**QUESTIONS AND HYPOTHESES**

**Main Question: How does the use of pointing and language develop in the early stages of language acquisition? Does the specific linguistic/cultural setting influence this development?**

**Specific Research Questions:**

Research question 1: How do the **rate and distribution of pointing** gestures differ across speaker roles (children vs. adults) and age groups?

🡪Pointing behaviors are expected to show developmental progression, with infants and toddlers using different types and rates of gestures compared to older children and adults. Cultural context (Shipibo vs. Other cultures in other studies) may modify these patterns.

Research question 2: Does **the proportion of pointing gestures to spoken utterances** change across development?

🡪 Pointing will decrease relative to verbal communication as children’s linguistic skills develop, reflecting a shift from nonverbal to verbal modes of communication (this is a trend observed across Russian and Chintang in Mazara et al.)

Research question 3: Does **the number of surrounding speakers influence the rate of pointing gestures produced by target children and surrounding speakers** in the Shipibo cultural settings?

🡪 Increased social interaction, indicated by a greater number of surrounding speakers, will correlate with higher rates of pointing, suggesting that pointing serves a social communicative function in dense social environments.

Research question 4: Is there a (cross-cultural and) developmental difference in the **distribution of index finger points versus other types of pointing gestures** among young children and their surrounding adults?

🡪 Index finger pointing might be less prevalent in the Shipibo community compared to other studied groups, reflecting cultural variations in gestural communication.

Research question 5: How does the **use of silent points (points without accompanying vocalizations) vary across cultures, age groups, and individual speakers** (children vs. adults) in the Shipibo setting?

🡪 Silent pointing might be more frequent in younger children and decrease with age as verbal abilities increase, consistent with trends observed in other cultural settings.

Research question 6: How do children in the Shipibo cultural settings **use vocalizations (e.g., babbling, words) accompanying points**, particularly at younger ages?

🡪 Children in the Shipibo cultural setting will exhibit a developmental trajectory in their vocal accompaniments to pointing gestures, transitioning from pre-linguistic vocalizations, such as babbling, to more structured linguistic forms, such as words.

Research question 7: How **do speech acts accompanying points (e.g., commands vs. statements)** vary across age groups and between Shipibo adults and children?

🡪 Variations in the use of commands and statements will reflect developmental and cultural differences in communicative strategies and intents.

Research question 8: How does **the type of information conveyed in point-accompanying utterances (e.g., attention-directing, identification, comment)** vary across age groups and between Shipibo adults and children?

🡪 Younger children will use more attention-directing points, with a shift towards more complex informational points (identification, comment) as they age.

Research question 9: How **do one-word and multi-word utterances differ in the way they accompany pointing gestures**, specifically in conveying comments or identifications across Shipibo adults and children?

🡪 One-word utterances will primarily function to identify referents, while multi-word utterances will provide additional information, reflecting linguistic development.

Research question 10: How does the use of **deictic expressions in utterances vary depending on whether they accompany pointing gestures,** and what differences are observed across age groups and between Shipibo adults and children?

🡪 Deictic expressions will be more frequent in utterances accompanying pointing gestures, reflecting their role in anchoring referential communication.