

OBSERVATION THROUGH TWO LENSES: A GLIMPSE INTO YURAKARE CHILDREN'S COOPERATIVE DYNAMICS

Natalia Siekiera *, Arkadiusz Bialek 

Institute of Psychology, Jagiellonian University, Kraków, Poland

*natalia.siekiera-guest@uj.edu.pl

ABSTRACT

This study examines children's cooperation within the Yurakare community of Bolivia, focusing on joint action among three children. It employs a two-time scale approach, analyzing macro-level cultural activities over the course of weeks and micro-level interactions on the level of seconds. Findings reveal that cooperation among children is characterized by minimal verbal communication and a significant reliance on nonverbal channels in facilitating collaboration. Leadership behaviors, exhibited by older children, complement group dynamics. The study advocates for a processual perspective on child development, emphasizing the importance of observational methods and descriptive analysis.

Keywords: cooperation, indigenous children, focal-follow, cultural development, communication, joint action

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INTRODUCTION

In the field of human development, it is essential to balance adherence to scientific standards of statistical rigor with an openness to unique contexts, such as observations involving small sample sizes which nevertheless reveal important processes (Billig, 2019; Tamis-LeMonda, 2023). We advocate a process-oriented approach, emphasizing, like Vygotsky (1978) and Rogoff (2003), the importance of community organization over years and everyday interactions over days or minutes in shaping and describing child development. This case study examines collaboration among three Indigenous children in their natural environment using a two-time scale approach to capture both macro-level cultural patterns and micro-level interactions.

Child development within living cultural structures: A theoretical approach

This research draws on Rogoff's theoretical framework and Fogel's (1993) ideas on communication, emphasizing the importance of contextualizing child development within cultural settings and observing children's participation in everyday activities to understand how they mature within their communities (Rogoff, 2003; Rogoff et al., 2018). Rogoff highlights how children acquire skills through active participation in their cultures. Many Indigenous cultures live according to the Learning by Observing and Pitching In (LOPI) model, which emphasizes children's active, non-disruptive participation in meaningful activities and collaborative engagement among mixed-age community members (Rogoff & Mejía-Arauz, 2022). Numerous studies have validated this framework's relevance in understanding Indigenous children's participation in community life (i.e. Alcalá et al., 2014; López et al., 2012; Martínez-Pérez, 2015). For this paper, we emphasize the LOPI model's collaborative dynamic, where group members integrate their ideas at a shared pace and adjust roles as needed. However, collaboration doesn't necessarily entail equal contribution; individuals with greater expertise and commitment, regardless of age or social position, are more likely to lead or rather, guide the group's direction. (Facet 3 of the model, see Rogoff & Mejía-Arauz, 2022).

We draw on Process Relational (PR) and Dynamic Systems (DS) theories, which favor a holistic view of development through co-action and participation over mechanistic models (Fogel, 1993; Overton, 2015). In this framework, culture is seen as a process through which humans form meaningful interactions, such as cooperation. Thus, children's development within a culture is an active phenomenon. Observing children in natural settings provides valuable insights into these dynamics of cultural interaction, particularly in early development. Additionally, much psychological research is Observation and Description Deprived (ODD), relying on experimental and artificial situations for their participants (Rai & Fiske, 2010). To truly understand human behavior, researchers must prioritize collecting descriptive data from real-world contexts, similar to ethological methods used in animal studies.

Understanding cooperation in early social life through a cultural lens

Cooperation, a fundamental aspect of social life, involves participating in each other's sense-making. It contributes to the maintenance and evolution of cultural meanings and practices (Boyd & Richerson, 2005). Understanding the development of cooperation from a cultural perspective is crucial for two reasons. First, culture aids effective adaptation and is closely linked to cooperative abilities (Boyd, 2017). Second, at an evolutionary level, cultural learning leads to social norms and routines that vary across groups and influence cooperation practices and success (Henrich & Muthukrishna, 2021).

Developmental psychology perspectives deepen this understanding by exploring cooperation through shared intentionality and embodied actions in communal settings, with

joint attention, communication, and mutual adaptation playing key roles in collaboration development (Tollefsen, 2005). Children's participation in social routines varies significantly across cultures, shaping the development of social skills, communication patterns, and cooperative behaviors. Communication skills, such as verbal discourse and adaptive gestures, are equally crucial, although cultural norms influence the modes of collaborative communication in children (e.g., Correa-Chávez et al., 2016; Correa-Chávez & Mejía-Arauz, 2024).

Studies in Indigenous communities of the Americas, which align with the LOPI model of community organization (Rogoff & Mejía-Arauz, 2022), shed light on collaboration as an embedded environmental action among community members. Research indicates that Mexican heritage children often learn and participate in tasks collectively, placing emphasis on observation and shared involvement (Mejía-Arauz et al., 2007). Similarly, studies of Mayan families and families of Indigenous Mexican heritage in the US show that their collaboration relies heavily on attention to subtle cues such as posture, gaze and timing, with nonverbal communication playing a central role in enabling smooth coordination without the need for verbal suggestions or instructions (Alcalá et al., 2018; Dayton et al., 2022). Also in Mayan children from Tzotzil-speaking communities in Mexico, non-verbal cues are key to collaboration, with cooperation often occurring without verbal directives, relying instead on attentiveness to shared actions (de León, 2015). These studies show that Indigenous collaboration is culturally deeply rooted in the non-verbal, context-sensitive nature of interaction.

Understanding the development of cooperation requires examining both specific behaviors and broader cultural contexts. At the micro-level, cooperation unfolds in brief episodes, lasting seconds or minutes, where distinct patterns, such as exchanging a ball or constructing a model, emerge (Mejía-Arauz et al., 2018). Over weeks or months, these interactions stabilize within cultural frameworks, shaped by social routines, beliefs, and spatial-temporal contexts. This macro perspective helps us view culture as a *way of life*, encompassing norms and shared beliefs (Dayton & Rogoff, 2013). Additionally, studying micro-level interactions in early social development provides valuable insights into broader cultural patterns.

Aim of the study

This study explores cultural aspects of communication, joint attention, and activities within the Yurakare community in Bolivia. Focusing on natural cooperative interactions among a triad of children, the study takes a descriptive approach.

The methodology uses two-time scales: a broader perspective (macro-scale) related to the cultural space of child development, and a microanalysis of selected cooperative behaviors within natural settings aimed to capture nuanced interactions.

METHODS

Participants

This case study is based on fieldwork conducted from June to August in both 2021 and 2022 in the Yurakare community of Ichilo River. The Yurakare, original inhabitants of the southern Bolivian Amazon, live in 'Big Family' units consisting of grandparents, their children, and grandchildren. Economic activities include selling fish, guiding anglers, and picking bananas. Accessible only by boat, these villages prioritize community endeavors, with a social structure integrating people of all ages. Children actively participate from an early age, engaging in daily tasks like fishing, fieldwork, and household chores. Education, available for ages 6 to 16, is either in the village or a nearby one accessible by walking. However, children grow up

surrounded by siblings, cousins, and adults, participating in adult-oriented tasks. Even if attending school, they contribute to community tasks, prioritising community needs over school obligations. Cooperation is crucial, evident in joint efforts for fishing, household activities, and monthly village meetings for collective decisions. Both children and adults conversed in Spanish, as did the researcher.

In our macro-analysis the first author and an assistant observed via sampling method 22 children aged 2–7 ($M = 49.71$ months, $SD = 17.16$; $N=13$ girls). In our microanalysis we examined a triad of two girls (2.5 and 5 years) and a boy (3.5 years).

Observation methods for a macro-level

The coding scheme for the observation was based on previous cultural studies of children's daily activities (e.g., Gaskins, 2000) and our 2021 pilot study. We used BORIS software (Friard & Gamba, 2016) on a tablet with a preloaded ethogram to conduct live observations (Table 1). When activities overlapped, the dominant one was coded. For instance, a lively conversation during manipulative play with a knife was coded as communication. This article briefly presents findings on children's collaborative skills, social networks, and activities aligned with the study's aim.

Table 1
Macro-Level Categories of Activities

Category	Definition
Play	Engagement in activity simply for fun or for its own sake. Types: a) Manipulative: play with toys or objects/substances b) Large motor: play without objects, e.g., running games c) Imaginative: social pretend play, make-believe play
Observe	Types: a) Social: the child pays attention to the social situation and observes it actively with visible attention; concentrated on people's behaviours. For example, the keen observation of what the adult around then is doing b) Non-social: the child observes nature or some aspect of the environment not centred on people; the observer sees that the child is focused on one "subject"
Communicate	Conversing with an adult or conversing with other children
Work	Activities that introduce positive changes to the environment or benefit the community emphasizing the child's role in accompanying adults. The child participates with other members either by following their instructions or through observing their work.
Help	Child-initiated activity focused on the benefit of the family. It does not take place with the help or persuasion of a caregiver and is not based on the observation and imitation of the current behavior of adults or peers. For example, when the child independently takes some rice to feed the hens or collects dirty plates without being asked to do so.
School-like activities	Any activities the child is involved in, including: scholastic play, scholastic lessons, learning how to write something, being taught by an adult about things usually covered at school, any literacy- or numeracy-related activity. Not related to community activities
Other	Locomotion, hygiene, eating patterns, rest, or activities irrelevant for the research aim

Children's daily activities were recorded using focal-child sampling. In ethology, this sampling method involves recording the behavior of an individual over a predetermined period (Altman, 1974). Children were randomly assigned to two 2-hour sampling blocks between

8 a.m. and 6 p.m. over a month. We observed each child at least once in the morning and once after 12 p.m., on different days. Behavior was coded every 2 minutes using a 15-second/15-second record procedure, with a 1.5-minute pause. A total of 2419 event points were recorded. We recorded the children's activities, the presence of other people, caregiver attention towards the children, and the location of the activity. Sampling of focal children always began during the home visit, and we followed the child around the village as needed throughout the observation period. In this situation, the children over the age of 6, although they participated in school activities for part of the day (around 4 hours in the morning), were not observed by the researcher during that time.

Reliability analysis

Inter-rater reliability was assessed by coding 15% of observations by both the researcher and an assistant. Substantial agreement was reached for child activity ($\kappa = 0.81$, $p < .001$) and child-centered attention ($\kappa = 0.77$, $p < .001$), with perfect agreement for activity location ($\kappa = 1.00$, $p < .001$).

Observation methods for a micro-level scale

We closely examined children's cooperative behaviors during joint activities. During our stay, we occasionally recorded interactions among both children and adults in the village. Using the results of the focal-child sampling method, we selected a video of children playing with a slingshot, the most common type of manipulative play observed among children and adolescents in the villages. This activity offers a representative example of naturally occurring cooperative actions.

We used BORIS software to analyze the video with three coding schemes. The first coding scheme focused on the children's management of visual attention. Interactions were analyzed in 200-ms slow motion (as in the Dayton et al., 2022 study), encoding the direction of attention for each child separately. The coder (the first author) marked the time when each child looked at either the faces of the collaborators, at the manipulative behaviour of other children, at their own manipulative behaviour, or out of cooperative activity. The second scheme, adapted from Correa-Chávez et al. (2024), targeted verbal and nonverbal communicative behaviors, coded in 5-second segments. The coding list was condensed to suit the nature of the interaction (Table 2).

Table 2
Communication Categories

Category	Definition
Verbal communication	Talk/sounds included any moment when the children spoke during the nonverbal section to communicate and also included instances when a child whispered or made voluntary noises that were difficult to identify because they were too silent.
Gross motor gesture	Involved any moment when a child used a gross motor gesture with the intent of making sure that everybody saw it. The gestures were big or exaggerated and appeared to move away from the body. Examples of these types of gestures included repeatedly waving one's hand towards another person, pointing directly at interaction partner or making implicit symbolic gesture.
Minor gesture	Included subtle gestures used by the children to communicate with each other, characterized by gestures close to the body and not overly large in motion.
Touching	Included any physical engagement between the children, such as tapping, moving their partner's hand or body, or direct physical contact.

The third coding, based on Rogoff's studies of Indigenous collaborative practices, qualitatively evaluated traits like 'being like one organism' for triads, using a 5-point Likert scale. *Being like one organism* means a coordinated ensemble, where three children actively engage with each other, where they demonstrate synchronized actions and communication, with each child's move building on the previous one. *Responsiveness*, coded individually for each child on a 1 to 3 scale assesses the adaptation of a child's behavior in response to interactions and involves adapting to others or the situation, with 1 indicating little/no responsiveness, 2 moderate responsiveness, and 3 full responsiveness. Finally, leadership was scored when the coder saw that during the 5-second interval, a child was clearly leading the activity, such as moving the other children, giving directive communication, or instructing what to do while other children followed the cues. This aspect was measured separately for each child at a normal speed.

Reliability analysis

All coding for visual attention was conducted solely by the first author. For the second and third coding schemes, reliability was calculated by having two coders independently code 100% of the data for one child. Substantial agreement was reached for communication categories ($\kappa = 0.84, p < .001$) and for the three qualitative assessments of 5-second segments ($\kappa = 0.80$ to $0.86, p < .001$).

RESULTS

Macro-level outlook

The focal-child sampling method and field notes let us verify the social development of Yurakare children aged 2-7. The observed children spent the time outside in their or relatives' home areas for 85.8% of the daytime. Children were surrounded by community members most of the time (98%). Due to constant contact with many mix-aged people, children in Yurakare villages often engaged in activities in groups of at least 3 people. However, adults' attention toward the children was the most often partial (49.6% of the observed time), or even absent (24.4% of the time). Sometimes with the caregiving being delegated to older children (17.7% of the time) Typically, children participated in social activities while adults were 'doing their job,' not necessarily focused on what the children were doing around them.

Table 3 presents the proportions of activities observed during focal-child sampling. "Play" was the most common activity in Yurakare children aged 2–7. Further analysis of play modalities revealed that children spend most of their playing time in manipulative play (64.5%). The children's companions during play are most of the time other children: siblings and peers of different ages (96% of all play events are with companions). Typical manipulative games for Yurakare children included peeling or chopping plants with a kitchen knife, playing together with sticks, playing with a slingshot, or building structures together, such as kites made from plastic bags. In this context, children's play let them learn how to do more mature activities performed by older members of the community like cooking, gardening or fishing. Observation of the environment was the second most common activity for Yurakare children, primarily focusing on social activities (86% of the time actively observing), such as watching older siblings or adults working in the kitchen, accompanying them during chores like washing clothes or fishing, or simply spending leisure time outside. This observational activity was more prevalent than direct communication, with minimal child-directed interactions and activities noted during fieldwork. Other activities in which children participated, beyond just observing, included feeding the chickens, cooking, gardening, fetching water, taking walks

around the village, and, for older children, caring for siblings and actively accompanying adults in more mature tasks.

Table 3
Children's Activities: Descriptive Statistics

Categories	N	%
Play	760	31.4%
Help	84	3.5%
Work	86	3.6%
Observation	486	20.1%
Communicate	313	12.9%
School-like activities	30	1.2%
Other	658	27.3%
Total	2419	100.0%

Micro-level analysis

Our macroanalysis revealed that manipulative play among siblings and peers is a predominant activity where cooperation naturally emerges, providing valuable insights into behaviors, norms, and cultural values (Goncu & Gaskins, 2007). We consistently selected this type of activity from our video recordings to analyze the dynamics of cooperation and communication at a microscale.

Description of the activity. Three children, aged 2.5 (girl), 3.5 (boy), and 5 years (girl), participated in a 1-minute and 30-second cooperative slingshot ball exchange. Slingshots, popular for play and bird hunting, used hard, round fruits with a 5-centimeter diameter, sourced locally. The eldest girl, sister to the youngest, and cousin to the boy, led this outdoor activity, with mothers and grandfather loosely supervising 25 meters away, without direct adult influence.

Seconds before cooperation, the younger girl wandered, the boy collected balls in his sweater, and the older girl played with the slingshot. The frame for the interaction is initiated by the oldest girl verbally directing others to redistribute the balls held by the boy. Verbal cue: "Give them to my sister, let's throw more" triggered an exchange of balls between children and their approaching each other in almost constant physical contact. This cue invited the children to interact with each other, three of them. They formed a triangle, positioning themselves, with the boy and the younger girl using their sweaters as makeshift bags. The oldest girl provided short instructions to the boy twice, while the younger girl presented a more passive behavior, standing ready to receive balls from interaction partners and observing the activity, occasionally focusing on something outside the cooperative context.

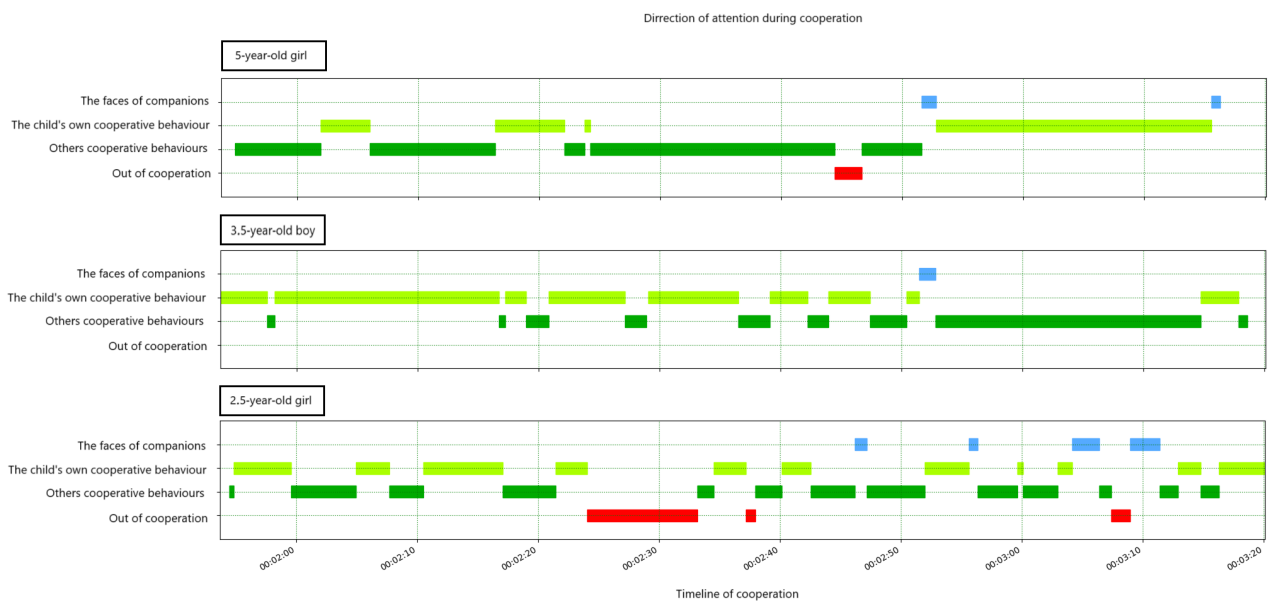
The youngest child momentarily lost her balance while putting the ball into her sweater, due to a more dynamic movement from her older sister towards her. The younger girl, trying to adjust to this movement, lost her balance. This moment revealed the unity of the triad, as all three briefly lost their balance together. After regaining their balance, they carried on with their activity. Meanwhile, the boy quietly narrated his actions to himself twice. Throughout the activity, balls occasionally fell on the floor, with only the oldest girl taking charge by picking them up; she also directed the game and passed balls between the others. She was not

collecting them into her sweater. The boy also participated by passing balls, whereas the youngest girl hardly ever did.

In the 3rd quarter of the activity, the oldest girl moved for a moment away from the group. She told the other two to pile up the balls, then returned and rejoined with them. From that point, the cooperation led to the end, culminating in the closing frame of the activity when the oldest girl declared "done," corrected the younger girl's 'bag,' and moved away, with the younger children obediently storing balls in their sweaters, then they followed the older girl.

Microanalytical analysis of the vignette: The analysis showed that all three children spent 94.6% of the time focused on joint activity, with minimal face-to-face interaction. The youngest girl looked at her companions' faces the most, at 7.8% of the time. Figure 1 displays each child's attention management over time. Notably, the youngest girl demonstrated the most varied gaze-switching patterns, frequently transitioning within short time intervals (30 switches of attention). Additionally, she spent the longest duration (13.5% of coded time) disengaged from cooperative activities (*out of cooperation line*). During that time, she was looking around the environment. With increasing age in the children, we observed more stable attentional patterns where the boy switches his attention 18 times and an older girl 11 times.

Figure 1
The Direction of Attention for Each Child Separately on a Timeline



In our observation of communication patterns, we found minimal verbal interaction among the children. The youngest girl maintained silence throughout the interaction, while observing with attention everything around her and exclusively utilizing nonverbal communication. The oldest girl exhibited the highest level of verbal communication, accounting for 14 seconds of the total analyzed time. She predominantly utilized verbal directives, particularly evident at the onset and conclusion of the activity. Additionally, she employed a single verbal demonstrative statement during the activity, providing instructions on how to pass the balls. However, she relied mainly on nonverbal communication, accounting for 81.25% of all communicative behaviors within interaction segments. The boy, on the other hand, spoke for only 4 seconds, exclusively whispering comments to himself about his own actions. Similarly, the boy preferred nonverbal communication, with 83.3% of his communicative behaviors falling within this category.

Only two channels of nonverbal communication were observed: *minor gestures* and *touching*. *Touching* emerged as the predominant form, constituting 63.15% of all nonverbal acts

observed. Noteworthy is its prevalence among younger girl, who utilized *touching* in 85% of her communication. The remaining two children demonstrated a more balanced utilization of these two nonverbal channels. The attentional pattern timeline shows just one instance of direct face-to-face interaction (at minute 2:53), and overall, no facial expression communication was observed among the triad, nor any obvious gesture.

Leadership was exhibited only by the oldest girl. Analysis of the interaction intervals showed leadership occurring both at the beginning and end of the interaction (marked with an 'x' in Table 3). Additionally, leadership was evident in the middle segments, particularly when the eldest girl briefly left and then reunited the group after moving a few meters away (between minutes 2:40–2:50; see Figure 1).

Table 4
Qualitative Dynamics in the Triad

Number of 5 sec interval	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Being like one organism	4	4	4	4	5	4	4	2	2	2	3	2	4	4	4	3	3	2
Leadership by 5-year-old girl	x	x	x						x			x	x	x				x
Responsivness: 5-year-old girl	2	3	2	3	2	3	2	1	1	1	2	3	2	2	3	2	2	2
Responsivness: 3.5-year-old boy	3	3	2	2	2	2	2	1	2	2	3	3	2	2	2	2	2	3
Responsivness: 2.5-year-old girl	3	2	3	2	2	3	2	1	1	1	3	1	3	1	2	2	1	2

The coder assessed each segment of the children's triad *as one organism*, with a median score of 4 and a mean score of 3.33. We observed that occurrences of leadership did not negatively influence the perception of the triad '*being like one organism*.' Leadership did not negatively impact the triad's cohesion, as segments often scored 4 even with visible leadership by the older girl. Responsiveness among the children was similar, with a mean of 1.94 for the youngest girl, 2.11 for the older girl, and the highest mean of 2.22 for the boy.

DISCUSSION

Our data suggest that Yurakare children grow up in an environment where all ages actively participate in daily activities, with adults rarely focusing solely on children. Instead, children are expected to adapt to the social environment. At the macro-level, community life focuses, aligned with the LOPI model, on cooperation as a pillar, where people with different expertise work together flexibly with initiative and direction toward a common goal (Siekiera & Bialek, 2024). To explore how this community pattern functions at a micro-level in children, we use codes related to responsiveness and the concept of '*being like one organism*' to capture how participants adapt to one another and maintain a sense of flow in their interactions. Our vignette illustrates this dynamic, showing three mixed-age children adjusting to each other to achieve a shared goal, including the youngest despite her limited expertise.

Through joint attention on the tasks, the children demonstrated high levels of cooperation and dedication to the activity, despite minimal verbal communication or no sustained eye contact, still they were all together in one action. The micro-level analysis reveals how the children's interactions were based on nonverbal co-activity. This phenomenon aligns with findings from research on other Indigenous-heritage communities (e.g. Mejía-Arauz et al., 2018), where people synchronize their endeavors without needing the awkward coordination of making and ratifying proposals to proceed (Dayton et al., 2022). What's more, in the observed children, there was a noticeable stabilization of attention with age, manifested by a

longer and more consistent focus of attention on the joint activity, without constant switching between aspects of the environment and interaction. Thus, this suggests greater stability and predictability of activities, which in turn facilitates cooperation. Given that the eldest girl had the most stable direction of attention, this may have served as a guide and support for younger children in developing their cooperative skills.

The analysis of nonverbal communication, role adaptation, and leadership behaviors shows how cooperation unfolds seamlessly with minimal verbal interaction. The communication between the Yurakare children aligned with the communicative patterns of P'urhépecha children from Mexico (Correa-Chávez et al., 2016). In Indigenous communities, the reliance on nonverbal communication, such as *minor gestures* and *touching*, may serve as representation of the cultural pattern where nonverbal cues and indirect learning are predominant over verbal instruction and child-directed conversations (Rogoff & Mejía-Arauz, 2022). We assume that nonverbal communication is often highly context-dependent, with gestures, physical contact, and body language conveying subtle nuances of meaning that may not be effectively expressed through verbal communication in this cultural community. We recognize that the high level of touch-based communication is inherent to the nature of the task, given the children's close proximity. Further research on nonverbal communication in shared activities among children from such socio-cultural contexts is needed.

In analyzing the interaction dynamics, the older girl's leadership aligns with the view of leadership as a dynamic process, not a fixed trait (Northouse, 2022). In the LOPI model, cooperation emphasizes collective expertise and inclusive leadership, resembling "one organism". The oldest girl plays a horizontal leadership role, while the others adapt through observation and responsiveness to the situation. As the most experienced, she introduced the idea of cooperation by one verbal directive while simultaneously providing an opportunity for her younger partners to develop their cooperative and manipulative skills. The boy dedicates most of his time to observing and adjusting his actions as his way of learning the activity, making him the most responsive participant in the interaction. Despite her limited abilities, the youngest child refocuses on the shared task and learns the basics of cooperation through inclusion by older peers. This cooperative play illustrates social apprenticeship among Yurakare children, by seamlessly adapting to the needs of the moment based on their level of expertise. This adaptability seems to be supported by their daily routines, which prioritize observation, a motivation to align with community needs, and a minimal focus on child-centred activities. More importantly, children's agency is highlighted as they independently experiment with collaboration, creating culturally valued learning opportunities through interactions between novices and experts, without heavy reliance on parental directives (de León, 2017; Rogoff & Mejía-Arauz, 2022).

We acknowledge that our cultural description may seem superficial to ethnographers. Our goal was to study cooperation using two-time scales and observational methods, prioritizing description over explanation to address the lack of descriptive depth noted by Rai and Fiske (2010). Future research using these methods and advanced behavior analysis tools can explore interactions in greater detail and their link to broader cultural organization.

The study underscores how macro-level cultural norms of collaboration and adaptation are mirrored in the micro-level interactions among children, reinforcing the idea that even brief moments of play can reflect cultural patterns. We liken this approach to using both a telescope and a microscope, each offering a unique yet complementary view for a fuller understanding. We hope this dual lens approach inspires similar research methods.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available upon request from the corresponding author. The data are not publicly accessible due to privacy or ethical restrictions. Users must agree not to attempt re-identifying individuals from the redacted data. The redacted data were uploaded to the OSF platform under restricted access on the first author's profile (<https://osf.io/v5pjb>).

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

ETHICS APPROVAL STATEMENT

This study was approved by the Research Ethics Committee at the Institute of Psychology, Jagiellonian University (approval no. 18_2021). All parents from participating children provided informed consent prior to enrolment in the study.

PERMISSION TO REPRODUCE MATERIAL FROM OTHER SOURCES

Not applicable.

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TRANSPARENCY

Natalia Siekiera: Conceptualization (Equal); Funding acquisition (Lead); Writing- original draft (Lead); Data curation (Lead)

Arkadiusz Bialek: Conceptualization (Equal); Writing - review & editing (Supporting); Methodology (Supporting); Formal Analysis (Supporting)

ORCID ID

Natalia Siekiera  <https://orcid.org/0000-0002-1819-8647>

Arkadiusz Bialek  <https://orcid.org/0000-0002-9002-4764>

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