Word order as evidence for recursion in Pirahã

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It has been claimed that Pirahã, an indigenous language of Brazil, spoken in the Amazon region, is a non-recursive grammar (Everett 2005, 2009). However, this claim has been disputed. Nevins, Pesetsky & Rodrigues (2009, 2010), relying on descriptions of the language published by Everett, argue that there is no empirical evidence for the lack of recursion in Pirahã. Sauerland (2010) based on an experimental analysis of the Pirahã morpheme *–sai*, concludes that when this morpheme has a low tone, it marks syntactic embedding. In this paper, we present data from our fieldwork with Pirahã speakers from the village of Piquiá, supporting the claim that Pirahã syntax is recursive. Our data shows that, besides being readily available in certain syntactic environments, recursion in this grammar interacts in an interesting way with word order.

Pirahã is predominantly SOV. This canonical order seems to be disrupted when the verbal complement is a sentence, as in (1) which exhibits an SVO order. Everett (2005, 2009) takes this to be evidence that the sentential complement is only paratactically related to the main clause. Thus, he understands that (1) should be translated as in (2). However, our data in (3) shows that the order SOV is indeed possible when the embedded clause is non-finite. (3), for instance, is a case of obligatory control involving an infinitival embedded sentence. Importantly, it is possible to have more than one level of embedding, as shown in (4). This suggests that this grammar allows recursive embedding at least in obligatory control configurations. The data in (5), which displays object obligatory control, shows clearly that not only is the SOV order possible in obligatory control, but also that a negation within the matrix clause has scope over the entire embedded clause. Notice that (5) does not have the interpretation in (6). According to the speakers, the meaning in (6) is expressed by sentences like (7). That is, the negation has obligatory wide scope. In (5), the combination of the word order SOV plus the obligatory wide scope of the matrix negation, is a robust argument for the syntactic embedding of the infinitival clause.

Another interesting instance of the interaction between word order and recursion is found within possessive noun phrases. Everett (2005) offers the contrast in (8) & (9) as an argument for his claim that multiple embedding is not possible in Pirahã. In our fieldwork, however, we could promptly elicitate nominal expressions displaying 2 levels of possessive embedding (10)-(11). Notice, though, that the order Possessor>Noun is inverted in the second level of embedding, as the possessor appears post-nominally. This change in the word order might be related to the semantic distinction between inalienable and alienable possessive relations. Many languages (cf. (12) from Dogon, a Niger-Congo language) reserves the order Possessor>Noun for inalienable relations. Alienable relations are expressed by the reversed order, which maybe intermediated by a prepositional phrase or not. In (10)-(11), the semantic relation between the possessor and the noun is inalienable in the level of embedded (*motor boat*, *dog tail*), but alienable in the second level (*canoe Iapohen*, *dog my*). In this paper, we discuss this analysis, concluding that Pirahã contributes to our understanding of recursion, not because it is exceptional, but because it shows that recursion, a core and universal property of syntax, might be constrained by certain interface requirements between syntax, semantics and morphology.

(1)   Maria hi   gai-sai.   Ana hi   (goo) gai-sai   aogi
        Maria 3Person said-NOMLZR   Ana 3Person like said-NOMLZR foreigner
        goo gai-sai   maasi ti
        like said-NOMLZR   pretty I
(2)   Maria said: Ana said like: The foreigner said like: I am pretty.
(3)   ti kapiiga kagakai   ogabagai apaitisai
        I paper study   want   Pirahã
        'I want to study Pirahã'
(4)   ti kapiiga kagakai ogabagai sogabagai
        I paper study   want   would.like
        'I would like to want to study'
(5)   ti kaai   iaipaha tabo   kabahai   neai
        I house make   wood gave-not you
        'I did not give you wood to make a house'
(6)   # I did not give you wood. Make a house!
(7)   ti tabo kabahai   neai abaago kaai iaipa
        I wood gave-not you alone house make
(8)   mothoi agoa
        motor   canoe
        'canoe's motor'
(9)   *[kó'oí hoagí] kai   góihií 'íga
          name son   daughter that   true
        'That is Kó'oí's son's daughter.'
(10)   agoa   Iapohen motohoi
        canoe Iapohen motor
        'Iapohen's canoe's motor'
(11)   niupai ti   igato huakue   kopae
        dog   I   tail   long   back
        'My black dog's long tail'
(12)   a.   *tigɛ   wo mɔ*   b.   u ba   (Dogon, Plundian 1995)
             name he GEN   *you head*
             'His name'   'your father'

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