The expression of exhaustivity and scalarity in Burmese

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<u>Summary:</u> We report on the use of the Burmese scalar particle *ma*. We propose a semantics for *ma* which accounts for its variable translations as 'even' and 'only.' In addition, we discuss the cooccurrance of 'even' *ma* with the sentence-final *-dar* ending, and offer a formal pragmatic account for this cooccurrence restriction. Possible extensions of this approach to other so-called "focus concord" phenomena or "*kakari-musubi*" (in the Japonic literature) will be discussed.

<u>Introducing ma</u>: Colloquial Burmese has a particle ma which in some contexts is translated as 'even' (1a) and in some contexts as 'only' (1b). Okell's 1969 reference grammar describes these two uses simply as " hma_A " 'even' and " hma_B " 'only' without describing their distributions. In addition, ma takes wh-phrases to form NPIs. (Examples in (1) are our own.)

- (1) a. Aung-ga ye-ma mə-θau?-kε-dar. b. Aung-ga ye-ma θau?-kε-dε.
 Aung-NOM water-MA NEG-drink-PAST-DAR Aung-NOM water-MA drink-PAST-REAL
 'Aung didn't even drink WATER.' 'It's WATER that Aung drank.'
 - c. ŋα bε-panθi-ma ma-yu-kε-bu.
 1 which-apple-MA NEG-take-PAST-REALIS.NEG
 'I didn't take any apple(s).'

In Okell's own examples, ma translated as 'even' cooccurs with negation and in questions and expressions of surprise, while ma is translated as 'only' otherwise. We have verified through our own elicitation work that local negation licenses the scalar 'even' interpretation for ma, while locally affirmative clauses yield the exhaustive interpretation. (Data on non-local negation at talk. Questions and other non-negative contexts triggering 'even' ma will also be discussed.)

<u>Proposal:</u> ma introduces the presupposition that "no stronger alternatives are true." ma takes propositional scope with complement p and alternatives C partially ordered by $>_S$ and presupposes:

(2)
$$\forall q \in C[(q >_S p) \rightarrow \neg q(w^*)]$$
 (= MAX_S(p)(w*) from Velleman et al 2012)

As discussed by Velleman et al (2012), a basic ordering $>_S$ is that of entailment: $p >_S q$ iff $p \to q$. Suppose $C = \{A, B, A \land B\}$ where A = 'that Aung drinks water' and B = the alternative 'that Aung drinks beer.' The entailment relation gives us two orderings statements: $A \land B >_S A$ and $A \land B >_S B$. This set of alternatives C ordered by entailment derives the exhaustive reading of ma in (1b):

Operiving the 'only'-like reading of ma (1b) with $>_S$ defined by entailment:

LF: [[Aung WATER_F drink] MA] assertion: A presupposition (2): \neg (A \land B)

The presupposition and assertion of (3) taken together give us the exhaustive, cleft-like interpretation of na: the prejacent is true and no stronger, conjunctive alternatives are true.

However, this same meaning leads to a triviality when ma scopes under a negation, as in (4). In this case, the presupposition introduced by ma, $\neg(A \land B)$, is entailed by the assertion $\neg A$.

(4) ma under negation (1a) with $>_S$ defined by entailment has no semantic contribution: LF: [[[Aung WATER_F drink] MA] NEG] assertion: \neg A presupposition (2): \neg (A \land B)

The use of *ma* in (4) does not contribute to the overall meaning and therefore its use is ungrammatical, ruled out for example by Crnič's (2011) Principle of Non-Vacuity.

Such contexts then necessitate additional, contextually-determined rankings. For example, in a context where $B >_S A$ — drinking beer is stronger (e.g. less likely, more noteworthy) than drinking water — ma under negation yields the presupposition $\neg B$ (5), yielding the 'even'-like reading.

(5) ma in (4) with \geq_S reflecting a contextual scale: presupposition (2): $\neg(A \land B) \land \neg B$

The introduction of the presupposition $\neg B$ in (5) makes the use of ma here meaningful and thus grammatical. This explains how ma under local negation is necessarily interpreted as scalar.

The vacuity problem in (4) however does not occur if other operators take scope between ma and negation at LF. This is observed in cases of ma in embedded clauses, with non-local negation, where the scalar ('even'-like) reading is blocked, resulting in a negated cleft reading. (Data at talk.)

Finally, for the formation of NPIs as in (1c), we follow Lahiri (1998) in taking the ma to associate with the wh as an existential quantifier, which results in a contradiction unless it crosses a downward-entailing operator such as negation (1c).

To summarize, our uniform semantics for *ma* derives its 'even'-like use in contexts with local negation and its exhaustive cleft-like use in contexts otherwise, and its use in NPI-formation.

<u>Sentence-final -dar</u>: The 'even' example in (1a) and 'only' example in (1b) not only differ in the presence of negation in (1a) but not in (1b): they also differ in their sentence-final mood morphemes. (1b) must end with the regular realis ending $-d\varepsilon$, whereas (1a) must end with the ending -dar. The regular realis ending for negative clauses is -bu, as seen in (1c). The ending -dar as in (1a) is instead used in headless relativization/nominalization, as in (6):

(6) [aya? po ce-dar]-ga John p^hyi?-dɛ. height more tall-DAR-NOM John COPULA-REALIS '{The taller one / the one that is taller} is John.'

We propose that the choice of the -dar ending reflects an information-structural requirement on relativization, in (7), formulated in terms of the Roberts' (2012) theory of discourse.

(7) Relativized clauses cannot resolve the immediate Question Under Discussion. Grammaticalization of the requirement in (7) and its extension to main clause edges explains its distribution in (1) and elsewhere in Burmese. Suppose the immediate QUD is "What did Aung drink?" We note that (1a) is relevant and informative, by reducing the space of possible answers, but it does not directly answer and resolve this question, requiring the use of *-dar*. In contrast, (1b) does answer this immediate QUD, making the use of *-dar* infelicitous.

The particle ma with sentential negation can also cooccur with a realis ending: see (8), which differs minimally from (1a) above in not using -dar. (8) is interpreted as a cleft scoping over negation, rather than 'even' as in (1a). This is predicted by our account: ma takes wide scope in (8), yielding an exhaustive cleft-like interpretation, as in (3), with negation in its scope. The realis ending is used rather than -dar because (8) fully resolves the QUD "What does Aung not drink?"

(8) Aung-ga ye-ma mə-θau?-kε-bu. Aung-NOM water-MA NEG-drink-PAST-REAL.NEG 'It's WATER that Aung doesn't drink.'

An extension to "focus concord": The approach to the distribution of main clauses with the relative clause ending *-dar* above, based on a grammaticalization and extension of the pragmatic requirement on relativized clauses in (7), offers a new approach to so-called "focus concord" or *kakari musubi* phenomena, which have been analyzed in terms of syntactic agreement. In the talk, we explore this pragmatic approach to "focus concord" and discuss an extension to contemporary Japanese *-no-da*, which Kato (1998:88–89) has noted to be similar in use to Burmese *-dar*.

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