninety-eight children were tested: 34 3-year-olds (age range = from 3 years 0 months to 3 years 11 months; *M* = 3 years 6 months; 17 girls and 17 boys), 36 4-year-olds (age range = from 4 years 0 months to 4 years 11 months; *M* = 4 years 3 months; 18 girls and 18 boys), and 28 5-year-olds (age range = from 5 years 0 months to 5 years 11 months; *M* = 5 years 5 months; 10 girls and 18 boys). Nine additional 3-year-olds were seen, but failed to answer the memory questions correctly (eight in non-ownership condition and one in the ownership condition). Two additional 3-year-olds were excluded for failure to participate, and four 4-year-olds (two in each condition) also failed to answer the memory questions correctly. All were excluded from further analysis.

Forty-nine adults were tested (age range = from 18 years to 58 years, *M* = 22; 18 females and 31 males). Adults were recruited and tested at a University of Waterloo campus student center.

Materials and procedure. Children were given the same screening task as in the previous experiments. Immediately following the screening task, children watched two stories presented on a lap top computer. The stories were presented in PowerPoint using cartoon images of children and toys; different cartoon images were used for each story (see Appendices G & H for examples). In each slide, a boy and a girl character were positioned a few inches apart in the middle of the slide. A third character, the teacher was positioned in the bottom centre of the slide (centered between the two characters). An object (a baseball bat in story 1, a shovel in story 2) was beside one of the two characters (the current possessor). A cartoon depiction of a school with a view of the school's windows and the flowers used as landscaping was placed in the top centre of the slide. Participants were randomly assigned to either the ownership condition or the non-ownership condition.

In the ownership condition, the two characters are at school. One character, the object's owner, wants to use the object in a destructive manner (to break the school's windows in story one, to steal the flowers from the school in story two), the other character (the current possessor of the owner's object) does not want the owner to use the object. Here is a sample story from this condition:

> Story one: This is a story about these two kids at school. This one is a boy and this one is a girl. And this is their teacher. And this is their school. What is this? It is a__(baseball bat): Well, the baseball bat

belongs to the girl. It is the girl's baseball bat. *Pre-question: Whose baseball bat is it? (girls).* The girl wants to use the baseball bat because she wants to break the school's windows. But the boy does not want to give her the baseball bat because he does not like what she is going to do with it. I have some questions for you.

In the non-ownership condition, children were given an almost identical story except they were told that the teacher was the owner of the object. Here is a sample story from this condition:

This is a story about these two kids at school. This one is a boy and this one is a girl. And this is their teacher. And this is their school. What is this? It is a__(baseball bat): Well, the baseball bat belongs to the teacher but she lets everyone use it. *Pre-question: Whose baseball bat is it? (teacher's).* The girl wants to use the baseball bat because she wants to break the school's windows. But the boy does not want to give her the baseball bat because he does not like what she is going to do with it. I have some questions for you.

Immediately following the stories, children were asked three question (always in the same order).

1) Test question. Should the boy give the baseball bat to the girl?

2) Memory question. What does the girl/boy want to do with the baseball bat/shovel?

3) *Post-memory question.* Whose baseball bat/shovel is it?

Adults were given the same stories as the children with the same modifications mentioned in Experiment 4. Adults were randomly assigned to the ownership or non-ownership conditions.

Within each condition and age group, two factors were fully counterbalanced between subjects: (1) whether boy characters were on the right and girl characters were on the left in both stories, or the reverse; (2) whether the child with the need for the object was a boy in the first story and a girl in the second, or the reverse.

Results

Participants were scored 0 for choosing the current user of the object and 1 for choosing the other character who wanted the object. Participants could obtain a maximum score of 2 points (1 point per story).

A 2 (condition: ownership, control) X 4 (age: three, four, five, adult) ANOVA revealed a main effect of condition, $F(1,139) = 9.40$, $p < .01$, and a main effect of age, $F(3,139) = 4.08$, $p < .01$. However, there was no interaction between condition and age, $F(3, 139) = 1.62$, $p = .19$. As can be seen in Figure 6, participants were more likely to side with the wanter when this character was the owner than when this character did not own the object and this difference was more apparent at younger ages.

Although there was no interaction between condition and age, further analyses nonetheless examined whether scores (the number of times participants choose the wanter) varied by condition at each age group. There was no effect of condition in 5-year-olds ($t(26) = 0.22$, $p = .83$), or in adults ($t(47) = 1.21$, $p = .23$); however, scores did vary by condition for 3-year-olds ($t(32) = 3.04$, $p = .01$) and 4-year-olds ($t(34) = 2.21$, $p = .03$). That is, the number of times that the participant chose the wanter did not vary across

condition for 5-year-olds or adults, but 3- and 4-year-olds chose the wanter more in the ownership than in the non-ownership condition.

Additional analyses investigated whether participants chose the wanter more often than chance in each condition. In the ownership condition, 3- and 4-year-olds were no likelier than chance to choose the wanter (3-year-olds: $t(19) = 1.37$, $p = .19$; 4-year-olds: $t(17) = 0.49$, $p = .63$). However, they chose the wanter less often than would be expected by chance in the non-ownership condition (3-year-olds: $t(13) = 3.23$, $p = .01$; 4-year-olds: $t(17) = 4.58$, $p = .01$), with most choosing the user instead. Adults and 5-year-olds were less likely than chance to choose the wanter in both the ownership condition (5-year-olds: $t(13) = 2.51$, $p = .03$; adults: $t(24) = 3.93$, $p < .01$) and the non-ownership condition (5-year-olds: $t(23) = 7.23$, $p < .01$; adults: $t(23) = 7.62$, $p < .01$), most choosing the user instead.

Discussion

In Experiment 5, I tested whether children would disregard owners' rights and judge that a non-owner is justified in excluding an owner from using his own object if the owner has harmful intentions. In both the ownership and non-ownership conditions, adults sided with the character (non-owner) that wanted to maintain possession of the object to prevent the wanter from using the object to inflict harm. This demonstrates that adult's place more value on the reason for the non-owners attempt to maintain possession of the object, and less value on the owner's right to use his object. Similarly, most children (in both conditions) sided with the character that wanted the object to prevent another character from using it in a harmful way. The character that wanted to keep the object from the wanter was also the character that was in possession of the object at the time of

the dispute. Therefore, in addition to replicating the findings from Experiment 4 and determining that children can override the ownership bias when provided with a very compelling reason for the non-owner to be given the object, this study also provides evidence that children are able to judge that there are times when a possessor should be more entitled to the object than the owner.

Although children and adults sided with the character that sought to prevent the wanter from inflicting harm with the object and they did so regardless of condition, 3- and 4-year-olds appeared to be influenced by the presence of an owner in the dispute. When the character that had intentions of causing harm with an object (wanter) was also the owner (ownership condition), 3- and 4-year-olds more often sided with the wanter. However, their scores did not depart from chance in the ownership condition. Thus, it appears that 3-year-olds and 4-year olds were less able to disregard ownership. In contrast, 5-year-olds and adults were less likely than chance to choose the wanter in both the ownership and non-ownership conditions.

The findings from this experiment provide additional evidence that there are times when children value ownership rights less than other factors. This study also further demonstrates that children`s ownership bias is flexible and can be overcome when there are compelling reasons to do so.

Chapter Nine: General Discussion and Future Directions

Five experiments investigated preschoolers' and adults' ownership reasoning during property disputes in which they are not directly involved. In each of the experiments children and adults observed two characters arguing over the use of an object and were then asked to make property entitlement decisions. One character (non-owner) always had a valid reason for wanting the object, while the other character (wanter) either wanted to use the object, or objected to the non-owner's use of the object. In these experiments, ownership rights were in direct opposition to accepted social conventions. Despite the fact that the owner has rights to his object in each of the experiments, it would be considered socially acceptable to allow the non-owner temporary access to the object.

In Experiment 1, children and adults were asked to judge which of two characters should be entitled to the object in dispute. Participants could have chosen either the character that possessed the object and had a valid reason for wanting to maintain possession (that character needed the object to complete a birthday card) or the other character that wanted the object, but did not indicate a reason (wanter). In Experiments 2A and 2B, participants were faced with a property entitlement dispute similar to that in Experiment 1. This time, however, it was made clearer that the wanter did not have any reason, stated or implied, for needing the object other than just protesting the non-owner's use of the object.

When neither of the characters involved in the dispute owned the object (non-ownership condition), both children and adults sided with the character that possessed the object and had a valid reason for continued use of the object. However, in the ownership condition, in which the wanter actually owned the object, children and adults differed in

their judgments. Adults were not swayed by the presence of the owner in the dispute and did not appear to value the owner's rights to his object. The adults continued to judge that the character with a valid need for the object was entitled to continued use. In contrast, children at all ages were strongly influenced by the presence of the owner in the dispute.

In Experiment 3, participants were faced with a property entitlement dispute similar to that in Experiment 1 and 2. This time, however, the disputes were between two adult characters and the dispute was over objects of greater monetary value to adults. The results of Experiment 3 were similar to those of Experiments 1 and 2. Adults did not appear to strongly value[3] the owner's rights to his object. Yet, children at all ages were once again strongly influenced by the presence of the owner in the dispute. Children were biased towards judging that the owner was more entitled to the object, despite the non-owner's more valid reason for using the object, and despite the fact that it would not be considered socially acceptable to take the object back before then non-owner was finished using it. Children supported the owner's rights in these disputes and did not alter their judgments despite the change in age of the characters involved in the dispute and despite the change in objects being fought over. These findings were expected since children strongly value owner's rights to the exclusion of all other factors.

The results of these studies demonstrate that children place more importance (value) ownership much more strongly than do adults and are consistent with Ross's (1996) study. Unlike children, adults often value other factors such as current possession and need. Adults are sensitive to context, evaluating more factors than children evaluate in reaching their decisions about who should possess objects.

The findings from these studies also contradict a recent theory by Blake and Harris (2011) suggesting that children are not born with an understanding of ownership, but instead rely on visual and verbal information to construct knowledge about the relationship between people and objects. Blake and Harris (2011) propose that one of the major difficulties young children face when developing a mature concept of ownership is the contradiction between verbal and visual ownership information. This contradiction can often lead to difficulties in learning about ownership. For instance, if children observe one character with an object, but are verbally told that a second character is the true owner of the object, they may have difficulty overriding their initial visual information and accepting that the second character is the actual owner. The authors suggest that this difficulty in overriding initial visual information could be behind young children's difficulty with gift-giving scenarios. Presumably, it is not until age five that children can overcome their initial visual information that the first possessor owns the object and accept the verbal information that the first possessor has given the object to the second-possessor as a gift (and therefore the second possessor now owns the object) (Blake and Harris (2009).

However, the findings from my Experiments 1 to 3 contradict this view. In these experiments children visually observed an object with a possessor and were verbally told that the object belonged to a second character that was never seen physically possessing the object. Children as young as three years of age were able to not only correctly identify the character that did not physically possess the object as the owner, but they were also able to make judgments about what this owner's rights were.

Right of Exclusion

One of the goals of this thesis was to determine whether children understand that owners have the right to exclude others from their property. As mentioned in the introduction, almost no studies have addressed children's understanding of ownership using a methodology that would eliminate the influence of children's self-interest on the results. However, a recent study by Kim and Kalish (2009) did take steps to eliminate this problem, using a third party methodology. Children and adults reasoned about scenarios in which an owner and a non-owner disagreed about whether certain actions could be taken with an object. For example, in one story an owner and a non-owner disagreed about whether to allow a third party to use an object. Children were asked to decide who gets to make the decision (whether to lend the object or not). Children aged four and five often sided with the owner, but did so less often than adults. Because children sided with the owner less often than adults, the authors suggest that children have less appreciation for ownership rights than adults. However, the Kim and Kalish (2009) studies did not include a control condition and therefore, it is difficult to determine if children sided less often with the owner because they have less appreciation of the owners rights or simply because they did not agree with the outcome of the owner's actions (i.e., if the owner wanted the object to re-categorize the object, such as using a hat as a purse). Interestingly, if the children ever did made a judgment that an action could be performed, they only granted this right to the owner and not to the non-owner. This suggests then that the objections had more to do with the action than having less appreciation for owner's rights.

While the Kim and Kalish (2009) studies suggest that children aged four and five may have less appreciation for ownership rights than older children, my studies provide

evidence that children as young as 3-years-old understand and value the right of exclusion. By judging that the owner was more entitled to his object when the non-owner had a valid reason for wanting to use the object (Experiments 1 and 3), or when the owner had no reason for using the object except not wanting the other character to use it (Experiment 2), children clearly indicate that they recognize that the owner has the right to exclude a non-owner from using an object, thereby demonstrating that they value this right over other principles of entitlement.

Ownership bias or another explanation?

There could be interpretations of why children would side with the owner that do not hinge on an ownership bias. Perhaps children chose the owner simply because (a) they are unable to consider a character's need for an object when making allocation decisions, or (b) children have a strong belief in turn-taking and simply judge that whichever character has not had a turn with the object should be given a turn. Therefore, they may have chosen the owner simply because they felt he should be given a turn with the object.

The non-ownership condition in Experiments 1 and 2 helped to rule out both of these possibilities. First, when no owner was present, children *did* consider the character's need for an object and judged that this character should be entitled to the use of the object. Likewise, the non-ownership condition ruled out the possibility that children chose the owner because they felt he should get a turn with the object. If children did have a tendency to side with a character who had not yet had a turn with an object, then in the non-ownership condition, they should still have chosen the wanter. The wanter did not currently possess the object and had not yet had a turn with the object in all three experiments; however children did not side with this character. In the non-ownership

condition children judged that the character currently possessing the object should be entitled to continued use of the object, indicating that they were not concerned with nor were they relying on the concept of turn-taking.

An additional possibility is that children are unable to keep two factors in mind when making allocation decisions, and did not fully consider both the possession rights and ownership rights when making their allocation decisions. However, there is evidence that children can consider simultaneous factors with a high degree of sophistication (Cassidy, Chue & Dahlsgaard, 1997). Even if it were true that children could not consider multiple factors, this still would not explain why children focused on the owner's rights rather than the possessor's rights. After all, possession is visible whereas ownership is abstract. If children could not keep two factors in mind, it would seem more plausible that they would keep the visible factor in mind and side with the possessor. However, this was not the case. Children judged that the owner should be entitled to the use of the object, indicating an ownership bias.

Flexibility of Ownership Bias

Beyond investigating whether children have an ownership bias, I was interested in determining whether the bias is rigid and difficult to override, or whether the bias is flexible and can be overridden when children are provided with compelling reasons to do so. Therefore, in Experiment 4, participants were presented with stories in which the non-owner had a more compelling reason for using the object than in Experiments 1, 2, and 3. Here, the non-owner wanted to use the object to prevent harm to an animal, which placed the owner's right to his property against the animal's right to be safe and free from harm. In Experiment 5, I further explored the flexibility of the ownership bias and sought to

determine whether participants could disregard an owner's rights to his object when the owner wanted to use his object in a harmful way (i.e., to destroy property). Experiment 5 was unique in that it placed an owner's right to use his property in direct conflict with another character's altruistic desire to protect someone else's right not to have his property damaged.

If children have a rigid ownership bias that is difficult to override, they would have judged that the owner (wanter) was entitled to the object in dispute, despite the non-owners unquestionable need for the object. However, in Experiment 4, both adults and children aged four and older sided against the wanter and did so regardless of whether the wanter was the owner. Three-year-olds, on the other hand, were more likely to side with the wanter when this character was the owner, but their responses did not depart from chance in either condition. In other words, 3-year-olds did not rigidly uphold owner's rights, but they were influenced by the presence of the owner nonetheless.

Similarly, in Experiment 5, adults and 5-year-olds sided against the wanter regardless of whether the wanter was the owner or not. However, 3- and 4-year-olds were more likely to side with the wanter when this character was the owner, but their responses did not depart from chance in the ownership condition. Taken together, these findings suggest that children *can* disregard the ownership bias, when provided with very compelling reasons to do so.

Why do Children Disregard an Owners' Right When Doing So Prevents Harm?

Although we have evidence that children value ownership much more strongly than adults, Experiments 4 and 5, provide evidence that there are factors that children value even more than an owner's right to his property, such as freedom from harm. These

findings also suggest developmental changes in judgments about whether it is acceptable to disregard ownership rights to prevent harm. Older children (and adults) are able to disregard ownership rights when they are provided with compelling enough reasons to do so, however, younger children are more influenced by the presence of the owner in the dispute and often uphold owner's rights to the exclusion of all other factors.

A further question remains: Why do older children reason like adults and judge that ownership should be disregarded to prevent harm, but do not hold the adult view that there are some situations where a non-owner should be entitled to use an object even when an owner objects? One possibility is that children are better able to set aside owners' rights in situations where it is necessary to prevent harm from occurring because of a general capacity to reason about how to minimize bad outcomes. Previous studies investigating children's moral development found that, like adults, most children by 3- to 4-years of age can generate utilitarian judgments (Pellizzoni, & Surian, 2010). That is, they believe that in each situation, there are definite rules and expectations as to what a person should do to achieve the best outcome and to benefit the greatest number of people. Presumably, in Experiments 3 and 4, older children were able to disregard the ownership bias in the interest of minimizing the bad outcome that would occur if the owners' rights were not violated (i.e., the animal would be harmed in Experiment 4 and property damaged would occur in Experiment 5). However, the younger children had difficulty disregarding owner's rights when doing so was necessary to minimize bad outcomes.

Another possibility is that children have learned that some moral and rule violations are considered worse than others. Thus, in Experiments 4 and 5 children may be aware that it is wrong to disregard an owner's rights, but may feel that the violation of

other rights (such as the right to be free from harm in Experiment 4 and the right to not have property damaged in Experiment 5) are much more serious. Previous studies have found that young children are capable of evaluating moral rules based on their concepts of rights, justice, and the welfare of others (Tisak & Turiel, 1984) and to judge that rule violations that inflict harm are more wrong than others.

Origins of the Ownership Bias

Another goal of my studies was to determine whether children and adults differ in their reasoning about ownership. If children learn about ownership directly from adult input, then their reasoning should mirror that of the adults and they should place lower value on owners' rights. If their reasoning differs from that of the adults, this would suggest that children may not be acquiring their ownership understanding from the adults in their environment. This thesis demonstrates not only that children and adults differ in their ownership reasoning, but that the children value ownership much more strongly than the adults. It is unclear how children could "learn" to appreciate and value ownership rights when my studies demonstrate that the adults do not often support the rights of owners.

An important question is whether the ownership bias is somehow conveyed in culture, or whether it emerges naturally in young children. I have three reasons to believe that children do not learn about ownership directly from environmental input. First, children show a very early onset of ownership understanding before most parents have spent any time attempting to teach their children about ownership. For instance, beginning at age two children demonstrate a remarkable understanding of ownership (Eisenberg-

Berg, Haake, Hand, & Sadalla, 1979, 1981; Fasiq, 2000; Friedman & Neary, 2008; Neary, Friedman & Burnstein, 2009; Ross, 1996).

Second, there is little evidence suggesting that parents teach their children why someone is an owner of an object, how that person acquired ownership, or why ownership is important. When parents intervene in property issues they most often focus on teaching their children to not play with dangerous or breakable objects and instruct their children to avoid throwing objects (Dunn & Munn, 1987). There is also evidence that parents often teach their children that they should take turns and share objects, suggesting to children that parents do not value the rights of owners, but instead value more co-operative behaviour (Lollis, Van Engen, Nowack, & Ross, 1999; Ross, 1996). Yet, somehow children still demonstrate that they strongly value the rights of owners, and uphold owners' rights during property disputes.

Third, parental intervention does not seem to affect children's ownership behaviour. In Ross's (1996) study, when parents intervened in young children's property entitlement disputes and suggested that the children should share the object in dispute or find something else to play with, children managed to strongly uphold these rights regardless of what parents were instructing. It is hard to explain how young children could come to value the rights of owners so strongly, and so early in development, when evidence suggests that parents are actually instructing their children to consider factors other than ownership in property entitlement disputes.

Since it is unlikely that children learn about ownership directly from parental input, they must have some other source for their knowledge about ownership. One possibility is that children still learn about ownership from their parents, but not from their

parents' judgments during property disputes. Instead, children might learn about ownership indirectly from parent's ownership interactions with other adults. However, this is doubtful for two reasons. First, the findings from Experiment 3 suggest that in property disputes between adults, adults would not show strong support for owners' rights. Second, adult property disputes are quite rare. So, it is unlikely that such young children would be present during adult property disputes or that they would be able to successfully process the disputes and the abstract rules of ownership from the adult behaviours. But, when adults are engaged in an argument over property, these disputes are usually disputes over objects that neither adult owns. For instance, adults disagree over such things as who has the right to a parking stall, or who was sitting in a chair first. In these situations, children would not be able to learn about ownership rules from these disputes as they are not unique to owned objects.

A second possibility is that children learn about ownership from peer interactions. However, this appears doubtful. If very young children did not know about ownership, then their peers would be equally unlikely to know much about ownership and it would be hard to see how they could learn from their peers to value ownership. Furthermore, most property disputes with peers occur in daycares, preschools, and playgroups (Tulviste & Koor, 2005). Often, in these situations, neither peer owns the objects in dispute and it seems unlikely that children could learn about the principles of ownership. It is more likely that children learn about the principles of possession rights during peer interactions. and therefore the disputes do not involve ownership rights, but involve possession rights instead.

A third possibility is that children learn about ownership from the types of utterances parents make during property disputes between siblings or peers. We know that during these types of disputes, parents often intervene to instruct their children to share. Perhaps parents utter statements such as; "let your brother have a turn" to the owner. This type of utterance many send the message to children that the owner has the right to decide and the parents are simply instructing children that they should allow their sibling to have a turn. However, similar utterances likely occur in situations where no owner is present. For example, children fighting over a swing at a park are likely to receive the same statement from their parents (i.e., "let your brother have a turn on the swing"). Again, this type of utterance would not be unique to ownership situations, so when used in ownership situations, it would not provide children with a clear message.

A fourth possibility is that children have a natural "ownership" sense–an intuitive belief about ownership that allows them to quickly make judgments and decisions about ownership, even in the absence of any experience within the specific ownership context and without explicitly reasoning about the issue. This ownership sense could derive from an innate concept of "ownership" combined with early experiences with objects. The ability to reflect and reason about ownership may develop later in life. This could explain why initially children strongly value ownership and later on in development they appear to value other factors over ownership.

What are Parents Doing?

If parents are not teaching their children to strongly value the rights of owners, than what are parents teaching? My argument is that children initially have a very strong sense of what is right and wrong in issues surrounding ownership, and that they

effortlessly judge that an owner should be entitled to his object in most property entitlement disputes. However, I suspect that at some point in development, children learn from parents that there are some situations when it would be appropriate and expected to override their rigid beliefs.

It is widely recognized that parents foster social development in children (Grusec & Kuczynski, 1977; Piaget, 1932; Youniss, 1980). Typically children are influenced by direct social experiences and learn how to interact with others based on the outcomes of specific interactions with others. They also are often influenced by cultural values and norms (Tomasello, 2009). Common social norms conveyed by parents include direction to be nice, to be helpful, to not lie, and to *share your toys* (Furby, 1978; Tomasello, 2009). Early in development, children have a lot of experience with disputes over toys (Chen, Fein, Killen, & Tam, 2001) and when parents intervene in the disputes they instruct their children to share or to find another toy to play with (Lollis, et al, 1999;Ross, 1996). This type of instruction should be teaching children that despite the owner having rights to his object, there are other factors to consider, such as the fact that it is considered socially acceptable to share with others. Presumably, with development, children learn when it would be appropriate to take information into account other than ownership. Thus, children do not appear to need instruction on the concept of ownership; instead, they need to learn the specific situations where it would be acceptable to disregard an owner's rights. That is, adults involved in a child's life (parents, teachers, and babysitters) do not have to teach children about ownership and the rights of owners; instead, they need to teach children how to be flexible in their intuitions about ownership.

If this view is correct, then children's frequent disputes over objects cannot result from children lacking an appreciation of ownership. Disputes might instead occur because non-owners have difficulty overcoming their desires for others' property, and because owners fail to appreciate their social obligation to share. The evidence that even school-age children have an ownership bias supports this view. It is clear that children are resistant to adult input suggesting that an owner should share their object, at least in non-emergency situations.

Conclusion

Understanding ownership rights is an important aspect of child development given that it is crucial for socially appropriate behavior. Despite the intuitive view that children learn about ownership from parental input, this thesis highlights the fact that children have their own ideas about ownership and value ownership much more strongly than adults do. These studies not only show that adults and children differ in their property entitlement reasoning, but they are also the first stuides of their kind to provide evidence that children as young as 3-years-old understand the rights of owners, especially the right to exclude.

These findings are really quite remarkable. There are many factors suggesting that children should know little about ownership. First, learning about ownership rights should be difficult. Ownership rights are invisible and abstract. In looking at an object, a child cannot see whether it is owned, who owns it, or what privileges are associated with owning the object–all they can see is who is in possession of the object. It is difficult to see how children could learn about these ownership rights, in the same way as it is difficult to see how children learn about other abstract concepts, such as other people's mental states.

Second, young children are often faced with situations where owners' rights are disregarded or downplayed. Despite the fact that owners should be entitled to use their property, and to decide whether others are permitted to use their property, parents frequently forbid children from playing with their own toys, forbid children from using their toys in certain ways, confiscate their toys, and insist that they share their toys with others (Ross, 1996). It is difficult to see how children could come to appreciate ownership rights, when they should instead view these rights as easily overridden by competing principles of entitlement. Hence, there are several reasons to believe that young children should have a limited appreciation of ownership, gaining this understanding only in later years. And yet, this thesis provides evidence that children value ownership more strongly than adults do and that they do so from very early in their development.

Contribution to Research

The present investigation makes a number of novel contributions to the study of ownership understanding in young children. First, despite the intuitive view that children place little value on ownership and as a result enter into frequent property disputes, these studies are the first to provide experimental evidence that children do value ownership and do so from a very young age. Second, these studies also provide compelling evidence not only that children value ownership, but that they value ownership much more strongly than adults. Third, these studies also contribute to our understanding of young children's reasoning about ownership by providing us with evidence that, despite the fact that they strongly value ownership, there are some situations where they are aware that other factors should be valued above ownership. Fourth, as mentioned above, these studies are the first

to demonstrate that not only do children value ownership, but they also understand and strongly value the owner's right of exclusion.

Future Directions

The results of the studies that make up the present investigation highlight the very surprising fact that despite the intuitive view that young children have little appreciation of ownership, this is actually not the case. Children strongly value ownership and do so at a young age. Although in this thesis it has been argued that children do not acquire their appreciation of ownership directly from parental input, there is a need for further studies directed at determining what exactly parents are telling their young children about ownership and what other sources might be influential. In particular, parental ownership utterances should be explored. Further studies should investigate if parents explicitly state what their children are entitled to or forbidden from doing with an object, and, if so, what specific property rules they cite. If, as I suspect, it is discovered that parents do not provide their children with these types of instructions within their ownership utterances, we would have further evidence supporting the findings from my thesis that children cannot be acquiring their strong support of ownership rights directly from parental/adult input.

This would support two conclusions. First, rather than learning about ownership from parental input, children may come to appreciate owner's rights but from early sibling interactions. As mentioned previously, because children value ownership at such a young age, I have argued that they are not learning this from their interactions with siblings or peers. One way to rule out this possibility would be to conduct studies investigating whether children with siblings show an earlier and increased understanding of ownership

as compared with only children. One method of studying the problem would be to record sibling/peer interactions in ownership situations. If children with siblings demonstrate an increased understanding of ownership, then perhaps there would be something in the early peer interactions that contribute to children's acquiring a strong ownership value. However, if children with and without siblings value ownership rights equally strongly, then this would further support the hypothesis that children are not learning about ownership. Second, such findings could provide further evidence in support of the view that ownership could be innate. It would provide us with one more piece of evidence suggesting that children do not actually need to be taught about ownership, but rather that it is something that they may be born with and may have a built-in understanding for ownership concepts.

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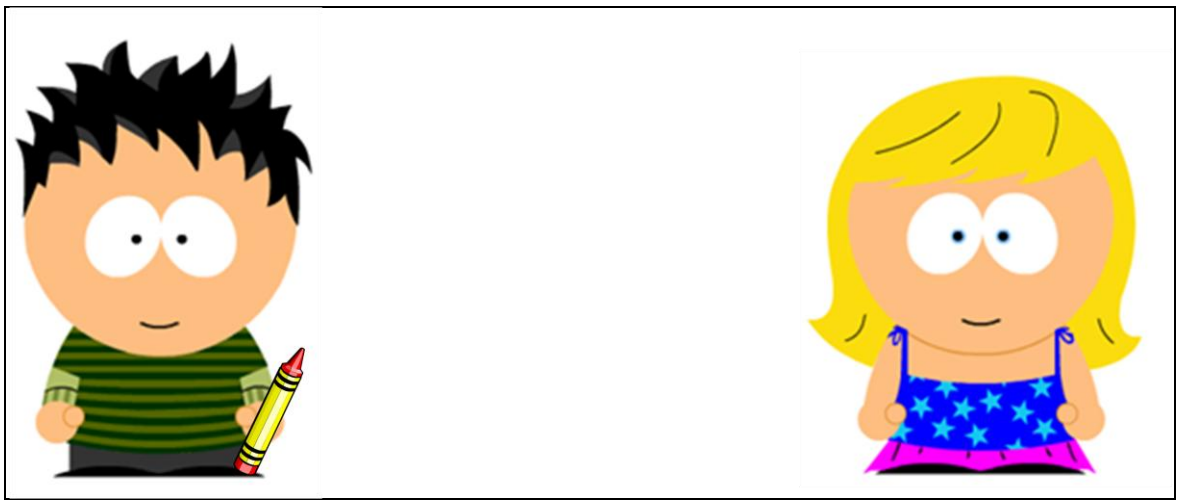
Footnote

[1]In Experiment 2 there were two questions asked per story. Eighty percent of participants showed the same pattern of response in their answers for both questions.

[2]In Experiment 3 (but no other experiments) there appeared to be item effects. There was a tendency for adults—but not for children—to respond differently to the two stories. Of the 22 adults, 13 were consistent across the two stories: 5 sided with the owner for both stories, and 8 sided with the non-owner for both stories. Of the remaining 9 adults, all chose the owner for the shovel story and the non-owner for the cell phone story (which was just significant by a sign test, $p < .01$). This aligns with the conclusion that the adults are not consistent in their selection, and certainly do not choose the owner all the time.

[3]When I say value in this sense I mean more strongly weigh this factor (ownership) above other factors (i.e., current possession and need).

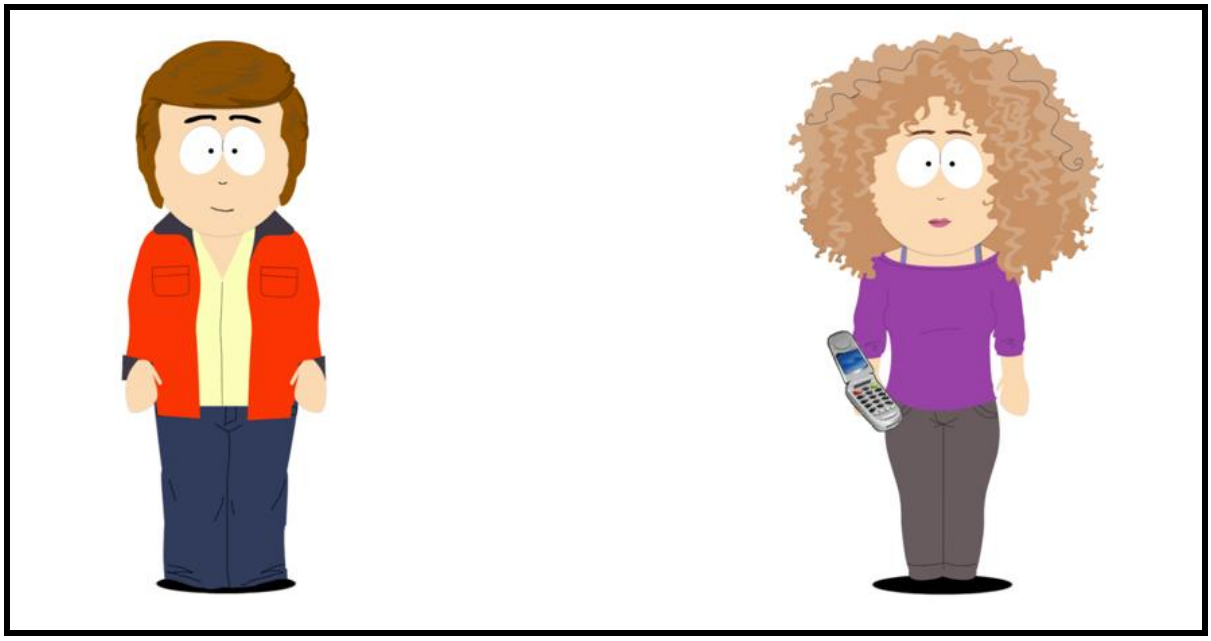
Appendix A. Example of cartoon depiction of property dispute as presented to adults in Experiments 1 & 2, Story 1



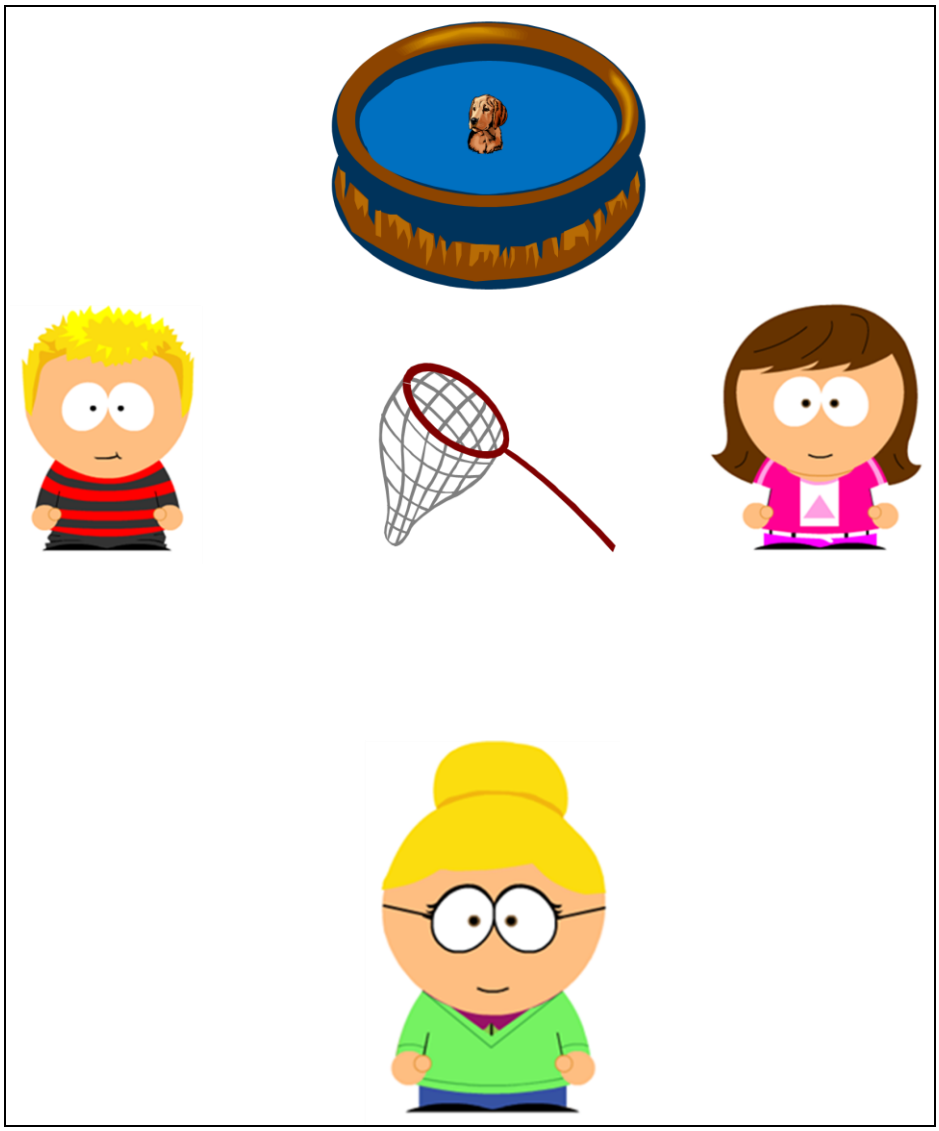
Appendix B. Example of cartoon depiction of property dispute as presented to adults in Experiments 1 & 2, Story 2

Appendix C. Example of cartoon depiction of property dispute as presented to participants in Experiments 3, Story 1

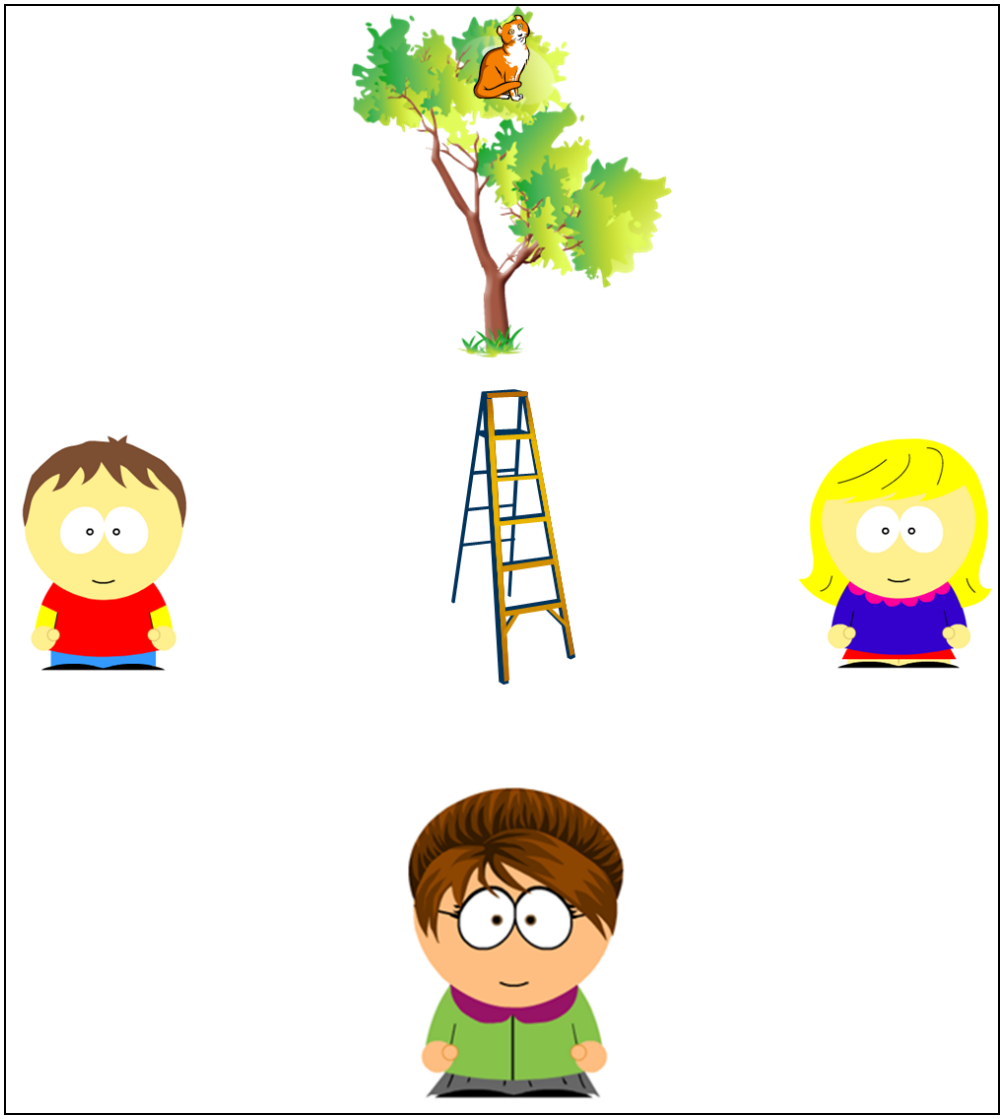
Appendix D. Example of cartoon depiction of property dispute as presented to participants in Experiment 3, Story 2



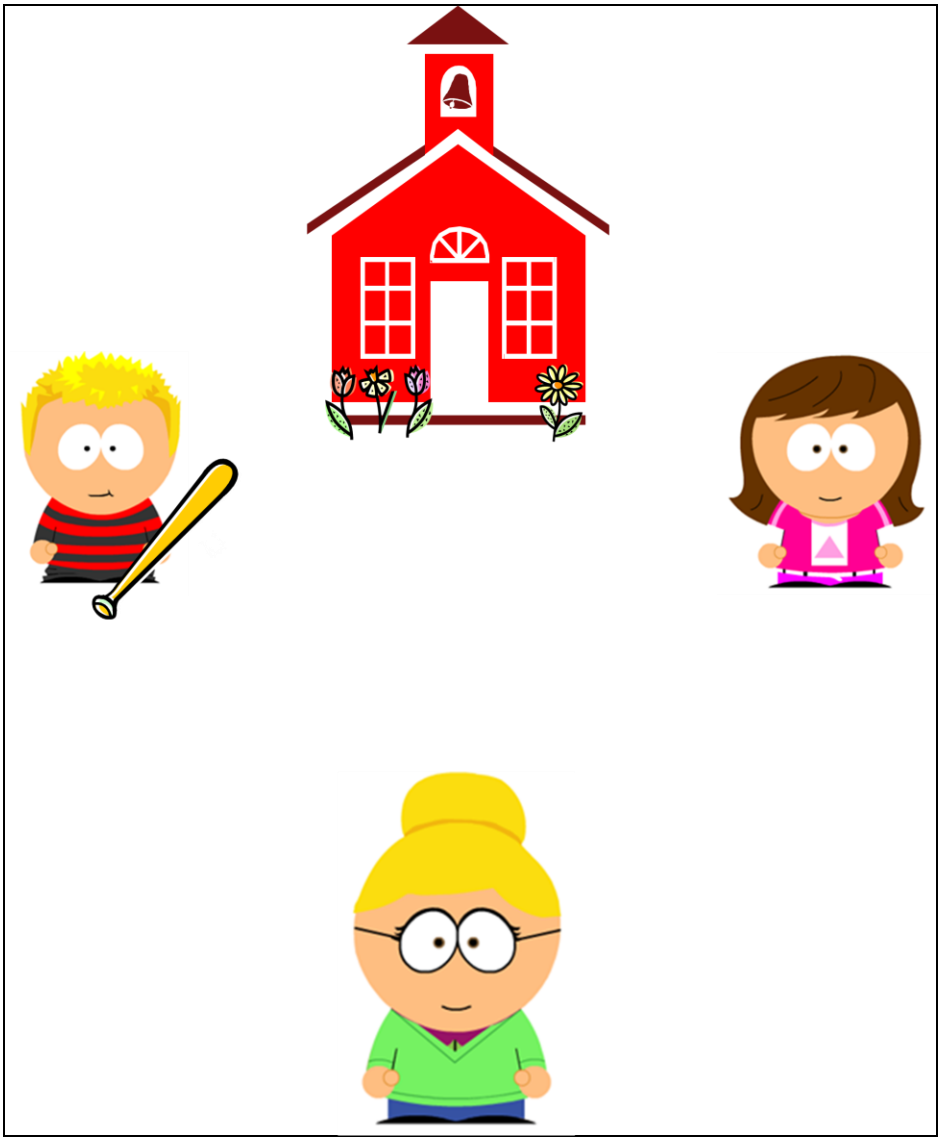
Appendix E. Example of cartoon depiction of property dispute as presented to participants in Experiment 4, Story 1



Appendix F. Example of cartoon depiction of property dispute as presented to participants in Experiment 4, Story 2



Appendix G. Example of cartoon depiction of property dispute as presented to participants in Experiment 5, Story 1



Appendix H. Example of cartoon depiction of property dispute as presented to participants in Experiment 5, Story 2

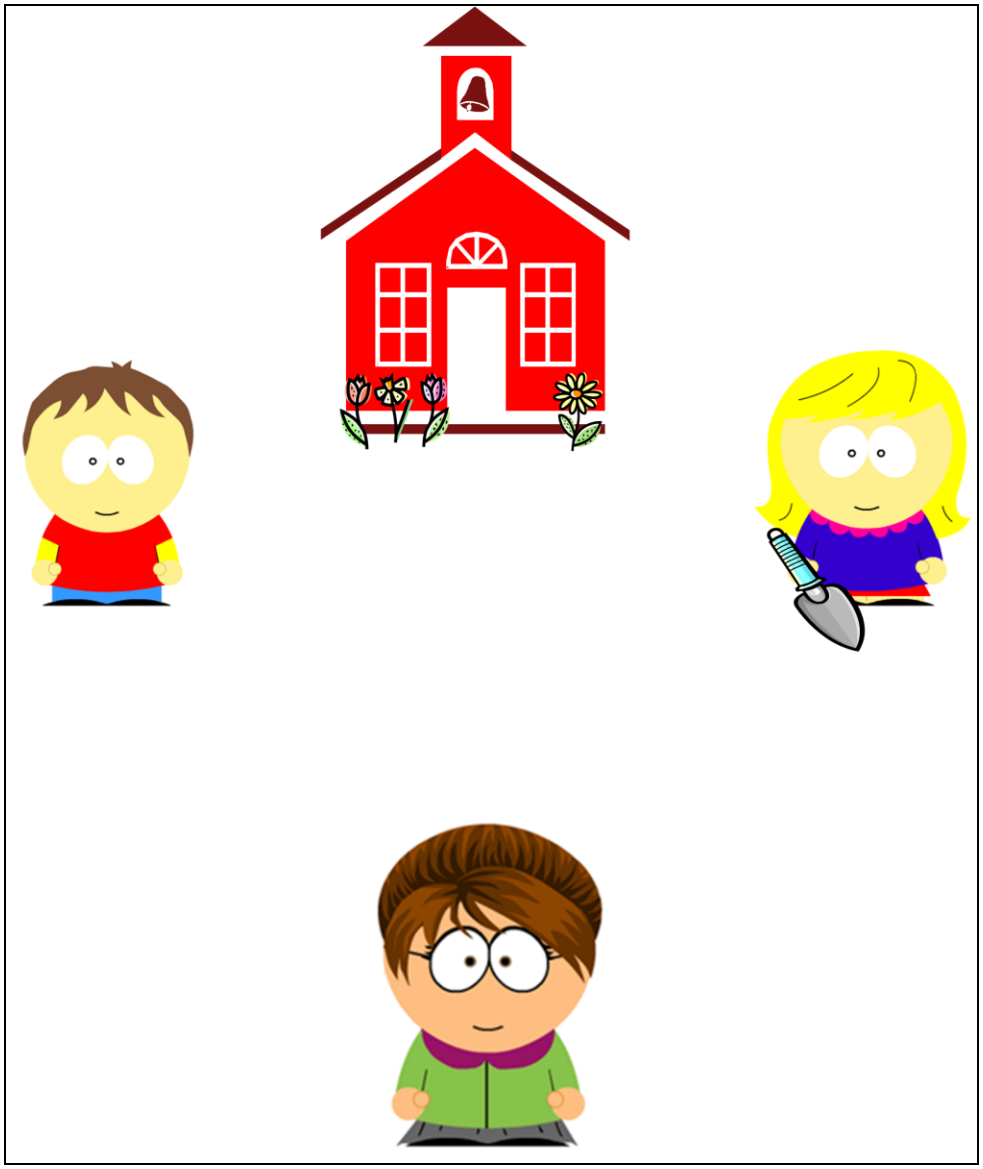


Figure Captions

Figure 1. Experiment 1: Mean number of times that the participants chose the wanter.

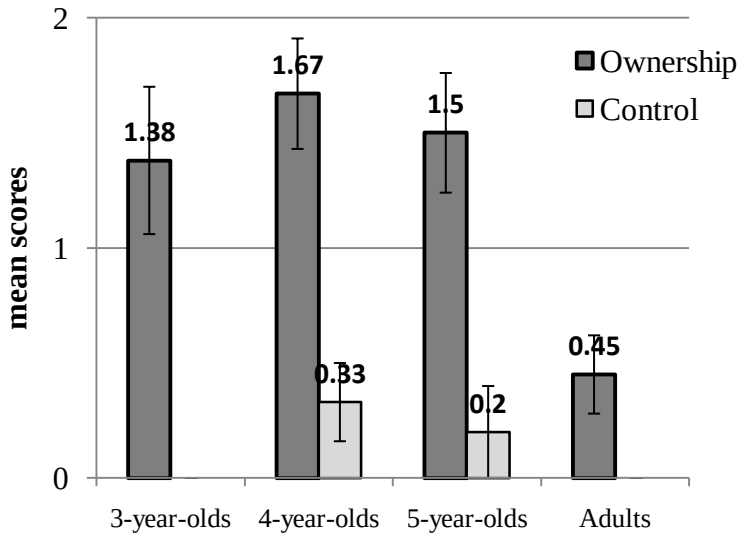
Figure 2. Experiment 2: Mean number of times that the participants chose the wanter.

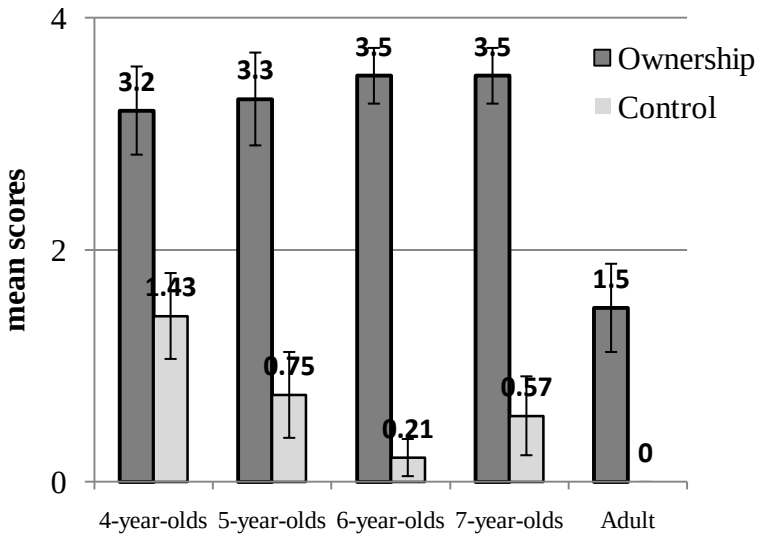
Figure 3. Experiment 2B: Mean number of times that the participants chose the wanter.

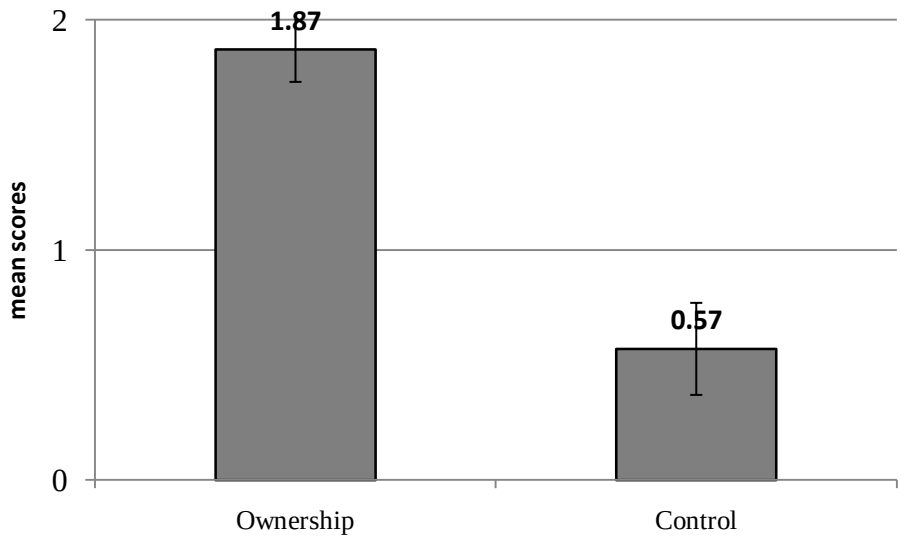
Figure 4. Experiment 3: Mean number of times that the participants chose the wanter.

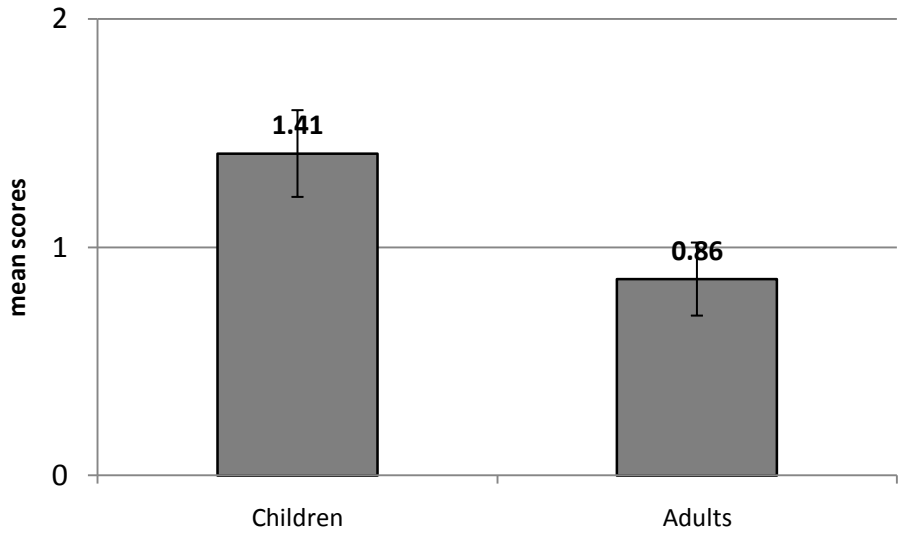
Figure 5. Experiment 4: Mean number of times that the participants chose the wanter.

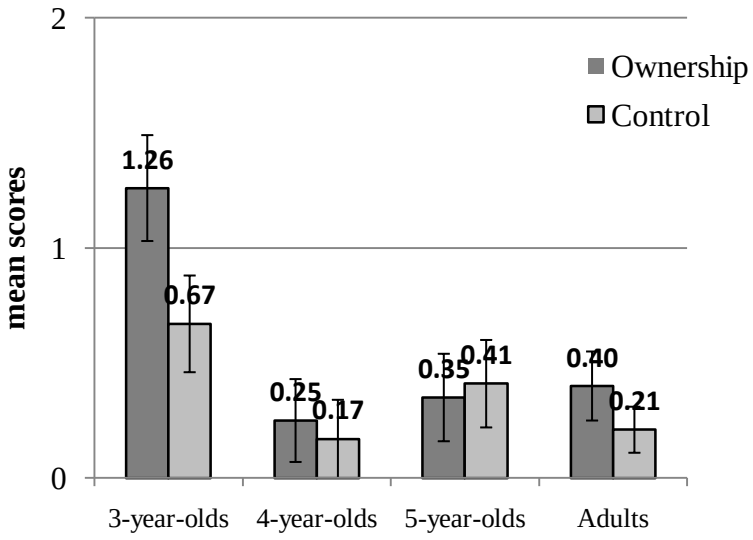
Figure 6. Experiment 5: Mean number of times that the participants chose the wanter.

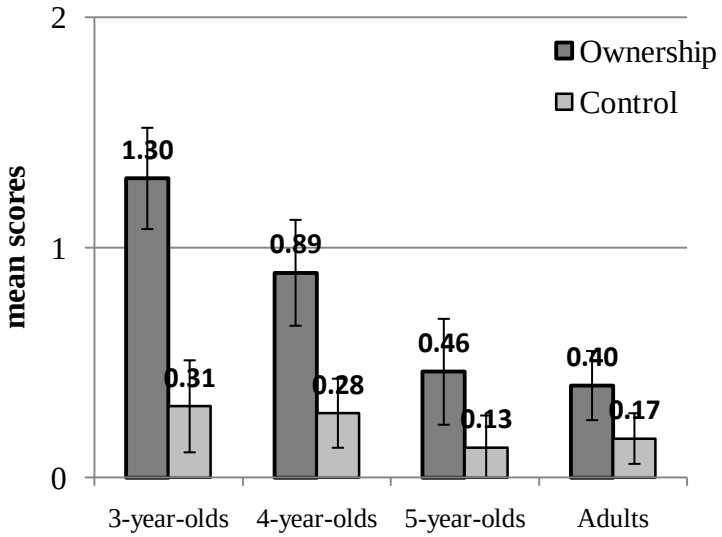

2
1
0
mean scores
1.38
1.67
0.33
1.5
0.2
0.45
Ownership
Control
3-year-olds
4-year-olds
5-year-olds
Adults


4
2
0
mean scores
3.2
1.43
3.3
0.75
3.5
0.21
3.5
0.57
1.5
0
Ownership
Control
4-year-olds
5-year-olds
6-year-olds
7-year-olds
Adult


2
1
0
mean scores
1.87
0.57
Ownership
Control


2
1
0
mean scores
1.41
0.86
Children
Adults


2
1
0
mean scores
Ownership
Control
1.26
0.67
0.25
0.17
0.35
0.41
0.40
0.21
3-year-olds
4-year-olds
5-year-olds
Adults


2
1
0
mean scores
Ownership
Control
1.30
0.31
0.89
0.28
0.46
0.13
0.40
0.17
3-year-olds
4-year-olds
5-year-olds
Adults