Restrictions on distributivity

This paper examines a puzzling account of apparent long-distance semantic selection demonstrated in Shan (Burma, Kra-Dai) distributive constructions based on original fieldwork and proposes a distributive morpheme that selects sets of alternatives.

The puzzle. On the surface, the Shan distributive construction has a similar distribution to English *each*, as shown in (1). This construction is formed by a numeral and classifier representing the distributive key amount (*sǎam kô* 'three people' or more naturally in English'trio'), an optional indeterminate pronoun *lǎj/lǎɯ*, and a following numeral and classifier representing the distributive share amount (*sɔ̌ŋ pâp* 'two (books)'). The distributive marker can appear in a similar position to a determiner as in ((1-a)), and it can appear in similar positions to adnominal ((1-b)) and adverbial *each*, as in (1-c). See Champollion (2019) for an overview of distributivity. Aside from the obligatory numeral and classifier that form part of the expression, which will not be examined in detail here, Shan distributive constructions has an uncommon feature: the predicate of a determiner or adverbial distributive construction must include a numeral expression, such as *sɔ̌ŋ pâp* 'two (books)' in (1). This is similar to the restriction seen for the adnominal distributive construction as identified by Safir & Stowell (1988). However, while the adnominal distributive construction can be accounted for, the Shan case cannot so easily be explained. This project uses fieldwork methodologies to address this puzzle.

(1) a. lukhén sǎam kô **lǎj** laj pâplik *(sɔ̌ŋ pâp)
student three CLF.H DIST get book two CLF.BOOK
'Each trio of students gets two books.' DETERMINER

b. lukhén laj pâplik sǎam kô **lǎj** *(sɔ̌ŋ pâp)
student get book three CLF.H LAJ two CLF.BOOK
'Each trio of students get two books.' ADNOMINAL

c. lukhén kaw kô tsɤ́ nân sǎam kô **lǎj** laj pâplik *(sɔ̌ŋ pâp)
student nine CLF.HUM PL that three CLF.HUM LAJ get book two CLF.BOOK
'Those nine students, each three/trio get(s) two books.' ADVERBIAL

Cardinal restriction. English determiner and adverbial distributives have no problem distributing a definite or bare plural distributive share, as shown with (2-a)–(2-b). The adnominal distributive, as in (2-c) in constrast to (2-d) demonstrates the requirement that the adnominal *each* combine with a quantized numeral phrase—a definite or bare plural distributive share is not acceptable. Several have noted this "counting quantifier requirement" for adnominal distributives that prevents such phrases as **most men each* (for example, Safir & Stowell 1988). This is similar to the restriction seen in all cases of the Shan distributive construction in (1), which require the overt numeral and classifier in the distributive share.

(2) a. Each man read (the/two) books.
b. The men each read (the/two) books.
c. *The men read (the) books each.
d. The men read two books each.

This generalization was identified and investigated variations of (1) with differences in distributive key amounts, verb valency, and new/given status of distributive arguments. Shan speakers were prompted to provide their own descriptions of distributive contexts as well as provide grammaticality and felicity judgments on contextually grounded examples. The ro-

bust finding was that among all the variation, it was necessary to include a numeral classifier expression corresponding to both the distributive key and the distributive share. Additionally, all examples of this distributive construction found among the 14,343 Wikipedia articles written in Shan follow the same pattern. Two such examples are provided in (3-a)–(3-b). In (3-a), the overt subject uses the determiner distributive construction. In (3-b), the adverbial distributive construction shows the distributive key amount *nɯŋ kɔ̂* 'for each each (person)' followed by lăɯ and the distributive share amount *sì lɤ̋n* 'four months'.

(3) a. nɯŋ luk lăɯ mí kɔn 6–10 kɔn
one CLF.RND DIST have petal six–ten petal
'Each one has six to ten petals.'

b. khăw tók punphɔ́n nɯŋ kɔ̂ lăɯ sì lɤ̋n
3PL fall responsibility one CLF.HUM DIST four month
'They hold responsible, each for four months.'

Proposal Karttunen (1977) accounts for the selectional differences in *know* vs *wonder* verbs by positing distinct semantic types for each. A similar account can apply in the Shan distributive case as well. In order to account for the cardinal/indefinite expression in the adnominal distributive case, it makes sense to say that the binomial *each* imposes some restriction on the nominal expression that it forms a constituent with such as Safir & Stowell (1988) proposed (see also Law 2022). It is more challenging to make this case for the Shan distributive construction more broadly. The distributive key quantity and the distributive share quantity are often adjacent, but this is not required as (1-a), (1-c), and (3-a) demonstrate. A way of accounting for this is to say that the distributive operator, which is presumed to be overtly represented by *lăj*/lăɯ, is sensitive to the semantic differences between different types of predicate arguments. That is to say, the semantic argument corresponding to the distributive share is semantically distinct depending on whether the object is definite, indefinite, or a bare noun. A straightforward way of doing this is to follow Kratzer & Shimoyama (2017) in treating indefinite expressions as sets of alternatives. This could make use of Hamblin function application to do function application with alternatives to maintain the alternatives through the intervening nodes until it reaches the distributive operator. This would make it possible to distinguish between definite and indefinite expressions since within the same situation, the definite expression would yield a singleton set, while the indefinite expression would contain multiple alternatives. To rule out the bare noun cases, which in Shan are underspecified for number, it would be necessary to rule out sets of alternatives such that there is one member that is a sub-part of another alternative. It will be shown if this can account for adnominal distributive cases more broadly as well as the Shan distributive cases.

Summary. This project presents a previously unexplored feature of Shan distributivity that the distributive construction requires not only that the distributive key be specified by a quantity, but that the distributive share include a cardinal expression as well. This restriction on the semantics of more deeply embedded structures has not been reported in accounts of distributivity in other languages. This pertains to a cross-linguistic account of distributivity and the interpretation of indefinite expressions that needs to be explored further. For example, the distributive operator as operating over alternatives might be a way to account for the cases where *each* does not appear to be clause-bound as noted by Szabolcsi (2010).

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