On the absence of number and numerals in Pirahã

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Numerical qualification and quantification are of interest to linguists, anthropologists, and psychologists because they reveal much about human nature and its interactions with the world. Everett (1994, 1996) describes Pirahã (Amazonian, Muran) as lacking number and numerals entirely. Such languages, though Pirahã is the only case yet documented, are interesting because they teach us that numbers and numerals are not universally part of human cognition or culture, in spite of occasional claims to the contrary in the literature. Pirahã has no singular vs. nonsingular contrasts in its grammar or lexicon. And it lacks numerals (words naming numbers) altogether. In fact, in a series of videotaped psychological experiments, Gordon & K. Everett (1993) show that the very concept of counting is foreign to the Pirahãs. Rather, they have a small set of terms used to *qualify* nouns which to the novice might seem to be numerical *quantification* (´= high tone; ` = low tone):

(1) a. **hóì** 'small size or amount'
b. **hòí** 'somewhat larger size or amount'
c. **bá** **à** **gì** **sò** 'lit: cause to come together (loosely 'many')
touch -causative infix touch nominalizer

Some examples which show how Pirahã expresses what in other cultures would be numerical concepts:

(2) a. **tí** **ʔítîìʔìsì** **hóì** **hìì** **ʔàbàʔáígìò** **ʔòògàbàgàí**
1 fish small pred. only want
'I only want {one/a couple/a small} fish.' (NB: This could not be used to express a desire for one fish that was very large, except as a joke.)
b. **tìòbáhàì** **hóì** **hìì** 'small child/child is small/one child'

(3) a. **tí** **ʔítîìʔìsì** **hòí** **hìì** **ʔòògàbàgàí**
1 fish larger pred. want
'I want {a few/larger/several} fish.'
b. **tí** **ʔítîìʔìsì** **báàgìsò** **ʔòògàbàgàí**
1 fish many/group want
'I want {a group of/many} fish.'
c. **tí** **ʔítîìʔìsì** **ʔògìí** **ʔòògàbàgàí**
1 fish big want
'I want {a big/big pile of /many} fish.'

Interestingly, in spite of its lack of number and numerals, Pirahã seems to have a count vs. mass distinction:

(4) a. **ʔàòóì** **ʔàáíbáì** **ʔàòʔàágá** **ʔòí** **kàpìóʔìò**
foreigner many exist jungle other
'There are many foreigners in another jungle.'
b. */? **ʔàòóì** **ʔàpàgí** **ʔàòʔàágá** **ʔòí** **kàpìóʔìò**
foreigner much exist jungle other
? 'There are much foreigners in another jungle.'

(5) a. **ʔágàísì** **ʔàpàgí** **ʔàòʔàágá** **ʔòí** **kàpìóʔìò**
manioc meal much exist jungle other
'There is a lot of manioc meal in another jungle.'

***ʔágàísì** **ʔàáíbáì** **ʔàòʔàágá** **ʔòí** **kàpìóʔìò**
manioc meal many exist jungle other
*'There is many manioc meal in another jungle.'

However, this distinction is more consistently analyzed as the distinction between things that can be individuated and things that cannot, thus independent of the notion of counting.