



# Cultural Differences in Family Interactions: Collaboration at a Microscale

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## ABSTRACT

The study found more triadic collaboration — even at a scale of fractions of seconds — among Guatemalan Mayan family groups involving mothers and their 2 children than among their middle-class European American counterparts.

The mothers and their toddler and 3-5-year-old child were videotaped at 5 standard moments, as each mother was handed a novel object to help the toddler operate. We coded the 10 seconds following the hand-over of each of the novel objects, in time segments or 200 milliseconds. This study is the first analysis of triadic collaboration at this micro-analytic timescale

The greater fluid collaboration of the Mayan families, at fractions of seconds, extends previous descriptions of sophisticated, fluid collaboration in Indigenous and Indigenous Heritage communities of the Americas, observed at larger timescales.

## INTRODUCTION

**Can cultural differences in fluid collaboration among Indigenous and European-heritage middle-class triads be seen at a scale of fractions of seconds?**

Fluid collaboration appears to be common in Indigenous communities of the Americas and among Mexican-American immigrant families with recent intergenerational participation in Indigenous communities and practices (Alcalá & Rogoff; Correa-Chávez et al.; Ellis & Gauvain; Mejía-Arauz et al; Ruvalcaba & Rogoff).

This form of collaborating, with initiative and flexibility, is a central feature of a model of learning in communities where children are encouraged and expected to contribute to ongoing activities of the family and communities called Learning by Observing and Pitching In (Rogoff, 2014). <https://learningbyobservingandpitchingin.sites.ucsc.edu/>

We are especially interested in the relationship of cultural patterns of activity across developmental timescales. To that end, our study contributes the first description of cultural differences in this paradigm at a scale of fractions of seconds.

## METHOD

**Participants.** The sample was 38 family triads composed of a mother, a 1- to 2-year-old toddler (M= 17 months), and a 3- to 5-year-old sibling (M= 49 months). 20 triads were Mayan and 18 were European American middle-class.

**Data Collection.** A European-American researcher and a local Mayan research assistant fluent in the families' languages visited the family home. After about 30 to 45 minutes of interview, the research assistant presented the mother with five novel objects, one by one, asking her to help the toddler operate them.

**Coding.** Our focus was the 10 seconds of interaction after the mother first grasped each object. We segmented each 10-second event into 50 segments of 200 milliseconds each. To code the type of engagement families used, we slowed each clip to 20 percent of the original recorded speed, yielding a slow-motion clip lasting 50 seconds.

We developed a micro-scale coding scheme that focuses on the fluidity and mutuality of coordination among the three participants. Reliability was strong:  $\kappa = .95$ .

<span style="color: blue;">■</span> <b>All 3 mutual</b>	All 3 participants mutually engage with each other	
<span style="color: green;">■</span> <b>Only 2 mutual</b>	2 mutually engage together, 1 does something else	
<span style="color: yellow;">■</span> <b>No mutual, One-way</b>	No mutual engagement, but some one-way looks	A → B → C
<span style="color: yellow;">▨</span> <b>No mutual, Separate</b>	Entirely separate	A B C
<span style="color: red;">■</span> <b>Rough, resistant</b>	Participants resist or engage at counter purposes	A  B C

## CONCLUSIONS

- Mayan mothers and their two young children spent significantly more time engaged in fluid, mutual collaboration while exploring novel objects together than their middle-class European heritage counterparts.
- European-American triads' engagement often involved no mutual engagement or rough resistance, or only two people engaged together (with one left out).
- Thus the Mayan families spent more time thinking together as an ensemble than did the European-American middle-class families, extending prior work on cultural differences in collaboration.
- These cultural differences in collaboration are visible at a scale of fractions of seconds, in family triads with very young children, revealing the foundations of sophisticated collaboration.

## RESULTS

