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First Arrival and Collective Land Ownership: How Children Reason About Who Owns the Land

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Abstract

Four survey experiments provide evidence that children (9–12 years) infer collective land ownership from first arrival. In Experiments 1 and 2, children indicated that a group owns an island relatively more than another group when having been or living on the island first. In the third experiment, it was found that first comers were considered to own the land more independently of whether the second group joined or succeeded them in living on the island. In Experiment 4, the first arrival principle to infer collective ownership was independent of the duration of stay of the first comers before being joined by the second group. Taken together, the findings provide clear evidence of the importance of first arrival for inferring collective place ownership.

Keywords: environment; intergroup relations; diversity

Introduction

Most forms of life observe some sense of territoriality and this might have evolutionary roots (Hinde, 1970; Taylor, 1988). Among humans territorial feelings and behaviours are pervasive and widespread in domestic life, and in schools, organizations, neighbourhoods, regions, and countries (Brown, Lawrence, & Robinson, 2005; Lyman & Scott, 1967). Territoriality among youth is a source of social exclusion and conflict, and one of the roots of gang behaviour (Childress, 2004; Kintrea, Bannister, Pickering, Reid, & Suzuki, 2008). In addition, there are many situations in which groups of children make claims on a particular physical place, such as when children convert a site in their play area, club or hideaway (Factor, 2004). Territorial behaviour whereby an intruder is excluded or punished for invading 'our' play area has been found in observational and experimental research among children (Factor, 2004; O'Neal, Caldwell, & Gallup, 1977; Zebian & Rochat, 2012).

Research on territoriality has demonstrated that labouring or working the land leads to perceptions and feelings of land ownership (Brown et al., 2005 Pierce, Kostova, & Dirks, 2003). What has not been considered or examined is the possibility

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that children infer land ownership from first arrival. An exception is a recent study that focused on personal rather than collective ownership and which demonstrated that older children consider first arrival an acceptable reason for claiming personal ownership of a particular place (Verkuyten, Sierksma, & Thijs, 2015). The anthropological notion of autochthony or primo-occupancy (Geschiere, 2009) suggest that first arrival determines collective land ownership with the related right to decide who may use it, and that the notion of first arrival is also used to exclude newcomers and to justify prejudice towards minority groups (Ceuppens, 2011; Geschiere, 2009; Martinovic & Verkuyten, 2013). Furthermore, research on children's and adult's first possession bias (Friendman, 2008; Friedman & Neary, 2008) suggest that first arrival might be used to determine land ownership with the related entitlements. The research on first possession bias, however, is concerned with ownership judgments about objects and not territory, and deals with scenarios in which there are individuals ('mine') rather than groups ('ours').

The present research examines whether children (9–12 years) use first arrival to infer collective place ownership. In four experiments, participants responded to an ownership question in stories in which two groups came to live on an island whereby one of the two arrived first followed by the other one. We tested the first arrival principle in comparison to the notion of equality. There is abundant evidence that already at a young age children favour equal sharing, particularly when they make judgements about third party characters (e.g., Baumard, Mascaro, & Chevallier, 2012; Fehr, Bernhard, & Rockenbach, 2008; Olson & Spelke, 2008; Peterson, Peterson, & MacDonald, 1975; Rochat et al., 2009; Smith, Blake, & Harris, 2013). Equal sharing is a key moral principle for children and typically applied when there are no other considerations involved, such as social conventions, group norms, interests, and personal benefits (see Killen & Smetena, 2006). We propose and test that first arrival is a consideration that can undermine the equality principle. Thus, when children do not use the first arrival principle to infer ownership they should indicate that both groups own the island equally, whereas there is evidence for this principle when they judge that the group arriving first on an island owns it relatively more than a group that arrives later. We further investigated whether first arrival is sufficient for establishing ownership by considering four additional conditions that might strengthen the expected ownership judgment of first comers: historical reasoning, settlement, copresence, and duration of possession.

Although from the age of two, children assume that the first person to possess an object also owns it (Blake & Harris, 2009; Friedman & Neary, 2008), it is only at around seven or eight years of age that they are able to use and weight different forms of information to assess and evaluate claims and rights (Smetena, 2006). Furthermore, compared with objects, ownership of land might be a rather abstract issue for young children for whom territorial disputes are relatively rare. Therefore, the current research focuses on late childhood (9–12 years). We had no reasons to expect meaningful age differences and, thus, expected to find similar results for the different age groups. To examine this we considered age in the analyses.

Inferring Ownership

Disputes over ownership of objects are among the most frequent and most intense conflicts, also among children. Although ownership is not an obvious property of objects but rather abstract and imperceptible, young children already recognize it.

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Preschoolers have a basic understanding of ownership of physical objects and appreciate that owners are entitled to greater control over their property than non-owners (Fasig, 2000; Kim & Kalish, 2009; Rossano, Rakoczy, & Tomasello, 2011). By the age of six or seven children's notions of ownership are also applied to ideas and intellectual property (Shaw, Li, & Olson, 2012; Yang, Shaw, Garduno, & Olson, 2014), and to places (O'Neal et al., 1977).

Children can infer ownership from seeing someone in possession of an object (Blake & Harris, 2009), from verbal statements about who owns an object (Blake, Ganea, & Harris, 2012), from observing who decides on whether others can use it (Neary, Friedman, & Burnstein, 2009), and by principles of past investment (creating or modifying an object), and ownership transfer (buying or giving) (Beggan & Brown, 1994; Blake & Harris, 2009; Kanngiesser, Gjersoe, & Hood, 2010).

In addition to these sources of information to infer ownership, children have been found to judge that an object belongs to the first person seen to possess it (Blake & Harris, 2009; Friedman & Neary, 2008). Older children and adults also argue that the first person seen to possess a previously non-owned object is its owner (Friedman, 2008; Friedman & Neary, 2008), and the same has been found for the ownership of ideas (Shaw et al., 2012). Similarly, being first at a particular place is information that children might use to infer ownership. First arrival indicates one's presence on a place before anyone else and this in itself might be an important basis for establishing ownership. Following the first arrival principle our main prediction, tested in the four experiments, is that a first arriving group is perceived to own the land more (compared with equal ownership) because it has established ownership simply by being their first. In contrast to physical artefacts like toys that are always made by someone, a group being first on a piece of land evokes considerations of native belonging and group appropriation (Geschiere, 2009). Primo-occupancy implies that the group is the original inhabitant of the land which is, therefore, part of 'them' and of what is 'theirs'.

Historical Reasoning

In the first two experiments, we further examined the conditions of a first arrival account by considering the role of historical reasoning. Children infer ownership of objects from first possession because it is informative about the past (Friedman, Neary, Defeyter, & Malcolm, 2011; Gelman, Manczak, & Noles, 2012). When in a particular situation one of two persons is observed to possess an object it is assumed that he or she already possessed it before that situation and, therefore, is considered to own it more than the other person ('starts-possessed' situation). This is different from a situation in which the object is first seen to be possessed by no one ('starts non-possessed' situation) before it is used by one person first (Friedman & Neary, 2008, Friedman, Van de Vondervoort, Defeyter, & Neary, 2013). In this case, observed first possession is not informative about prior possession before the situation and, therefore, would not be used to infer ownership. For the current study, this historical or temporal reasoning account means that in a scenario in which the island is initially not occupied, the first group that occupies it should not be considered to own it more than a second arriving group in comparison to a scenario in which the story begins with the first group already being on the island. Thus, we examined whether this historical reasoning strengthens the expected first arrival principle.

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In Experiments 1 and 2 and to further investigate the first arrival principle for establishing ownership, we did not only ask the children to indicate which of the two groups own the island more but also which one *likes* it more. This allows us to assess whether the first arrival principle is specific for ownership judgments. Furthermore, it allows us to assess whether the findings do not result from the general tendency to respond to questions by 'choosing the first' character in a story (Friedman, 2008) as a form of the spatial asymmetry bias (Maass, Pagani, & Berta, 2007).

First Arrival, Copresence, and Duration

Experiment 3 investigated ownership judgments in the situation in which the second arriving group joins the first one in living on the island. This is the equivalent of a real-world context in which immigrants come to live in the land of a native population. One could argue that being joined by another group increases the perceived ownership of the first comers. This would mean that the first comers are perceived to own the island relatively more when they remain on the island after the other group arrives.

Being joined by another group might also affect the perceived territorial identification of the first arrivers. There are two possible reasons for this. First, from a threat perspective, it can be argued that newcomers—that is, immigrants—trigger feelings of threat leading to group-based strategies involving increased identification with one's own territory and group (Gibler, Hutchinson, & Miller, 2012; Tajfel & Turner, 1979; Wagner, Christ, & Heitmeyer, 2010). Second, being joined by another group can be interpreted as indicating that one's territory is valued by others and this might lead to increased feelings of pride. A defining characteristic of group identification is the presence of emotions of pride and shame. These emotions have only reference to the self and 'if anything external to the self is capable of arousing feelings of pride or shame … these elements have been appropriated by the self and are contained within its boundary' (Rosenberg, 1979). Emotions of pride and shame are not restricted to the personal self but also exist in relation to the group self (Chakrabarti, 1992; Harth, Kessler, & Leach, 2008) and are a key aspect of children's group identification (Barrett, 2007; Rosenberg, 1979). Therefore and in addition to the ownership question, we asked the participating children in Experiment 3 which of the two groups is most proud of the island. We expected that the first comers would be considered to be relatively more proud (identify more) in the condition in which they were joined by the other group compared with the condition in which both groups lived on the island successively.

Experiment 4 was conducted to examine an additional potential cue for inferring ownership, namely duration of possession. Participating children again read a cartoon in which the first arriving group is joined by a second group but the first group's duration of prior living on the island was varied. The children received either a story in which before the arrival of the second group the first comers lived for a very short time on the island or rather for a long time. Because it suggests increased use, the expected first arrival principle might be strengthened by duration of presence. Therefore, the children might consider the first arriving group to own the island more when they have inhabited it for a long compared with a short time. Yet, Friedman (2008; Experiment 2) found that late adolescents inferred ownership of an object according to first possession and not according to longest possession.

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This would mean that the first arriving group is considered to own the land relatively more, regardless of duration of prior living on the island.

Experiment 1

Experiment 1 tested the first arrival bias by examining whether first comers are considered to own the land more than later arrivers rather than both groups owning the land equally. Because the ownership judgment is expected to be specific for first arrival, no difference between the two groups was predicted for the liking judgment. Additionally, the historical reasoning account suggests that the first arrival bias is stronger in a scenario in which past prior presence might have existed ('starts-possessed' vs. 'starts non-possessed' condition). This possibility is explored in a between-subjects experimental design.

Participants and Design

This experimental survey study was part of a larger data collection among pupils from eight primary schools in different parts of The Netherlands. A paper-and-pencil questionnaire was administered in separate class sessions and under supervision of the teacher and a research assistant. The sample of this experiment (N = 272) consisted of 54 percent girls and 46 percent boys. The children were from grades four through six and their mean age was 10.65 (*SD* = 1.01).

We used the design developed by Friedman et al. (2013) and presented the children with a picture story about an island, with the 'bowler hats' ('bolhoeden' in Dutch) and the 'conical caps' ('puntmutsen' in Dutch) as the two groups. Within each class and age group, children were randomly assigned to one of two conditions, 'starts-possessed' or 'starts non-possessed'. In the former condition, the story began with the bowler hats being the only those on the island. Subsequently the conical caps were alone on the island, and in the last picture both were on the island together, forming two separate groups rather than being mixed. The story in the 'starts non-possessed' condition was identical, except that it was preceded by a picture that showed the island in-between the two groups with the bowler hats presented on the left (see Friedman et al., 2013; see Appendix for an example).

After the story, the children were asked two questions presented in a fixed order and on the same page as the cartoon: on ownership and on liking. For testing our main hypothesis and following Beggan and Brown (1994), we did not use a forced-choice format, in which the children have to choose one of the two groups as the owners of the island, but presented more answer possibilities, including equally shared ownership. With the first question the participants were asked 'To whom does the island belong the most?', and five response categories were offered: (1) entirely to the bowler hats, (2) more to the bowler hats, (3) equally to both groups, (4) more to the conical caps, and (5) entirely to the conical caps. We recoded this scale so that a higher score (range 1–5) means higher perceived ownership of the bowler hats that were first on the island. Subsequently the children were asked to indicate who likes the island most: (1) the bowler hats, (2) both equally, and (3) the conical caps (reversed score).

Results and Discussion

We first examined whether there were age differences in the ownership and liking judgments. Analysis of variance showed that this was not the case, also not in

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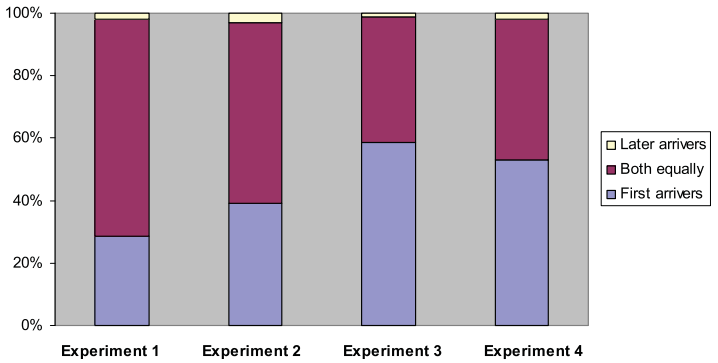

Figure 1. The Percentages of Children Indicating that the First Arriving Group Owns the Island More than the Later Arrivers, Both Own It Equally, and the Later Arrivers Own It More: for the Four Experiments.

interaction with the experimental condition ($ps > .10$). The ownership and liking judgment were not significantly associated ($r = .04$, $p = .49$) and, therefore, we examined them separately.

There is evidence for the first arrival bias when the *ownership* score exceeds the 'equality' mid-point of the scale ('both own it equally') and in the direction of the first comers owning the land more (i.e., negatively skewed). So we tested whether the overall mean score ($M = 3.29$, $SD = .58$) was significantly above the mid-point and this proved to be the case with a medium effect size (Cohen, 1988), $t(272) = 8.31$, $p < .001$, 95 percent CI [.221, .358], $d = .50$. Although 69.6 percent of the children found that the island belonged to both groups, 28.5 percent found that the island was owned more by the first group and 1.9 percent considered the later arrivers to own the island more (Figure 1). We subsequently tested whether the first arrival principle differed by experimental condition and this was not the case, $t(271) = .64$, $p = .15$, 95 percent CI [−.092, .182].

Analysis for *'liking'* indicated that the mean score ($M = 1.98$, $SD = .39$) did not differ from the scale mid-point ('both like it equally'), $t(272) = -.31$, $p = .76$, 95 percent CI [−.054, .039]. Of the participants 84.6 percent indicated that both groups equally liked the island, 7.4 percent thought that the first arrivers liked the island more, and 8 percent considered the later arrivers to like it more. There also was no significant difference for experimental condition, $t(271) = -.61$, $p = .54$, 95 percent CI [−.123, .065].

These findings demonstrate that first arrival is used to infer land ownership which is similar to the notion of autochthony that is used in many real-world contexts (Geschiere, 2009). Although most participants viewed the land as belonging to both groups, the first arriving group was considered to own the island relatively more. This is quite striking because both groups were on the island successively, and, therefore, both might have (subsequently) owned it, or the one who was last on the island might have been seen as owning it because the first group had left (Beggan & Brown, 1994). Furthermore, the findings suggest that the first arrival principle is specific because it was limited to the question regarding ownership. It did not have an effect on the liking question. This also suggests that children's answers were not affected by the spatial asymmetry bias: although the first arrivers were presented on the left of the pictures there was not a general tendency to choose them over the group presented on the right (Maass et al., 2007).

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According to the historical reasoning explanation, first possession in a particular situation provides cues about prior ownership before the situation (Friedman, 2008; Friedman et al., 2013; Gelman et al., 2012). Yet, we found in Experiment 1 no difference in ownership judgments between the two experimental conditions. The first arrivers were also considered to own the island relatively more in the 'starts non-possessed' condition. This suggests that being there first is critical for inferring collective land ownership and that historical reasoning about past possession does not play into current land ownership judgments. We examined this further in the second experiment.

Experiment 2

In Experiment 1, the two groups simply *are* on the island successively without further information. Yet, in the experiments on children's historical reasoning about first possession of physical objects the characters are not merely having the toy first but are actually using it by playing with it (Friedman, 2008; Friedman et al., 2013). Use is an important cue for inferring ownership and might provide additional hints about past possession (Beggan & Brown, 1994; Tummolini, Scorolli, & Borghi, 2013). Thus, it could be argued that a story about simply being on the island might be understood as a temporary, 'superficial' presence, and, therefore, as not being very informative about history and for testing the additional role of historical reasoning. Therefore, Experiment 2 was conducted in order to replicate the findings of Experiment 1, but with the two groups not simply *being* on the island but actually *living* on it successively which suggests land settlement and use.

Participants and Design

This experimental study was part of a different large data collection among pupils from six other primary schools in different parts of The Netherlands. Again a paper-and-pencil questionnaire was administered in separate class sessions and under supervision of the teacher and a research assistant. There were 99 children that completed the two versions that were specifically designed for this second experiment. This sample consisted of 55 percent girls and 45 percent boys. The children were again from grades four through six and the mean age was 10.68 ($SD = .89$).

We used the same design as in Experiment 1 with the same picture story and the same questions on ownership and liking. The only difference with the first experiment was that we replaced the texts under the second and third cartoon: 'the bowler hats *live* on the island first' instead of 'the bowler hats *are* on the island first', and 'then the conical caps *live* on the island', instead of 'then the conical caps *are* on the island'

Results and Discussion

There were again no age differences in the ownership and liking judgments, also not in interaction with the experimental condition ($ps > .10$). The association between the ownership and liking judgments was not significant ($r = .15$, $p = .14$).

Similar to Study 1 and in support of the first arrival bias, the overall mean score ($M = 3.39$, $SD = .60$) of *ownership* was significantly above the mid-point of the scale ('both own it equally') indicating that the first comers were perceived to own

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the land more, $t(98) = 6.49$, $p < .001$, 95 percent CI [.271, .509], $d = .65$. Of the participants 39 percent found that the island was owned by the first group and 58 percent found that the island belonged to both groups (Figure 1). Also similar to Study 1, it turned out that the children's perception of ownership did not differ by experimental condition, $t(98) = .49$, $p = .62$, 95 percent CI [−.179, .299].

In contrast to the ownership judgment, the analysis for *'liking'* indicated that the mean score ($M = 1.96$, $SD = .41$) did not differ from the scale mid-point ('both like it equally'), $t(98) = -1.00$, $p = .32$, 95 percent CI [−.121, .039]. Of the participants 83.8 percent indicated that both groups equally liked the island, 6.1 percent thought that the first arrivers liked the island more, and 10.1 percent considered the later arrivers as liking the land more. Furthermore, there was again no significant difference for experimental condition, $t(87.56) = -1.51$, $p = .14$, 95 percent CI [−.279, .039].

Similar to Experiment 1 these findings show that first arrival is used to infer ownership. Although both groups were present on the island successively, the first arriving group was considered to own the island relatively more. Furthermore, the first arrival principle was again found to be specific because the first comers were not considered to like the island more. There was no evidence for the additional role of historical reasoning in inferring ownership that has been found with the first possession of physical objects (Friedman, 2008; Friedman et al., 2013). The group that lived on the island first was considered to own the island relatively more also in the 'starts non-possessed' condition. This indicates that being there first is critical for inferring collective land ownership. The findings further suggests that compared with simply *being* there first, having settled (*living*) on the island does strengthen the perceived ownership of the first comers: in Experiment 2 a higher percentage of children considered the first arrivers to own the land compared with Experiment 1 (see Figure 1).

Experiment 3

In Experiment 3, we examined whether being joined by a second group leads to higher ownership and pride judgments of the first comers. A situation in which another group comes to live in the same place as 'us' typically raises questions of group identities and territorial belonging (Martinovic & Verkuyten, 2013; Wagner et al., 2010). Furthermore, feeling of pride is a defining characteristic of identification, both at the personal and the group level and particularly among children (Barrett, 2007; Rosenberg, 1979). We compared the scenario in which the first group is joined by the second one with the scenario in which both groups live at the island successively. According to the first arrival principle being there first is a sufficient reason for ownership and, therefore, perceived relative ownership of the first comers should be present in both conditions. Yet, considering the territorial and group identities that are at stake, the perceived ownership and pride of the first arriving group might be higher in the 'joined' compared with the 'successive' scenario.

Participants and Design

This experimental study was part of the same large data collection as Experiment 2 but with another random group of children completing the two versions that were

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designed for this third experiment (N = 147). This sample consisted of 44.7 percent girls and 55.3 percent boys, and the mean age was 10.58 ($SD = .94$).

We used the same picture story about the two groups living on the island. One condition was exactly the same as in Experiment 2 and presented the two groups as living successively on the island. In the other ('joined') condition, the third picture showed both groups living on the island together and the text was 'then the conical hats also come to live on the island'. The same ownership question was asked and instead of the liking question the children were asked to indicate 'who is most proud of the island': (1) the bowler hats, (2) both equally, and (3) the conical caps (reversed score).

Results and Discussion

Analysis of variance showed no significant difference for age and also no interaction effect between age and the experimental condition ($ps > .10$). Supporting the first arrival bias, the overall mean score was again significantly above the scale mid-point indicating a large effect size (Cohen, 1988) and showing that the first comers were considered to own the land more, ($M = 3.62$, $SD = .66$), $t(148) = 11.39$, $p < .001$, 95 percent CI [.514, .730], $d = .94$. Of the children, a majority (58.8 percent) indicated that the island belonged more to the first arriving group, and 39.9 percent found that the island belonged to both groups (Figure 1). The effect of experimental condition on the judgment of ownership was not significant, $t(146) = -.56$, $p = .58$, 95 percent CI [−.279, .156]. Thus, the first comers were not perceived to own the land more when the second group joined them on the island compared with when the second group succeeded them.

For the *pride* question the overall mean score ($M = 2.12$, $SD = .54$) differed from the scale mid-point ('both equally proud'), $t(149) = 2.58$, $p = .011$. 95 percent CI [.027, .204], $d = .21$. In addition, there was an effect of experimental condition, $t(146) = 4.09$, $p < .001$, 95 percent CI [.181, .518], $d = .68$. The first group was considered to be more proud on the island when the other group joined them compared with when the other group succeeded them, ($M = 2.28$, $SD = .50$, and $M = 1.93$, $SD = .53$, respectively). In the 'joined' condition, 30 percent of the children thought that the first group was more proud compared with the latter with 67.5 percent indicating equal pride. In the other condition, these percentages were 10.4 percent and 71.6 percent, respectively; χ^2 (2,147) = 15.79, $p < .001$.

These findings demonstrate that a first arriving group was considered to be more proud of the island when another group joined them in living on the island, compared with the situation in which the two groups lived on the island successively. Yet, the perceived ownership of the first comers did not differ between the two conditions. Thus, being joined by another group was found to trigger perceptions of territorial belonging and group identification but did not strengthen the first arrival bias. Overall, however, the percentage of children that considered the first arrivers to own the island was higher than in Experiments 1 and 2 (see Figure 1). The reason for this is not fully clear but it suggests that being joined by another group more strongly can raise territory ownership concerns.

Experiment 4

Experiment 4 was conducted to further examine the situation in which a second group joins a first one by considering duration of presence as an additional potential

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cue for inferring ownership. Children received a story in which the second group joined the first one that had previously been living on the island either for a short time or for a long time. In addition to the first arrival principle children might base ownership and pride judgments on duration of presence and, therefore, consider the first arriving group to own the island more and to be more proud of it when they inhabited the island for a long compared with a short time. Thus, when duration of presence strengthens the first arrival bias, children should attribute relatively higher ownership and pride to the first arriving group.

Participants and Design

Data collection was part of the same survey as the previous two experiments and involved a random group of children that had not participated in these experiments. The children completed the two versions that were specifically designed for this fourth experiment (N = 149). This sample consisted of 51.7 percent girls and 48.3 percent boys and the mean age was 10.58 ($SD = 1.05$).

The design was similar to the previous experiment but in both conditions the bowler hats remained on the island and were in the third picture joined by the conical caps. In the 'short time' condition the text under the second picture was 'the bowler hats live first on the island but only for a short time'. In the 'long time' condition the text was 'the bowler hats live first on the island and already a long time'. The same ownership and pride questions as in Experiment 3 were used. In preparing the questionnaires, one version was accidently replaced by another one which resulted in unequal sample sizes for the two versions (N = 49 for 'short time', and N = 100 for 'long time').

Results and Discussion

There were again no main or interaction effects for age ($ps > .10$). In support of the first arrival principle, the overall mean score ($M = 3.57$, $SD = .67$) for *ownership* was again significantly and substantially (large effect size) above the mid-point of the scale indicating that the children considered the bowler hats to own the island more than the conical caps, $t(149) = 10.47$, $p < .001$, 95 percent CI [.462, .677], $d = .85$. Of the children 53 percent found that the island was owned by the first arriving group, and 45 percent found that the island belonged to both groups (Figure 1). We further examined whether the two experimental conditions differed from each other and this was not the case: the children in the two conditions did not differ in their judgment of ownership, $t(148) = 1.56$, $p = .12$, 95 percent CI [−.405, .047].

Similar to Experiment 3, the answers to the *pride* question indicated that the overall mean score ($M = 2.41$, $SD = .55$) differed from the scale mid-point ('both equally proud'), $t(149) = 9.15$, $p < .001$. 95 percent CI [.319, .494], $d = .75$. Of the participants 43.3 percent indicated that the first arriving group was more proud on the island than the second group and 54 percent thought that both groups were equally proud. The scores for the pride question did not differ between the two experimental conditions, $t(148) = -.23$, $p = .82$, 95 percent CI [−.208, .164].

These findings again demonstrate that first arrival is used to infer land ownership. Furthermore, a longer presence did not strengthen the first comers' perceived land ownership and perceived identification with the island. When the first arriving group was only a short time on the island before the second group arrived, the first

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group was still perceived to own the land relatively more and to be more proud of it, and to a similar degree as when they had been living on the island for a long time. These findings are similar to Friedman (2008; Experiment 2) who found that late adolescents infer ownership of an object according to first possession and not according to longest possession.

Discussion

Most forms of life observe some sense of territoriality and disputes over territorial ownership are among the most frequent and intense conflicts (Toft, 2014). Territorial feelings and behaviors are pervasive and widespread in many situations, also in children's lives at home, in school and in their neighborhood (Factor, 2004; O'Neal et al., 1977). Furthermore, the belief that a place belongs to those who arrived first is widespread and often self-evidently used to exclude outsiders and newcomers (Ceuppens, 2011; Geschiere, 2009; Martinovic & Verkuyten, 2013). Yet, research has paid little systematic attention to these issues and to our knowledge the current study is the first experimental research that has examined children's reasoning about collective land ownership (but see Verkuyten et al., 2015; Zebian & Rochat, 2012).

In four experiments, we examined whether older children judge that the first group to arrive on an island owns it more than a group that arrives later, and whether historical reasoning, past investment, copresence, and duration of presence are additional consideration that strengthen the first arrival principle. The findings demonstrate that first arrival *per se* was used to infer collective place ownership in all four experiments. Thus, there was clear and substantial evidence (medium to large effect sizes) that children believe that a group owns a particular place relatively more when that group has arrived first.

In Experiments 1 and 2, we further examined whether children infer collective land ownership from a historical reasoning about non-observed past possession which has been demonstrated in studies on children's ownership judgments of physical objects (Friedman et al., 2011, 2013). Using the same experimental design ('starts-first' vs. 'starts non-possessed') as these studies, we found in both experiments no evidence for the historical reasoning explanation. The first arrivers were always considered to own the land more, also in the 'starts non-possessed' condition. This suggests that being first on the island is considered a sufficient reason for acquiring ownership: simply being first at a non-owned place establishes ownership.

The findings in Experiments 1 and 2 further suggest that first arrival is a basis for inferring ownership but not for perceived liking. The group that was first on the island was considered to own the land more but this did not imply that they were seen to like it more. This indicates that the first arrival bias is specific for ownership. It was not based on liking and, therefore, it is unlikely that the first arrival bias is due to the spatial asymmetry bias: the general tendency to choose the group that is placed left in the cartoon (Maass, et al. 2007). Furthermore, the low, non-significant associations between the ownership and liking questions suggest that it is unlikely that the fixed order in which the questions were presented did affect the findings.

The results from Experiments 3 and 4 further suggest that first comers are not only seen as owning the land more but also as having it appropriated more to their sense of group self (Pierce & Jussila, 2010). In these two experiments the first arriving group was considered to feel more proud of the place which suggests that the

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children thought that the first comers identified more strongly with the island than the later arrivers. Additionally, in Experiment 3 it turned out that copresence increased the first comers perceived identification with the land, but not their ownership. This reflects the real-world context of natives and immigrants that typically tends to elicit considerations of group identity and territorial belonging (Wagner et al., 2010). The arrival of newcomers can increase perceptions of pride because of the assumed identity threat but also because the land is valued to the extent that immigrants want to live there. Future studies should examine which of these two explanations is more likely.

We have tried to make one of the first contributions to the understanding of children's reasoning about land ownership and there are different other possible directions for future research. First, it might be useful for future research to systematically examine the first arrival principle when there is competing information available for inferring ownership. For example, actual use of the land might be important as is suggested by the higher percentage of perceived ownership of first arrivers in Experiment 2 compared with Experiment 1. In this respect, the role of effort and investment in the land of the later arriving group might be important, for example, as a justification why settlers own the land more than indigenous populations. First arrival might be disregarded when the later arrivers make the land prosper or when the first comers intent to abandon the place (Beggan & Brown, 1994; Zebian & Rochat, 2012). There will be many situations in which place ownership inferences are not based on the first arrival assumption alone, or at all. Therefore, it is important to examine the first arrival principle in combination and competition with other considerations.

Second, we have examined inferred place ownership in the case of two groups. However, there are many situations in which individuals make claims on a particular physical place, such as when children convert a place in their home or outside in their private playing area (Factor, 2004). Having a personal sense of ownership ('mine') might differ from a sense of collective ownership ('ours') (Pierce & Jussila, 2010). Children might reason differently about personal ownership and collective ownership and the related rights. Hence, it could be examined whether the present findings about collective land ownership also apply to situations in which a child arrives first at a particular place followed later by another child.

Third, concern with ownership is already evident in young children but the evidence relates primarily to ownership of objects and, therefore, it is unclear whether young children think that land and places more generally can be owned, how they reason about place ownership and how this develops. We focused on older children and future studies could examine, for example, at what age young children develop an understanding that land, or a particular place, can be owned and the type of information that they use to infer place ownership and the related entitlements. Future studies could also examine children's reasoning about territory ownership in contexts of territorial disputes, such as in the Middle East (Zebian & Rochat, 2012).

In conclusion, the present study provides evidence for a first arrival bias in children's reasoning about collective place ownership. In contrast to previous research that focused on ownership of human-made objects (Friedman et al., 2013; Gelman et al., 2012), we showed that being there first is a relevant consideration for deciding who owns the land and who identifies with it. This corresponds to research that has demonstrated that groups use notions of autochthony to (re-)claim land and rights in territorial disputes (Ceuppens & Geschiere, 2005; Geschiere,

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2009). First-comers to a new territory have historically claimed ownership of the respective territory and the belief of 'we were here first' tends to trigger self-evident notions of ownership and entitlements that lead to exclusionary behaviour and negative feelings towards outsiders and newcomers (Martinovic & Verkuyten, 2013). For children being there first can be an acceptable reason for claiming ownership of a place and this claim can have exclusionary social consequences. Children tend to exclude or punish an intruder for invading their play area (Factor, 2004; O'Neal et al., 1977) and having arrived first at a piece of land can form a basis for personal ownership rights whereby the owner is entitled to decide who can be at the land and use it (Verkuyten et al. 2015). We have tried to make one of the first contributions to investigate children's reasoning about collective place ownership, and we hope that our research provides useful guidelines for many other questions that can be asked and investigated in relation to children's understanding of 'who owns a particular place'.

References

Barrett, M. (2007). *Children's knowledge, beliefs and feelings about nations and national groups*. Hove: Psychology Press.

Baumard, N., Mascaro, O., & Chevallier, C. (2012). Preschoolers are able to take merit into account when distributing goods. *Developmental Psychology*, *48*, 492–498

Beggan, J. K., & Brown, E. M. (1994). Association as a psychological justification for ownership. *Journal of Social Psychology*, *128*, 365–380.

Blake, P. R., Ganea, P. A., & Harris, P. L. (2012). Possession is not always the law: With age, preschoolers increasingly use verbal information to identity who owns what. *Journal of Experimental Child Psychology*, *113*, 259–272.

Blake, P. R., & Harris, P. L. (2009). Children's understanding of ownership transfers. *Cognitive Development*, *24*, 133–145.

Brown, G., Lawrence, T. B., & Robinson, S. L. (2005). Territoriality in organizations. *Academy of Management Review*, *30*, 577–594.

Ceuppens, B. (2011). From 'the Europe of the regions' to 'the European Champion League': The electoral appeal of populist autochthony discourses in Flanders. *Social Anthropology*, *19*, 159–174.

Ceuppens, B., & Geschiere, P. (2005). Autochthony: Local or global? New modes in the struggle over citizenship and belonging in Africa and Europe. *Annual Review of Anthropology*, *34*, 385–407.

Chakrabarti, A. (1992). Individual and collective pride. *American Philosophical Quarterly*, *29*, 35–44.

Childress, H. (2004). Teenagers, territory and the appropriation of space. *Childhood*, *11*, 195–205.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Factor, J. (2004). Tree stumps, manhole covers and rubbish tins: The invisible play-lines of a primary school playground. *Childhood*, *11*, 142–154.

Fasig, L. G. (2000). Toddlers' understanding of ownership: Implications for self-concept development. *Social Development*, *9*, 370–382.

Fehr, E., Bernard, H., & Rockenbach, B. (2008). Egalitarianism in children. *Nature*, *454*, 1079–1083.

Friedman, O. (2008). First possession: An assumption guiding inferences about who owns what. *Psychonomic Bulletin and Review*, *15*, 290–295.

Friedman, O., & Neary, K. R. (2008). Determining who owns what: Do children infer ownership from first possession? *Cognition*, *107*, 829–849.

Friedman, O., Neary, K. R., Defeyter, M. A., & Malcolm, S. L. (2011), Ownership and object history. *New Directions for Child and Adolescent Development*, *132*, 79–89.

Friedman, O., Van de Vondervoort, J. W., Defeyter, M. A., & Neary, K. R. (2013). First possession, history and young children's ownership judgments. *Child Development*, *84*, 1519–1525.

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Gelman, S. A., Manczak, E. M., & Noles, N. S. (2012). The non-obvious basis of ownership: Preschool children trace the history and value of owned objects. *Child Development*, *83*, 1732–1747.
Geschiere, P. (2009). *The perils of belonging: Autochthony, citizenship, and exclusion in Africa and Europe*. Chicago: University of Chicago Press.
Gibler, D. M., Hutchinson, M. L., & Miller, S. V. (2012). Individual identity attachments and international conflict: The importance of territorial threat. *Comparative Political Studies*, *45*, 1655–1683.
Harth, N. S., Kessler, T., & Leach, C. (2008). Advantaged group's emotional reactions to intergroup inequality: The dynamics of pride, guilt and sympathy. *Personality and Social Psychology Bulletin*, *34*, 115–129.
Hinde, R. A. (1970). *Animal behavior*. New York: McGraw-Hill.
Kanngiesser, P., Gjersoe, N. L., & Hood, B. M. (2010). Transfer of property ownership following creative labour in preschool children and adults. *Psychological Science*, *21*, 1236–1241.
Killen, M., & Smetena, J. (Eds.). (2006). *Handbook of moral development*. Mahwah, NJ: Erlbaum.
Kim, S., & Kalish, C. W. (2009). Children's ascriptions of property rights with changes of ownership. *Cognitive Development*, *24*, 322–336.
Kintrea, K., Bannister, J., Pickering, J., Reid, M., & Suzuki, N. (2008). *Young people and territoriality in British cities*. York, UK: Joseph Rowntree Foundation.
Lyman, S. M., & Scott, M. B. (1967). Territoriality: A neglected sociological dimension. *Social Problems*, *15*, 236–249.
Maass, A., Pagani, D., & Berta, E. (2007). How beautiful is the goal and how violent is the fistfight? Spatial bias in the interpretation of human behaviour. *Social Cognition*, *25*, 833–852.
Martinovic, B., & Verkuyten, M. (2013). 'We were here first, so we determine the rules of the game': Autochthony and prejudice toward outgroups. *European Journal of Social Psychology*, *43*, 637–647.
Neary, K. R., Friedman, O., & Burnstein, C. L. (2009). Preschoolers infer ownership from 'control of permission'. *Developmental Psychology*, *45*, 873–876.
Olson, K. R., & Spelke, E. S. (2008). Foundations of cooperation in young children. *Cognition*, *108*, 222–231.
O'Neal, E., Caldwell, C., & Gallup, G. G. (1977). Territorial invasion and aggression in young children. *Environmental Psychology and Nonverbal Behavior*, *2*, 14–25.
Peterson, C., Peterson, J., & McDonald, N. (1975). Factors affecting reward allocation by preschool children. *Child Development*, *46*, 942–947.
Pierce, J. L., & Jussila, I. (2010). Group psychological ownership within the work and organizational context: Construct introduction and elaboration. *Journal of Organizational Behavior*, *31*, 810–834.
Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology*, *7*, 84–107.
Rochat, P., Dias, M. D. G., Liping G., Broesch T., Passos-Ferreira C., Winning, A., et al. (2009). Fairness in distributive justice by 3- and 5-year-olds across 7 cultures. *Journal of Cross Cultural Psychology*, *40*, 416–442.
Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
Rossano, F., Rakoczy, H., & Tomasello, M. (2011). Young children's understanding of violations of property rights. *Cognition*, *121*, 219–227.
Shaw, A., Li, V., & Olson, K. R. (2012). Children apply principles of physical ownership to ideas. *Cognitive Science*, *36*, 1383–1403.
Smetana, J. G. (2006). Social cognitive domain theory: Consistencies and variations in children's moral and social judgments. In M. Killen & J. G. Smetana (Eds.), *Handbook of moral development* (pp. 119–154). Mahwah, NJ: Erlbaum.
Smith, C. E., Blake, P. R., & Harris, P. L. (2013). I should but I won't: Why young children endorse norms of fair sharing but do not follow them. *PLoS ONE*, *8*: e59510. doi: 10.1371/journal.pone.0059510
Snare, F. (1972). The concept of property. *American Philosophical Quarterly*, *9*, 200–206.
Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.

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Taylor, R. B. (1988). *Human territorial functioning: An empirical, evolutionary perspective on individual and small group territorial cognitions, behaviors, and consequences*. Cambridge: Cambridge University Press.
Toft, M. D. (2014). Territory and war. *Journal of Peace Research*, *51*, 185–198.
Tummolini, L., Scorolli, C., & Borghi, A. M. (2013). Disentagling the sense of ownership from the sense of fairness. *Behavioral and Brain Sciences*, *36*, 101–102.
Verkuyten, M., Sierksma, J., & Thijs, J. (2015). First arrival and owning the land: How children reason about ownership of territory. *Journal of Environmental Psychology*, *41*, 58–64.
Wagner, U., Christ, O., & Heitmeyer, W. (2010). Anti-immigrant bias. In J. F. Dovidio, M. Hewstone, P. Glick, & V. M. Esses (Eds.), *The Sage handbook of prejudice, stereotyping and discrimination* (pp. 361–376). London: Sage.
Yang, F., Shaw, A., Garduno, E., & Olson, K. R. (2014). No one likes a copy-cat: A cross-cultural investigation of children's response to plagiarism. *Journal of Experimental Child Psychology*, *121*, 111–119.
Zebian, S., & Rochat, P. (2012). Judgment of land ownership by young refugee Palestinian and U.S. children. *International Journal of Behavioral Development*, *36*, 449–456.

Appendix : The 'Starts Non-possessed' Condition in Experiment 1

1

1. This is a story about an island

2

2. The bowler hats are first on the island

3

3. Then the conical caps are on the island

4

4. Now I have a question for you: who owns the island most?

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