Pluractional numerals in Seri are distributive

Jérémy Pasquereau, Surrey Morphology Group, University of Surrey (UK)

Cardinal numerals in Seri (isolate, Mexico) are verbs, which, like all verbs in this language, can express pluractionality, i.e. multiplicity of events. In this paper, I argue that pluractional numerals are interpreted as distributive numerals. Some analyses of distributive numerals argue they involve universal quantification (Champollion 2016 a.o.) whereas others analyze them as contributing a plurality of events (Knezevic 2015 a.o.). The transparent composition of distributive numerals in Seri constitutes an argument in favor of analyses in terms of plurality of events.

Introduction Verbs in Seri have distinct pluractional forms (glossed PLUR), contrasting with an underspecified neutral form (Cabredo Hofherr, Pasquereau, and O'Meara 2018), e.g. in (1), the pluractional *conthayatim* is false in context A where the event of my going to Puerto Libertad happened just once, whereas the neutral *conthaya* is true in both contexts.

(1) Moxima, Xpanohax conthaya / conthayatim.
yesterday Puerto_Libertad 3IO.AW.1SG.RLYO.go / 3IO.AW.1SG.RLYO.go.PLUR
Yesterday, I went to Puerto Libertad (several times). [EDSEI21OCT2018DRPM, elicitation]
Context A: Yesterday, I went to Puerto Libertad and came back once.
Context B: Yesterday, I went to Puerto Libertad several times.

Numerals in Seri are verbs: (i) they inflect (*cf.* 2a and 2b) and have the same distribution as verbs, and (ii), like other verbs, they modify a noun phrase via nominalization (*cf.* 3a and 3b).

(2) a. Ham-oocj.
1PL.RLMI-be_2
We are two.

b. Ham-iizcam.
1PL.RLMI-arrive.PL
We have arrived.

(3) a. Sahmees quih c-oocj hyoohit.
orange DEF NMLZ-be_2 1SG.RLYO.eat
I ate 2 oranges (lit. oranges that are 2).

b. Xiica quistox quih c-aazcam coi hyooho.
people DEF NMLZ-arrive.PL DEF.PL 1SG.RLYO.see
I saw the people who arrived.

Like others verbs, cardinal numerals have pluractional forms. This raises the question: what do pluractional numerals mean? I show that pluractional numerals share properties with distributive numerals described for other languages. This paper's contribution is thus twofold: (i) it presents and investigates a, to my knowledge, unattested confluence of factors: numerals that are verbs in a language where verbs productively mark pluractionality, and (ii) it brings support to the 'pluractional analysis' of distributive numerals in other languages where the composition of distributive numerals is not as transparent (Knezevic 2015; Hofherr and Etxeberria 2017 a.o.)

Pluractional numerals = distributive numerals A distributive numeral is a construction that has two properties (Cable 2014): (i) it receives a distributive reading, and (ii) the numeral is interpreted *as if* in the scope of a distributive operator. In Seri, sentences with PLUR-numerals, e.g. *capxoj* in (4) are not true in collective (context A) or cumulative (context B) contexts.

(4) Xicaquiziil quih haxaca quih c-apxa/ #c-apxoj hax an iyahalam.
girls DEF dogs DEF NMLZ-be_3/ NMLZ-be_3.PLUR water in 3;3.RLYO.wash
The girls washed three dogs. [EDSEI24OCT2018DRPM.GH.ATHF.LKPH]
Context A : I have 3 dogs. Two girls came to wash them at 2pm. They both washed the dogs together. SC on plur form: if they are in the same bathtub, *capxoj* can't be used, *capxoj* means there are several groups of 3 dogs
Context B: I have 3 dogs. Two girls came to wash them at 2pm. Alina washed one and María washed the other two. SC on plur form: it's a lie because one girl washes one dog and the other washes two, but the sentence says that each one washes three dogs

Seri pluractional numerals are true in distributive contexts, e.g. (5) where a multiplicity of groups of three dogs is distributed over the multiplicity of children.

(5) Context: I have 6 dogs. Two girls came to wash them at 2pm. While Alina washed three dogs, María washed the other three. [EDSEI24OCT2018DRPM.GH.ATHF.LKPH]

Xicaquiziil quih haxaca quih #c-apxa/c-apxoj hax an iyahalam.
girls DEF dogs DEF #NMLZ-be_3/NMLZ-be_3.PLUR water in 3>3.RLYO.wash

*The children washed three dogs. SC on non-*PLUR*-form: it's a lie because the sentence says that there were two girls and just three dogs, but there are six.*

Second, the phrase containing the PLUR-numeral is interpreted *as if* it is in the scope of a distributive operator. In the sentence/context in (6), the phrase denoting *2 girls* looks like it is in the scope of a distributive operator (for each dog, a group of 2 girls washed that dog). If PLUR-numerals are distributive numerals, we expect the phrase *2 girls* and not the phrase denoting *3 dogs* to be the one containing the pluractional numeral. The contrast in truth-value between a and b shows this is indeed the case.

(6) Context: I have three dogs. Six girls came to wash them at 2pm. Each dog was washed by a group of two girls. [EDSEI24OCT2018DRPM.GH.ATHF.LKPH]

a. #Xicaquiziil quih c-oocj haxaca quih c-apxoj hax an iyahaalam.
girls DEF NMLZ-be_2 dogs DEF NMLZ-be_3.PLUR water in 3;3.RLYO.wash

Two girls washed three dogs. SC: because the context talks abotu 3 groups of 2 girls but the sentence says there's only 2 girls

b. Xicaquiziil quih c-oocalcam haxaca quih c-apxa hax an iyahaalam.
girls DEF NMLZ-be_2.PLUR dogs DEF NMLZ-be_3 water in 3;3.RLYO.wash

Two girls washed three dogs.

Distributive properties Seri pluractional numerals allow distribution over times (7) and also allow distribution over participants as (6) and stative examples show.

(7) Context: Last week, every day my son caught exactly 3 fish. [EDSEI24OCT2018DRPM.GH.ATHF.LKPH]

Hihyaazi quih zixcam quih c-apxoj iyoocö.
1SG.son DEF fish DEF NMLZ-be_3.PLUR 3>3.RLYO.kill

*My son caught three fish (repeatedly). / *Each of my sons caught three fish.*

Note that the pluractional numeral in (7) is licensed by the distributive context (over times) without the need for an overt distributive licensor ('auto-licensing' in Farkas 2015, as in Telugu (Balusu 2006) a.o. but unlike in Kaqchikel (Henderson 2012)). By contrast distribution over participants requires the presence of a plural phrase in the sentence (5). A well-known property of distributive numerals is that they can (redundantly) appear with an overt distributive operator (Farkaš 1997, 'innocent redundancy in Kuhn 2019): in (8), whether the numeral *coocalcam* appears with or without the distributive operator *tcooo* 'all', the sentence has the same truth-conditions.

(8) Xicacaziil coi (tcooo) hapaspoj hanoocaj quih c-oocalcam iyahooza.
children DEF.PL RLT.be.all books DEF NMLZ-be_2.PLUR 3>3.RLYO.read.PL

Every child read two books. [EDSEI26OCT2018DRPM.GH.ATHF.LKPH]

Conclusion I have shown that Seri pluractional numerals are distributive numerals. That distributive numerals can be derived from numerals and a marker of pluractionality provides strong evidence in favor of analyses of distributive numerals in terms of event plurality (e.g. Knezevic 2015 a.o.) (as opposed to universal quantification analyses, e.g. Balusu 2006 a.o.).