

3. Quantification and Numeration in Amazon Indian Language

The Shuar of Eastern Ecuador number approximately 30,000 and are one of the largest indigenous groups of people in the Amazon. This text holds the first ethnographic monograph, obtained in 1916-17 and 1928-29, that proved that the tribe had counting skills and methods.

There were many tribes that composed the great mass of the Shuar. Two prominent ones were the Upano and the Jibaro peoples. Like many other natives, the Shuar used many verbal and nonverbal forms of communication. For example, the Upano tribe only had proper names for the first 5 numerals in their language. However, even though they could verbally express some numbers, it was standard for the Upano's to use their fingers and then toes to show the amount they were describing. The Jibaro tribe varied slightly; after the verbal expression for five, which counted off the left hand, a Jibaro would then grab his right hand, starting with his thumb, and continue on. The literal translation for six is "five and one more", seven "five and two more", etc. This suggests that the Shuar peoples' number system relied heavily on the additive property. One major disadvantage to this primitive method became evident when the Upano or Jibaro ran out of fingers and toes to count. In this case, the tribesman joined his closed hands together, which became representative of ten, however many times to produce multiples of ten: two joins meant twenty, three meant thirty, etc. Since this method was strictly nonverbal, the Shuar could not really exceed fifteen or so joins because they would lose count. If they wanted to express a very large number, they had words that translated to "very much", "plenty", and even "as ants." From this data, it is evident that the Shuar can count beyond the limits of verbal expression but they rely on lower and cruder methods of expression than speech - the "gesture-language."

The Shuar did, and still do, business by trade. This might have been seen as problematic considering the crude mathematical skills of the natives; however, they exchanged goods even when they knew that the trade was slightly uneven. The Shuar did not seem to value numeration and believed that this type of trade was a central way to establish and preserve social relations. These people had good practical skills in evaluating volumes and quantities. For instance, they could easily look inside a jug or basket and know approximately how much rice or water it could hold. Although these skills were well developed through experience, we still cannot label the Shuar as good mathematicians.

Ethnographic studies conducted in the beginning of the 20th century proved that the Shuar's mathematics skills were definitely rudimentary. Even though there are comments that suggest that the natives had comparative expressions such as less than, "small," and greater than, "big," the extent of the Shuar mathematics did not exceed a few numbers with specific names and the simplest forms of addition and multiplication.

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