A variably exhaustive and scalar focus particle and pragmatic focus concord in Burmese

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The Burmese particle *hma* expresses exhaustivity in some contexts but a scalar, *even*-like meaning in other contexts. We propose that *hma* is uniformly a not-at-issue scalar exhaustive, with semantics similar to that proposed for English *it*-clefts in Velleman, Beaver, Destruel, Bumford, Onea, and Coppock 2012. When *hma* takes wide scope, it leads to an exhaustive, cleft interpretation which is not scale-sensitive. When *hma* takes scope under negation, the resulting expression will have a scale-sensitive felicity condition.

We also analyze the sentence-final mood marker *dar*, as the choice of interpretation of *hma* often correlates with its presence or absence, in a manner similar to focus concord effects in other languages. We propose that *dar* is a marker of propositional clefts and argue that the semantics of *hma* and the pragmatic requirements of propositional clefts together derive this focus concord effect, as well as its exceptions.

Keywords   Burmese, focus particle, exhaustivity, scalarity, cleft, propositional cleft, focus concord / *kakari-musubi*

Contents

1 Introduction

This paper investigates the focus particle *hma* မှ in Colloquial Burmese which descriptively contributes exhaustivity in some contexts and a scalar meaning in others. The affirmative declarative sentence with *hma* in (1) has an exhaustive interpretation. The negative declarative sentence with *hma* in (2) has a scalar interpretation, similar to what is conveyed by English *not... even*.[1]

(1) **Exhaustive *hma* (cleft):**

Aung-ga   ye-ko-**hma**   thauq-keh-deh.
Aung-NOM water-ACC-HMA drink-PAST-NONFUT

'It's WATER that Aung drank.'

(2) **Scalar *hma* ('even'-like):**

Aung-ga   ye-ko-**hma**   ma-thauq-keh-dar.
Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR

≈ 'Aung didn't even drink WATER.'

In his reference grammar of Colloquial Burmese, Okell (1969: 284–286) includes two separate lexical entries for "*hma*$_A$" and "*hma*$_B$," respectively translated as 'only' and 'even' and corresponding to the uses in (1) and (2), with no description of the distributions of these two uses.

In this paper we propose a uniform semantics for *hma*. After some background on the Burmese verbal complex in section 2, we begin in section 3 by describing the environments associated with *hma*'s exhaustive and scalar uses. We propose in section 4 that *hma* is a not-at-issue scalar exhaustive with semantics similar to that proposed for English *it*-clefts in Velleman, Beaver, Destruel, Bumford, Onea, and Coppock 2012, and in section 5 we discuss similar particles which have been attested cross-linguistically.

We then discuss the semantics of the sentence-final mood particle *dar*, which commonly co-occurs with scalar uses of *hma* — as in (2) above — but not with exhaustive uses of *hma*, in section 6. This correlation appears similar to so-called focus concord effects in other languages, which many scholars have analyzed as an agreement-like morphosyntactic dependency between verbal heads and focus particles. In contrast,

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[1]The following abbreviations are used in glosses: NOM = nominative, ACC = accusative; NONFUT = non-future, FUT = future; NEG = negation. The mood marker DAR will be discussed in section 6. Here we follow the romanization for Burmese employed in Okell 1994, also discussed in Jenny and Hnin Tun 2016: 45–47. There is also a homophonous locative postposition *hma*, which we do not discuss here.

we propose that this apparent correlation in Burmese is best explained as an interaction between the semantics of *hma* and the independent pragmatic requirements of *dar*. We identify sentence-final *dar* as a marker of propositional clefts, marking the utterance as having a particular status in the organization of the discourse, following Sheil 2016. We show how this proposal explains the frequent correlation between the interpretation of *hma* and the presence or absence of *dar*, as well as their exceptions. Finally, we conclude following a brief note on the relationship between focus alternatives and QUDs.

2   Background: The Burmese verbal complex

In this section, we give a brief introduction to features of the Burmese verbal complex that will be relevant for our discussion. Burmese is a Tibeto-Burman language spoken in Myanmar, with default SOV word order. The basic verbal complex template in Burmese is given in (3). In particular, we will see in subsequent sections that the choice of sentence-final mood marker will be relevant for describing the distribution of different uses of *hma*.

(3)   **Verbal complex template:**

(negation) — verb stem — (past/progressive) — mood

In an affirmative declarative sentence, the verb stem combines with a post-verbal tense/aspect marker, if any, and a sentence-final mood marker. The regular mood markers are the non-future *deh* and future *meh*, illustrated in (4) below.[2] The use of a mood marker is obligatory.

(4)   **The basic mood morphemes *deh* and *meh*:**

a.	Aung-ga	ye-ko	thauq-keh-*(deh).	b.	thauq-*(meh)
	Aung-NOM	water-ACC	drink-PAST-NONFUT		drink-FUT
	'Aung drank water.'				'will drink'

Negation in a declarative sentence is expressed by the pre-verbal morpheme *ma* coupled with the sentence-final negative mood marker *bu*. The negative mood marker *bu* takes the place of the final mood markers *deh*/*meh*, obscuring the non-future/future distinction. (5) is, however, unambiguously past tense due to the independent *keh* past tense morpheme.

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[2]We follow Jenny and Hnin Tun 2016 in glossing these as non-future vs future, but we note that many other scholars of Burmese describe these markers as realis vs irrealis.

(5) **Sentential negation *ma* triggers *bu* mood marker:**

    a.   ma-thauq-keh-**{bu/*deh}**
            NEG-drink-PAST-{NEG/*NONFUT}

            'didn't drink'

    b.   ma-thauq-**{bu/*meh}**
            NEG-drink-{NEG/*FUT}

            'will not/does not drink'

There is one more mood marker, *dar*, which will become important in our discussion below. See for example (2) above. Like the negative mood marker *bu*, *dar* takes the mood slot in the verbal template, replacing other markers. As we show in section 6, the use of *dar* on a matrix clause verb reflects that the current utterance has a particular status within the organization of the discourse.

Another context where *dar* occurs is in relative clauses and certain nominalizations, where the use of *dar* is obligatory:

(6)   [$_{RC}$ Aung thauq-keh-**{dar/*deh}**]   ye-ga   cho-deh.
         Aung drink-PAST-{DAR/*NONFUT} water-NOM sweet-NFUT

    'The water that Aung drank is sweet.'

As discussed in Simpson 2008, both Colloquial Burmese (studied here) and Literary Burmese include a number of verbal endings associated with relativization and nominalizations which also have uses as verbal endings in particular types of matrix clauses. This is an instance of a pattern of historical grammaticalization well-attested across Tibeto-Burman languages; see e.g. DeLancey 2011. We return to this connection between the mood marker *dar* and its function as relativization/nominalization morphology in section 6.

3 The scalar and exhaustive uses of *hma*

The particle *hma* appears to give rise to different interpretations in different contexts, as reflected by its variable translations as 'only' or 'even' in Okell 1969: 284–286. In this section, we give a first description of the different environments which result in these different interpretations. We will see that the scalar, 'even'-like reading is only available in clauses with local (clause-mate) negation, and furthermore that this reading appears to correlate with the use of the sentence-final mood marker *dar*. The use of *hma* in affirmative clauses and negative clauses without *dar* have an exhaustive interpretation.

While this correlation of the scalar reading with *dar* holds for all examples in this section, we will show in section 6 below that it is not absolute, and can be dissociated in both directions. We argue in section 4 that the two readings of *hma* in negative clauses

reflects a scope ambiguity between *hma* and negation, and extend this analysis to similar variably exhaustive and scalar particles in other languages in section 5. Finally, in section 6, we explain how the two uses of *hma* in simple examples tend to correlate with the use or non-use of *dar*.

Before we begin, some discussion is in order regarding these notions of exhaustivity and scalarity. *Hma* is a constituent focus particle which adjoins to a focus-containing constituent. Let X be the stated, prejacent value of the focused constituent, and Alt be a contextually-determined set of alternatives to X. An *exhaustive* use is one which elicits an inference that the alternative propositions with X replaced by any alternative in Alt will be false. A *scalar* use is one where the felicity of the utterance with *hma* depends on a contextually-determined ranking of X with respect to its alternatives in Alt, based on their associated propositions' relative likelihood. Examples with exhaustive *hma* are not sensitive to such contextual ranking of relative likelihood.

Our speakers who are bilingual in Burmese and English translate the exhaustive uses of *hma* with an English *it*-cleft or *only* and translate the scalar uses with English *even*. (We will identify the exhaustive use as expressing cleft semantics rather than *only* semantics, so we will use English *it*-cleft translations for the exhaustive uses.) However, our description of particular uses as "exhaustive" or "scalar" is not determined by these speakers' English translations, and instead depends on our diagnostics for exhaustivity and scale-sensitivity. Our descriptions of *hma* as "exhaustive" or "scalar" are descriptive labels which reflect the overall contribution of *hma* in a particular example.

We begin with an illustration of scalar *hma*. Consider (8) evaluated in context (7). Here we refer to the proposition 'that Aung drank water' without negation as the prejacent. The use of *hma* in (8) requires that the prejacent be contextually more likely compared to its alternative — that it is more likely for Aung to drink water than for Aung to drink something else in (8a) — and is infelicitous when the prejacent is less likely, as in (8b).

(7)   **Shared context for examples in this section, (8–13), with two drinks:**

There were only two drinks available at the party last night: water and beer. Aung is a child, so he is more likely to drink water than beer.

(8) **Scalar *hma*:**

    a. Aung-ga ye-ko-**hma**   **ma**-thauq-keh-**dar**.
        Aung-ɴᴏᴍ water-ᴀᴄᴄ-ʜᴍᴀ ɴᴇɢ-drink-ᴘᴀѕᴛ-ᴅᴀʀ
        ≈ 'Aung didn't even drink WATER.'

    b. #Aung-ga biya-ko-**hma** **ma**-thauq-keh-**dar**.
        Aung-ɴᴏᴍ beer-ᴀᴄᴄ-ʜᴍᴀ ɴᴇɢ-drink-ᴘᴀѕᴛ-ᴅᴀʀ
        Intended: ≈ # 'Aung didn't even drink BEER.'

This scalar behavior of *hma* appears to be similar to that of so-called "scale-reversed" *even* (see e.g. Karttunen and Peters 1979: 25–27, Rooth 1985 ch. 4, König 1991: 71–73, Giannakidou 2007), which we use in the English translations in (8).

    An example of the exhaustive use of *hma* is presented in (9), evaluated in the same context (7). (9B) expresses that Aung drank water and that he drank nothing else, disallowing the continuation that Aung also drank beer. In example (9B), the prejacent 'that Aung drank water' is a relatively likely possibility given the context. But unlike in (8), the use of *hma* in (9) is not sensitive to the relative likelihood of the prejacent, as indicated by the felicity of (9B') where the prejacent is relatively less likely. (9B') is also exhaustive, disallowing a continuation that Aung also drank water.

(9) **Exhaustive *hma* (cleft):**

    A: I wonder what Aung drank.

    B: Aung-ga ye-ko-**hma**   thauq-keh-deh.
        Aung-ɴᴏᴍ water-ᴀᴄᴄ-ʜᴍᴀ drink-ᴘᴀѕᴛ-ɴᴏɴꜰᴜᴛ
        'It's WATER that Aung drank.'   # ...Aung also drank beer.

    B': Aung-ga biya-ko-**hma** thauq-keh-deh.
        Aung-ɴᴏᴍ beer-ᴀᴄᴄ-ʜᴍᴀ drink-ᴘᴀѕᴛ-ɴᴏɴꜰᴜᴛ
        'It's BEER that Aung drank.'   # ...Aung also drank water.

    What determines whether a particular use of *hma* will be interpreted as scalar or exhaustive? The examples which yield these different meanings in (8) and (9) above differ in two ways: the scalar (8) is negated and ends with the *dar* mood marker, whereas the exhaustive (9) is affirmative with default (here, non-future) mood markers. It appears that the local sentential negation and the sentence-final mood marker *dar* together lead to the scalar interpretation.

    We might hypothesize that any use of *hma* in a negative clause is necessarily scalar. This is incorrect. Consider example (10), again in context (7). *Hma* here is interpreted as exhaustive, scoping over negation.

(10) **Exhaustive *hma* with local negation:**

   A: I wonder what Aung didn't drink.

   B: Aung-ga   ye-ko-**hma**   **ma**-thauq-keh-**bu**.
      Aung-NOM water-ACC-HMA NEG-drink-PAST-NEG
      'It's WATER that Aung didn't drink.'   exhaustive > NEG

Recall that sentential negation *ma* triggers the use of the negative mood marker *bu* which is used here in (10). (10) contrasts minimally with the scalar *hma* examples in (8a), in just this choice of mood marker. With negation and the default negative mood marker *bu*, we yield exhaustive *hma* scoping over negation in (10). With negation and the *dar* mood marker, we yield the scale-sensitive interpretation observed in (8). This correlation between the scalar reading and the use of the mood marker *dar* holds of many examples. We will explain this effect, but also show that these factors are dissociable, in section 6.

The difference between the two uses of *hma* with negation becomes apparent in a context where Aung in fact did not drink anything. The scalar *hma* example in (8) is natural in a context where Aung in fact did not drink anything. This is seen in (11a).[3] Exhaustive *hma* scoping over negation in (10) requires that Aung drank everything else, and is therefore incompatible with this continuation, in (11b).

(11) **Scalar and exhaustive *hma* with negation, with continuations:**[4]

   a. Aung-ga   ye-ko-**hma**   **ma**-thauq-keh-**dar**.
      Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR

      Thu-ga bar-hma   ma-thauq-keh-bu.
      3sg-NOM what-HMA NEG-drink-PAST-NEG

      ≈ 'Aung didn't even drink WATER (=8a). He didn't drink anything.'

   b. #Aung-ga   ye-ko-**hma**   **ma**-thauq-keh-**bu**.
      Aung-NOM water-ACC-HMA NEG-drink-PAST-NEG

      Thu-ga bar-hma   ma-thauq-keh-bu.
      3sg-NOM what-HMA NEG-drink-PAST-NEG

      # 'It's WATER that Aung didn't drink (=10B). He didn't drink anything.'

Next we turn to the behavior of *hma* embedded under a higher, non-clause-mate negation, in example (12). The speaker of (12) is committed to the belief that Aung did

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[3]However, it does not require that nothing else was drunk by Aung. See the discussion of example (25) below.

[4]The continuation 'he didn't drink anything' involves an NPI 'anything' formed by a *wh*-word and the particle *hma*, which we note in section 7.

not drink water, but did drink something else, and that water would be an exhaustive answer to 'What did Aung drink?' These speaker commitments are given in (12a–c).

(12) *Hma* **under higher negation is exhaustive:**

[CP Aung-ga   ye-ko-**hma**   thauq-keh-deh]   **ma**-houq-**bu**.
    Aung-NOM water-ACC-HMA drink-PAST-NONFUT NEG-right-NEG

'It isn't WATER that Aung drank.'

    a.   ⤳ Aung didn't drink water.

    b.   ⤳ Aung drank something.

    c.   ⤳ if Aung drank water, he didn't drink anything else.[5]

This interpretation in (12) is that of an embedded exhaustive, rather than a scalar use such 'Aung didn't even drink WATER.' Empirically, the scale-insensitivity of *hma* embedded under higher negation is demonstrated by the acceptability of example (13), again evaluated in context (7) where it is less likely for Aung to drink beer than water. Example (13) minimally differs from (12) in referring to 'beer' instead of 'water.' We contrast the acceptability of both (12) with 'water' and (13) with 'beer' to the behavior of scalar *hma* in (8), whose felicitous use is sensitive to the relative likelihood of the prejacent.

(13) *Hma* **under higher negation is not scale-sensitive, cf (12):**

[CP Aung-ga   biya-ko-**hma** thauq-keh-deh]   **ma**-houq-**bu**.
    Aung-NOM beer-ACC-HMA drink-PAST-NONFUT NEG-right-NEG

'It isn't BEER that Aung drank.'

The fact that (12) is unambiguously an embedded exhaustive teaches us that a *local* negation is necessary for the scalar use of *hma* in (8). The speaker commitments of example (12) also show that the exhaustive inference of *hma* is not at-issue. The prejacent 'that Aung drank water' is the embedded clause's at-issue content and thus negated (12a), with the existential and (conditional) exhaustivity inferences (12b,c) projecting out of the higher negation. This accords with the behavior of English *it*-clefts; see especially discussion in Büring 2011, Büring and Križ 2013, and Velleman et al. 2012. The behavior in (12) is clearly unpredicted if *hma* were an at-issue exhaustive with a prejacent presupposition, as in English *only* (Horn, 1969). It is for this reason that we use English *it*-cleft translations for exhaustive *hma*.

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[5]Here we describe a conditional exhaustivity inference, following the discussion of English *it*-clefts in Büring 2011. Our speakers confirm that the speaker of (12) is committed to this claim of conditional exhaustivity.

4 Proposal

We propose a uniform semantics for *hma* as a not-at-issue scalar exhaustive, similar to the semantics proposed for English *it*-clefts in Velleman et al. 2012. We analyze the descriptively scalar and exhaustive uses of *hma* observed above as the result of a scope ambiguity: When *hma* takes widest scope (inside the clause), its interpretation is exhaustive. When *hma* scopes under negation, the resulting meaning will be scalar, sensitive to the relative likelihood of the prejacent with respect to its alternatives. The apparent correlation with the use of the sentence-final mood marker *dar*, observed above, will be discussed in section 6.

Hma encliticizes to the focus-containing constituent but takes propositional scope at LF within the same clause.[6] Let p be the intension of *hma*'s sister at LF, the prejacent proposition. C is the set of focus alternatives to p (Rooth, 1992) closed under conjunction and ordered by $<_{likely}$. *Hma* introduces the not-at-issue requirement in (14), which for concreteness we describe as a presupposition.

(14) **Presupposition of *hma*:**

$hma_C(p)(w^\star) = \forall q \in C \left[(q <_{likely} p) \rightarrow \neg q(w^\star) \right]$

where C is closed under conjunction

"No stronger alternative is true."

This meaning in (14) is a version of the MAX operator proposed in Beaver and Clark 2008: 261 and adopted for the not-at-issue part of English *it*-clefts by Velleman et al. (2012); see also Coppock and Beaver 2011, 2014. Our definition in (14) diverges in quantifying over a set of Roothian focus alternatives C rather than the current Question Under Discussion (Roberts, 1996/2012). This choice will be motivated by discussion in section 6, where we critique this notion of the "current question." The requirement that C be closed under conjunction accomplishes the same function as the assumption, made explicit in Coppock and Beaver 2011, 2014, that the assumed structure of a Question Under Discussion is a boolean lattice in Beaver & Clark's QUD-based formulation for MAX.

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[6]This can be thought of as *hma* moving from its pronounced position, in a clause-bound fashion, or as *hma* agreeing with a covert HMA on the clausal spine, with this dependency being clause-bound.

4.1 Exhaustive *hma*

We first consider the exhaustive use of *hma*, demonstrating with simple affirmative sentences. We will first model the behavior of example (1/9B) above. Based on the context considered in section 3, in (7), we let the set of alternatives C contain two atomic alternatives, A = 'that Aung drank water' and B = 'that Aung drank beer,' as well as their conjunction $A \wedge B$. The conjunctive alternative is necessarily less likely than each atomic alternative. In addition, given the context in (9) where Aung is a child, $A >_{likely} B$.

(15) **Alternatives in context (7), for example (9):**

$C = \{A, B, A \wedge B\}$

A = 'that Aung drank water' $>_{likely}$ B = 'that Aung drank beer'

$\searrow_{likely}$ $\swarrow_{likely}$

$A \wedge B$ = 'that Aung drank water and beer'

At LF, *hma* takes the proposition 'that Aung drank [water]$_F$' as its sister, so the prejacent $p = A$. Given the alternatives C from (15), *hma* will assert the prejacent A and presuppose that no less likely alternative is true. There are two less likely alternatives, B and $A \wedge B$, resulting in the presupposition in (16b):

(16) **Computing *hma* in (1/9B):**

LF: [*hma* [Aung WATER$_F$ drank]]

a. asserts: A

b. presupposes: $hma_C(A)(w^\star) = \neg(A \wedge B) \wedge \neg B$

$\Rightarrow$ exhaustive (cleft)

We predict that (1/9B) will assert the prejacent A and presuppose the negations of B and $A \wedge B$. The combined result is an exhaustive claim (cleft): Aung drank water (at-issue) and could not have drank anything else (not at-issue).

Now consider instead if the prejacent were B, 'that Aung drank beer,' in the same context (7) with alternatives C in (15). This corresponds to the use of *hma* in (9B'), with the prejacent referring to beer. In this case, when computing the presupposition of *hma*, there is only one alternative that is less likely than the prejacent: the conjunctive alternative $A \wedge B$.

11

(17) **Computing *hma* in (9B'):**

   LF: [*hma* [Aung BEER_F drank]]

   a.   asserts: B

   b.   presupposes: $hma_C(B)(w^\star) = \neg(A \wedge B)$

   $\Rightarrow$ exhaustive (cleft)

This results in the assertion of B and the presupposition of $\neg(A \wedge B)$. However, taken together, these requirements entail that A must be false. In this way, the same scalar meaning for *hma* in (14) results in an exhaustive interpretation for both a more likely prejacent (A with 'water') and a less likely prejacent (B with 'beer').

    Note furthermore that this application of *hma* resulting in exhaustive, cleft semantics does not rely on a relative ordering of the two atomic alternative propositions. Even if the context supports a partial order with A and B left unordered, or if the relative likelihood of A and B is unknown, *hma* will still presuppose the negation of the conjunctive alternative, $\neg(A \wedge B)$, resulting in exhaustive semantics.

4.2 *Hma* in negative clauses

Next we consider the behavior of *hma* in the presence of local negation. We propose that both scope possibilities *hma* > NEG and NEG > *hma* are possible at LF. *Hma* > NEG will yield a cleft with negation in its scope, as in example (10) above. In contrast, NEG > *hma* will yield the scalar use of *hma* described above.

    In section 3 above, we saw that the scalar and exhaustive interpretations of *hma* in the presence of local negation appear to correlate with the presence or absence of the sentence-final *dar* mood marker, respectively. In section 6, we will show that this apparent correlation comes about pragmatically and is not absolute. In the remainder of this section, then, we will simply consider the contribution of *hma* with both scope possibilities, *hma* > NEG and NEG > *hma*, and return to the interaction with *dar* in section 6.

4.2.1   Exhaustive *hma* over negation (*hma* > NEG)

We begin first with the consideration of *hma* > NEG scope, which will derive a cleft with negation in its scope, as in (10). Following the notation from above (A = 'that Aung drank water,' B = 'that Aung drank beer'), C will now include the negated atomic alternatives $\neg A$ and $\neg B$, as well as the conjunctive alternative $\neg A \wedge \neg B$. Again following

the context in (7), the atomic alternatives are ordered $\neg A <_{likely} \neg B$ and the conjunctive alternative is again less likely than each atomic alternative.

(18) **Alternatives in context (7), with negation in scope:**

$C = \{\neg A, \neg B, \neg A \wedge \neg B\}$

$\neg A =$ 'Aung didn't drink water' $<_{likely}$ $\neg B =$ 'Aung didn't drink beer'

$\searrow_{likely}$ $\qquad\qquad$ $\swarrow_{likely}$

$\neg A \wedge \neg B =$ 'Aung didn't drank water and didn't drink beer'

The use of *hma* with prejacent $\neg A$ or $\neg B$ will both yield an exhaustive interpretation, just as *hma* did without negation in (16–17) above. Here we illustrate the case of $p = \neg A$, corresponding to example (10B) above. The presupposition of *hma* will require that the conjunctive alternative $\neg A \wedge \neg B$ be false. Together with the assertion that Aung didn't drink water ($\neg A$), we yield the exhaustive claim that water is the only thing that Aung didn't drink.

(19) **Computing *hma* in (10), *hma* > NEG:**

LF: [*hma* [NEG [Aung WATER$_F$ drank]]]

a.　asserts: $\neg A$

b.　presupposes: $hma_C(\neg A)(w^\star) = \neg(\neg A \wedge \neg B) = A \vee B$

$\Rightarrow$ cleft > NEG

We similarly yield an exhaustive claim if *hma* applies to $\neg B$:

(20) **Computing *hma*, *hma* > NEG, with prejacent $\neg B$:**

LF: [*hma* [NEG [Aung BEER$_F$ drank]]]

a.　asserts: $\neg B$

b.　presupposes: $hma_C(\neg B)(w^\star) = \neg(\neg A) \wedge \neg(\neg A \wedge \neg B) = A \wedge (A \vee B)$

$\Rightarrow$ cleft > NEG

Following the logic of (16–17) above, *hma* in both (19) and (20) result in an exhaustive claim of their prejacent. *Hma* with scope over negation is compatible with both more likely alternatives and less likely alternatives, i.e. it is not scale-sensitive.

4.2.2 Scalar *hma* (NEG > *hma*)

We now consider the contribution of *hma* with scope under negation. In contrast to the uses of *hma* modeled above, which uniformly contribute exhaustivity, we argue that the NEG > *hma* configuration results in the descriptively scale-sensitive use of *hma* akin to the so-called scale-reversed 'even.' Concretely, we will model the examples in (8) above. Because negation is outside of the scope of *hma*, the relevant set of alternatives C will be without negation as in (15) above, repeated here in (21). The two atomic alternatives are again ordered with $A >_{likely} B$, since the context in (7) assumes Aung to be a child and therefore more likely to drink water than beer.

(21) **Alternatives in context (7), below negation:** = (15)

$C = \{A, B, A \wedge B\}$

$A =$ 'that Aung drank water' $>_{likely}$ $B =$ 'that Aung drank beer'

$\searrow_{likely}$ $\swarrow_{likely}$

$A \wedge B =$ 'that Aung drank water and beer'

We now compute the LFs for (8), with higher negation, with A and B in turn as the prejacent. Since the alternatives C are the same as in the computation of (16–17) above, the presuppositions introduced by *hma* will be equivalent. With A as the prejacent, *hma* presupposes the negation of B as well as the negation of the conjunction $A \wedge B$ (22b). With B as the prejacent, *hma* simply presupposes the negation of the conjunctive alternative $A \wedge B$, as this is the only alternative that is less likely than the prejacent in C (23b). However, in contrast to (16–17) above, the at-issue content (respectively, A and B) will be negated above *hma*. Since presuppositions project through negation, the presuppositions in (22–23) — equivalent to those in (16–17) — will project unaffected.

(22) **Computing *hma* in (8a), NEG > *hma*:**
    LF: [NEG [*hma* [Aung WATER$_F$ drank]]]

a. asserts: $\neg A$

b. presupposes: $hma_C(A)(w^\star) = \neg(A \wedge B) \wedge \neg B$

14

(23) **Computing *hma* in (8b), NEG > *hma*:**
　　 <u>LF:</u> [NEG [*hma* [Aung BEER$_F$ drank]]]

　　 a.　asserts: $\neg B$

　　 b.　presupposes: $hma_C(B)(w^\star) = \neg(A \wedge B)$ 　　　　　*violates Non-Vacuity (24)*

We consider each of these results in turn. (22) illustrates the case where the prejacent is A = 'that Aung drank water,' the contextually more likely alternative. The presupposition of *hma* here requires that the contextually less likely alternative B be false. In contrast, consider the contribution of *hma* in (23). Here the predicted presupposition $\neg(A \wedge B)$ is entailed by and logically weaker than the assertion $\neg B$.

　　 We adopt the view that the use of focus particles such as *hma* is governed by a Non-Vacuity condition such as (24) from Crnič 2011.

(24) **The Principle of Non-Vacuity (Crnič, 2011: 110):**
　　 The meaning of a lexical item used in the discourse must affect the meaning of its host sentence (either its truth-conditions or its presuppositions).

To evaluate a use of *hma* for Non-Vacuity, we compare its overall meaning contribution to that of the utterance without *hma*. The addition of *hma* in (22) is contentful, as it expresses presuppositional content beyond the commitments made by the speaker in their assertion. The same goes for the use of *hma* in the descriptively exhaustive uses in (16–17) above. However, the addition of *hma* is not contentful in (23): The presupposition introduced by *hma*, $\neg(A \wedge B)$, is logically weaker than the assertion and therefore its addition in (23) is uninformative. A Non-Vacuity principle such as in (24) successfully rules out the use of *hma* in (8b/23).

　　 The end result is that the felicitous use of *hma* scoping under negation will depend on the relative position of the prejacent on the contextually-determined scale of likelihood. *Hma* is infelicitous when the prejacent is the least likely alternative, as in (23). The direction of this asymmetry also explains why, in the basic case, scalar *hma* is naturally translated into English with scale-reversed *even*.

　　 The prediction of the present analysis is that *hma* does not require its prejacent to be at an extreme end of the scale. *Hma* only requires that there exists at least one less likely alternative in the set of alternatives C which will be meaningfully excluded by the addition of *hma*. In the following example, the context is set up so that there are three alternatives on a scale. Scalar *hma* can be grammatically used to target the middle alternative, with 'tea,' presupposing the negation of 'Aung drank beer,' the least likely

alternative. The felicity of the continuation 'He drank water' serves to show that *hma* in (25) does not exclude the most likely alternative, with 'water.'[7]

(25) *Hma* **does not require the end of the scale:**
      Context: There is a party with water, tea, and beer. Aung is a child, so he is most likely to drink water, also likely (but less likely) to drink tea, and least likely to drink beer.

      Aung-ga   lepatyei-**hma ma**-thauq-keh-**dar**.
      Aung-NOM tea-HMA   NEG-drink-PAST-DAR
      literally 'Aung didn't drink HMA tea.'

         Thu-ga   yei-ko   thauq-keh-deh.
         3sg-NOM water-ACC drink-PAST-NFUT
         'He drank water.'

It's worth noting that it's not always the case that *hma* within the scope of negation leads to such a scale-sensitive asymmetry on its felicitous use. See for example (12) above, where *hma* is in an embedded clause, under matrix negation. The variant of (12) with 'beer' in place of the focus 'water' is also grammatical, in the same context. We propose that Non-Vacuity is evaluated cyclically, at the completion of each clause or phase. In example (12), the addition of *hma* is meaningful at the embedded CP level, regardless of the choice of focus, licensing the use of *hma*. This whole meaning is then negated by the higher negation.

Together with an independently motivated Non-Vacuity condition on the use of focus particles (24), our uniform analysis for the semantics of *hma* as a not-at-issue scalar exhaustive successfully derives the distribution of felicitous and infelicitous uses of *hma*, including its uses which may at first glance be described as "exhaustive" or "scalar." These patterns are summarized in the table below.

(26) **Summary:**

     $C = \{A, B, A \wedge B\}, A >_{likely} B$

	$p = A$	$p = B$	
[*hma p*]	✓ (16)	✓ (17)	"exhaustive *hma*" (cleft)
[*hma* [NEG *p*]]	✓ (19)	✓ (20)	"exhaustive *hma*" (cleft) > NEG
[NEG [*hma p*]]	✓ (22)	* (23)	"scalar *hma*"

[7]This behavior seems to importantly contrast from the behavior of English *even*, which does require its prejacent to be at the end of the scale, at least amongst alternatives explicitly mentioned in the preceding context. See especially examples (7) and (8) in Greenberg 2016: 4.

5 Cross-linguistic comparison and extensions

A number of other languages have focus particles with behavior similar to that of Burmese *hma* described in this paper. In each of these cases, a particle has scalar or exhaustive interpretations in the context of local negation, but only an exhaustive interpretation in affirmative clauses. Although we do not develop full analyses for each particle below, their behaviors below strongly support our analysis for Burmese *hma* as a more general approach to the behavior of such particles cross-linguistically.

We first consider the behavior of Blackfoot *ikak*, which appears as part of the verbal complex. Bliss (2010, 2013) observes that in the absence of negation, *ikak* is unambiguously interpreted as an exhaustive particle, translated by Bliss using English 'only' (27).[8]

(27) **Exhaustivity with Blackfoot *ikak*:** (Bliss, 2013: 13)

Na Doris **kák**sinsskaka'pssiwa.
anna-wa Doris **ikak**-inasskaka'pssii-wa
DEM-PROX Doris IKAK-be.tidy.AI-PROX

'Doris is only tidy.' (i.e., not friendly and clever)

In the presence of negation, *ikak* yields an exhaustive or scalar interpretation, depending on its linear order with respect to negation. Negation can be expressed in Blackfoot using the higher, clausal negator *máát* or the lower, predicate negator *sa*. Bliss shows that *máát* necessarily precedes *ikak*, with *ikak* then giving the sentence a scalar meaning, translated by Bliss using 'even' (28a). The predicate negator *sa* can precede or follow *ikak*. If *sa* precedes *ikak*, the sentence is again interpreted with a scalar flavour (28b). If *sa* follows *ikak*, *ikak* again introduces an exhaustive meaning, scoping over negation (29).

(28) NEG > *ikak* **yields a scalar meaning:**

a. Anna Carmelle **máátsikak**ohkottsinooyiiwa
ann-wa Carmelle **maat-ikak**-ohkott-inoo-yii-wa
DEM-PROX Carmelle NEG-IKAK-ABL-see.TA-3:4-PROX

anniskayi píítaay.
ann-yi-hk-ayi piitaa-yi
DEM-OBV-INVIS-ayi eagle-OBV

'Carmelle can't even see that eagle.' (ibid.: 232)

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[8]Here we reproduce Bliss's examples as presented, with first lines reflecting surface forms and second lines giving underlying phonological forms for each morpheme. See Bliss 2013 and references there for discussion of the relevant phonological processes, as well as glosses for other morphemes.

b. Anna   Carmelle íínikksiistapoowa
   anna-wa Carmelle ii-inikk-miistap-oo-wa
   DEM-PROX Carmelle IC-angry-away-go.AI-PROX

      kám**saikak**saapi'si   píítaa.
      kam-**sa-ikak**-yaapsi-hsi piitaa
      if-NEG-IKAK-see.AI-CONJ eagle
      'Carmelle will leave angry if she doesn't even see an eagle.'   (ibid.: 13)

(29) *Ikak* > NEG **yields exhaustive meaning:**   (ibid.: 13)

   Na   Doris **kaksá**ínskaka'pssiwa.
   an-wa   Doris **ikak-sa**-insskak-a'pssi-wa
   DEM-PROX Dorris IKAK-NEG-tidy-be.AI-PROX

   'Doris is only not tidy.' (i.e., she's friendly and clever; she's only not tidy.)

Blackfoot *ikak* is a strong candidate for the adoption of our analysis for Burmese *hma*. In particular, Bliss (2013, p.c.) observes that the scope of preverbal operators generally tracks their linear order in the Blackfoot verbal complex. The disambiguation of the interpretation of *ikak* based on its linear order with respect to negation (28–29) thus adds further support to our analysis, which treats such alternations of variably exhaustive and scalar particles as due to a scope ambiguity with respect to negation.

A similar pattern is observed in Hindi with the focus particle *hii*. Bhatt 1994 and Bajaj 2016[9] observe that the Hindi particle *hii* has an exclusive use in basic examples, as in (30). (Although this exhaustive use of *hii* is translated as 'only' in both of these works, discussion in Bhatt 1994: 11 suggests that it might behave more like a cleft.)

(30) **Exhaustivity with Hindi -*hii*:**   (Bhatt, 1994: 1)

   Raam-ne-hii Siitaa-ko dekhaa.
   Ram-ERG-HII Sita-ACC see.PRF.3.SG

   'Only Ram saw Sita.'

However, in the context of negation, *hii* is ambiguous between exhaustive and scalar readings, translated by Bhatt using English 'only' and 'even' (31). According to Bhatt (1994), the exhaustive > NEG reading is more accessible if the object is scrambled, but experimental work in Bajaj (2016) reveals that this reading is in fact also possible without scrambling. Based on our analysis of Burmese *hma*, we suggest that the observed ambiguity in (31) also arises due to a scope ambiguity with respect to negation.

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[9]Bajaj 2016 also discusses other "intensifier" uses of *hii*, which we set aside here.

(31) **Ambiguity of Hindi *-hii* with negation:** (Bhatt, 1994: 8)

[Ram ke-paas]-**hii** bandook nahin hai
Ram with   -ʜɪɪ gun   ɴᴇɢ be-ᴘʀs

a. 'Only Ram doesn't have a gun.' or

b. 'Even Ram doesn't have a gun.'

A final particle that we discuss here is the *c* enclitic in Marathi. Deo (2014) points out that the meaning of Marathi *c* closely parallels that of Hindi *hii*. In some cases, *c* gives rise to an exhaustive reading, described as introducing a "nothing other than" inference (Deo, 2014: 7), which is variably translated using 'only' (32a) or with a cleft (32b). But Marathi *c* leads to a scalar meaning in other examples, such as (33). Although Deo does not point it out, it appears from the data provided that the scalar interpretation always cooccurs with negation.

(32) **Exhaustive Marathi *c*:** (Deo, 2014: 3)

a. Context: What did Anu bring to the potluck?

Anu-ne pulāv-**ac**   ān-lā.
Anu-ᴇʀɢ rice.ɴᴏᴍ.sɢ-c bring-ᴘᴇʀꜰ.ᴍ.sɢ
'Anu only brought rice.'

b. Context: The police have now proved that...

tyācyā   bhābā-ne-**c** tyā-cyā khūn.
his.ᴏʙʟ.ᴍ.sɢ brother-ᴇʀɢ-c he-ɢᴇɴ murder.ɴᴏᴍ.ᴍ.sɢ
'It was (definitely) his brother who murdered him.'

(33) **Scalar Marathi *c*:** (ibid.)

Context: Did his friends help him out of his financial problems?

Nahii, [tyaacya   bhaava-ne] -**c** tyaa-laa madat
ɴᴇɢ   his.ᴏʙʟ.ᴍ.sɢ brother-ᴇʀɢ-c he-ᴅᴀᴛ help.ɴᴏᴍ.ꜰ.sɢ

keli   nahii.
do-ᴘᴇʀꜰ-ꜰ.sɢ ɴᴇɢ

'No, even his brother didn't help him (let alone his friends).'

Deo 2014 proposes that *c* associates with the strongest true alternative among the set of propositional alternatives, compatible with our description of *hma* (14) as requiring that no stronger alternative be true. For Deo, to account for the full range of uses of *c*, the choice of the "strongest true alternative" is determined based on contextual "expectations" which is defined in vague pragmatic terms. We suggest

that consideration of the scope interactions between negation and *c* — following our analysis of Burmese *hma* developed here — can lead to a better, uniform understanding of the semantic contribution of Marathi *c*.

6 Focus concord and the effect of sentence-final *dar*

In this section we return to the interaction of the sentence-final mood marker *dar* with the interpretation of *hma*. As we saw in section 3, *hma* in the presence of local negation may introduce (cleft) exhaustivity with scope over negation or leads to a scalar reading, akin to English scale-reversed *even*. In section 4, we attributed this difference to a scope ambiguity between negation and *hma*, which was further supported by the behavior of Blackfoot *ikak* in section 5, where the relative scope of these ingredients is morphologically clear.

But there is also another factor at play in distinguishing these uses of *hma*. In the basic Burmese examples considered in section 3 — repeated in (35) and (36) — this choice of interpretation appears to correlate with the presence or absence of the sentence-final mood marker *dar*. These facts are summarized in (34).

(34) **Two interpretations for *hma* with local negation, from section 3:**

	description		mood marker	LF
a.	"scalar *hma*"	(35)	*dar*	NEG > *hma* (22)
b.	"exhaustive *hma*" > NEG	(36)	default (*bu*)	*hma* > NEG (19)

(35) **Scalar *hma*:**   =(8a)

Aung-ga   ye-ko-**hma**   **ma**-thauq-keh-**dar**.
Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR

≈ 'Aung didn't even drink WATER.'

(36) **Exhaustive *hma* > NEG:**   =(10)

Aung-ga   ye-ko-**hma**   **ma**-thauq-keh-**bu**.
Aung-NOM water-ACC-HMA NEG-drink-PAST-NEG

'It's WATER that Aung didn't drink.'

The question we address in this section is how to explain this apparent correlation between the presence or absence of sentence-final *dar* and the LF scope of *hma* (34). We first situate this alternation within the existing literature on *focus concord* phenomena

and their analysis in section 6.1. We then present our analysis of the focus concord-like correlation in Burmese between *dar* and the interpretation of *hma*. In section 6.2, we propose that Burmese sentence-final *dar* is a marker of propositional clefts (see e.g. Sheil, 2016). We then explain the observed correlation as an epiphenomenonal effect of the types of discourses where scalar and exhaustive are frequently natural, in section 6.3. There we also show that this correlation is in fact not absolute, and can be dissociable in both directions in the right discourse context, as predicted by our account.

Finally, in section 6.4, we discuss a detail in our formulation of the semantics of *hma*: the set of alternatives *C*. Beaver and Clark 2008 and related works have proposed that focus particles conventionally refer to the "current question under discussion" as the source of alternatives to quantify over. A look at the use of *hma* in discourse, together with our understanding of the PC pragmatics of sentence-final *dar* will raise challenge to this "current question" approach, supporting our formulation for *hma* above.

6.1   Focus concord

One way to describe the apparent correlation summarized above in (34) is as a dependency between scalar *hma* and sentence-final *dar*. Very similar dependencies have been described in the literature under the banner of *focus concord*, where the use of a particular focus particle necessitates a particular inflection on the containing clause's verb.

A well studied case is focus concord in Sinhala (Indo-Aryan): verbs have two endings, the descriptively "neutral" -*a*-final form and the -*e*-final form which appears when one of a certain set of focus particles is present and takes scope over the clause (Kishimoto 2005, 2018; Hagstrom 1998; Slade 2011, 2018, and references there). Consider the contrast between the basic Sinhala sentence in (37a), which ends with an -*a*-final form verb, versus (37b) with narrow (cleft) focus on the object with the optional particle *y*,[10] which triggers the -*e*-final verb form.

(37)   **Focus concord in Modern Colloquial Sinhala:**   (Slade, 2018: 3)

a. Mam ē   pot kiyeww**a**.
   I.ɴᴏᴍ that book read.A

   'I read that book.'

b. Mam ē   pot(-**y**) kiyeww**e**.
   I.ɴᴏᴍ that book-ʏ read.E

   'It was that book that I read.'

Another well studied example is focus concord in Old Japanese, which is termed

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[10]We assume that a covert version of *y* is present for cleft focus in (37b), even if it is not pronounced.

kakari-musubi in Japanese (Whitman 1997; Hagstrom 1998; Watanabe 2002; Yanagida 2006; Aldridge 2018, and references there). Regular finite clauses end with a form known as "conclusive" (Japanese *shuushi*; ss) as in (38a), but the use of certain focus particles such as *zo* triggers the use of the adnominal verb ending (*rentai*; RT) as in (38b).[11]

(38) **Focus concord in Old Japanese:** (Hendricks, 2000: 156–157)

  a. Yuki siro-**si**.
   snow white-ss

   'The snow is white.'

  b. Yuki-**zo** siro-**ki**.
   snow-zo white-RT

   'It is the snow which is white.'

Furthermore, in both Sinhala and Old Japanese, there is a connection between the verb form triggered by focus concord and relativized/nominalized clauses. The *-e-* final verb form required by focus constructions in Sinhala historically derives from clausal nominalizations, although it does not synchronically have such functions (Slade, 2011: ch. 11). In Old Japanese, the verb form triggered by *zo* and other focus particles as in (38b) is the adnominal (*rentai*) form, so called as it is also used in relative clauses.[12]

This same connection is observed in the Burmese pattern studied here as well. Recall from section 2 that the marked mood marker which appears to cooccur with the use of scalar *hma* is *dar*, which is also the verb form used for relative clauses and clausal nominalizations. Although not conclusive, this parallel further motivates the discussion of the Burmese *hma* facts in relation to the existing literature on focus concord.

We can imagine broadly two modes of explanation for such focus concord phenomena. The first is that this correlation is enforced in the morphosyntax. Focus particles enter into a morphosyntactic dependency with a high, clausal head, requiring a particular verbal inflection to be realized. This is in fact the dominant approach to focus concord phenomena — see e.g. Kishimoto 2005, 2018; Hagstrom 1998; Slade 2011 for Modern Colloquial Sinhala and Ikawa 1998; Watanabe 2005; Kuroda 2007;

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[11]In glossing these forms as -ss and -RT, we follow Aldridge 2018. Another focus particle, *koso*, requires the use of yet another ending, known as *izen* "realis" inflection.

[12]There are, however, other cases of focus concord where the verb form triggered from has no known diachronic or synchronic connection to nominalization. For example, focus concord is attested in a number of Northern Ryukyuan (Japonic) languages, but with focus constructions triggering a dedicated verb form independent of nominalizing inflection; see e.g. Shimoji 2018 and citations there.

Aldridge 2018 for Old Japanese — although individual accounts vary as to the specific type of morphosyntactic dependency, e.g. an Agree relationship, (covert) movement, or other. Specifically for the behavior of Burmese *hma*, where we have argued above for a unified analysis of exhaustive and scalar *hma*, a syntactic account would take the following form: The presence of *hma* scoping under negation triggers or correlates with the presence of *dar*, whereas the non-*dar* default mood marker is used otherwise.

The second type of account for such a focus concord effect is more indirect, based on the independent semantics/pragmatics associated with the choice of verbal inflection. Suppose particular semantic or pragmatic functions can be attributed to the different verbal inflections involved in a focus concord system. If the use of particular focus particles is semantically or pragmatically compatible with some verbal inflection options but not others, we may be able to derive the focus concord effect as a semantic interaction between independently motivated components. This is precisely the type of approach we argue for in the next section for the Burmese *hma* – *dar* correlation observed above.

We are aware of just one previous work arguing for such an approach to focus concord phenomena. Shimoji 2009, 2011 describes an interaction in the Irabu dialect of Miyako Ryukyuan (Japonic > Southern Ryukyuan) which he calls "quasi-*kakari-musubi*."[13] Past tense verbs come in two mood variants, referred to in Shimoji 2009 as the unmarked form and an -*m*-final form.[14] When the focus particle *du* is used, a past tense clause must show unmarked inflection.

(39) **Verb inflection options in Irabu past tense clauses with *du*:**

(Shimoji, 2011: 120)

a. Ba-a   kuruma-u-**du** vv-tar.   b. *... vv-ta-**m**.
   1sg-TOP car-ACC-DU   sell-PAST   sell-PAST-M
   'I sold a car.'

At first glance, this appears to be a focus concord pattern with the familiar profile from Modern Colloqiual Sinhala and Old Japanese. The use of a particular focus particle (*du*) appears to necessitate the use of a particular verbal inflection. Furthermore, this -*m*-less "unmarked" form is also the adnominal form used in relative clauses (Shimoji, 2011: 117), strengthening the parallel to these other patterns.

But Shimoji shows that the Irabu pattern is different from these other focus concord interactions in two important ways. First, when we look at non-past clauses, which

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[13]We thank Chris Davis (p.c.) for bringing Shimoji's work to our attention.
[14]The -*m*-final form is called "realis" in Shimoji 2011.

allow for four different final inflections — rather than the just two options, unmarked vs -*m*-final, in past tense clauses — we see that *du* does not necessitate the use of the "unmarked" ending in non-past clauses; the "irrealis intentional" and "irrealis optative" inflections are also compatible with *du*, although the -*m*-final form is again disallowed:

(40) **Verb inflection options in Irabu non-past clauses with *du*:**

a. Ba-a   kuruma-u-**du** vv-∅.
   1sg-TOP car-ACC-DU   sell-NONPAST
   'I sell a car.'

b. ... vv-di.
    sell-IRR.INT
   'I will (intend to) sell a car.'

c. ... vv-baa-i.
    sell-IRR.OPT-eh
   'I want to sell a car.'

d. *... vv-∅-**m**.
    sell-NONPAST-M

Shimoji thus argues that *du* is thus best described as *disallowing* cooccurrance with the -*m*-final form, rather than specifically *requiring* the unmarked form, leading to his description of the pattern as "quasi-*kakari-musubi*."

Second, main clauses in Irabu without any focus particle can use the unmarked or realis verbal inflection, with the -*m*-final form expressing "(a) [the] speaker's perceived certainty, and (b) high information value, in that the speaker indicates that his message is new information to the hearer as the hearer does not know, or has a wrong assumption about, the truth of the proposition" (Shimoji, 2011: 122). Shimoji argues that this is the key to the cooccurrence restriction with *du*: "since the [-*m*-final form] expresses new information to the hearer, it should never co-occur with a focus marker, since the predicate in a focus construction should be presupposed... Thus it is this pragmatic feature of the [-*m*-final form] that leads to the exclusion of this form as the predicate form in the focus construction" (Shimoji, 2011: 124). Setting the details of this interaction aside, the intuition behind Shimoji's analysis is clear: the -*m*-final verb form has a particular pragmatic requirement which, according to Shimoji, is incompatible with the use of the focus particle *du*.

With this background on focus concord and analytic approaches to such phenomena in place, we now return to the interaction between the different readings of Burmese *hma* and sentence-final *dar*. Recall that in the basic data in section 3, *hma* in a negative clause with *dar* was interpreted as scalar (analyzed as NEG > *hma*), whereas *hma* in a negative clause without *dar* was interpreted as exhaustive (*hma* > NEG). This is the

focus-concord-like interaction we intend to explain, summarized above in (34).

We will argue that this apparent correlation observed above is due to the independent pragmatics associated with sentence-final *dar*, and does not reflect a morphosyntactic dependency, similar to Shimoji's analysis for "quasi" focus concord in Irabu. Specifically, we will argue that *dar* marks main clauses as *propositional clefts* (PC) in the sense of Sheil 2016, which are utterances that have a particular status in the organization of the discourse. Clauses with scalar *hma* often — but not always — have the status of PCs, and thereby exhibit the *dar* mood marker, whereas clauses with exhaustive *hma* often — but again not always — are not PCs and thus are not *dar*-marked.

6.2 Sentence-final *dar* as a marker of propositional clefts

Sheil 2016 presents a study of so-called *propositional cleft* (PC) constructions in Scottish Gaelic and cross-linguistically. By way of example, we first consider an example of a canonical cleft in Scottish Gaelic is (41). The structure opens with a copular verb *'s* and so-called "augment" pronoun,[15] followed by the focused pivot constituent and a gapped clause. For these constructions, Sheil adopts the semantics for English *it*-clefts developed in Velleman et al. 2012.

(41) **Scottish Gaelic cleft (Adger 2011: 1, reproduced in Sheil 2016: 81):**

'S   ann   [pivot do Mhàiri] [CP a   thug   Calum an cat ___].
COP in.3msg   to Mary   C.REL give.PAST Calum the cat

'It's to Mary that Calum gave the cat.'

Propositional clefts in Scottish Gaelic share the same morphosyntactic ingredients as in clefts such as (41) but notably do not have any pivot constituent separated from the rest of the embedded clause.

(42) **Scottish Gaelic propositional cleft (Sheil, 2016: 43–44):**

Context: When they came, he had let the fields be eaten by the sheep.

A: By whom [i.e. whose authority] did you eat the fields?

B: It was not I that ate them at all.

'S   ann   [CP a   dh'ith na   caoraich eud].
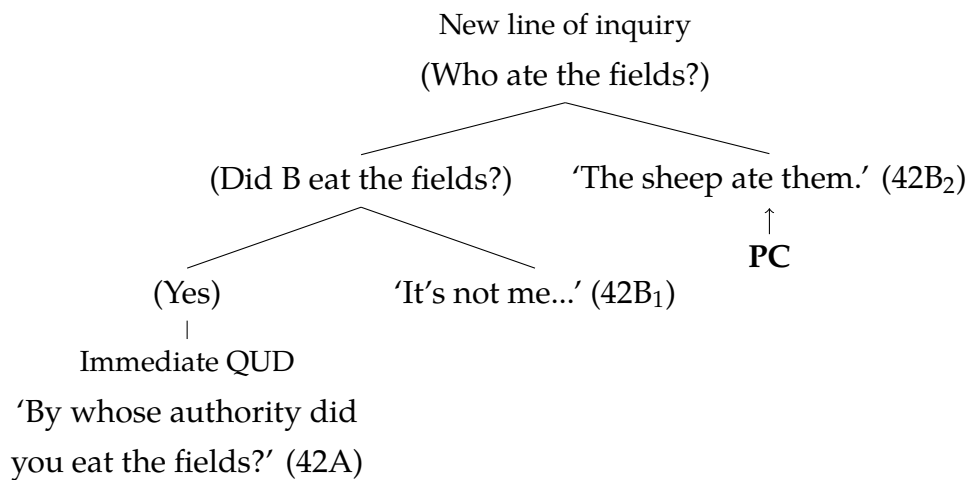COP in.3msg   C.REL eat.PAST the.PL sheep.PL 3pl
'The sheep ate them.' (PC)   literally: It's that the sheep ate them.[16]

Sheil argues that "the PC is licensed in a discourse where there is an unresolved or unaddressed question, and the PC functions in this context to *revise the line of inquiry* in the discourse, either providing an answer to the unresolved or unaddressed question" (p. 31, emphasis ours), also indirectly signaling that the current line of inquiry will no longer be pursued.

This description is formalized using the notions of Questions Under Discussion (QUD) and discourse moves from Roberts 1996/2012 and subsequent work. Again, consider example (42). The immediate QUD posed by speaker A in (42) is "By whose authority did you eat the fields?" This original line of inquiry presupposes a positive answer to an implicit question 'Did B eat the fields?' which speaker B first takes issue with. Then B utters the PC 'The sheep ate them.' The PC addresses the implicit super-question 'Who ate the fields?'. The resulting organization of this discourse is illustrated in discourse-tree (or *d-tree*; see Büring 2003, also Constant 2014, Rojas-Esponda 2014, Sheil 2016) form in (43). Questions in the d-tree end with ? and implicit moves are in parentheses. B's response is split into individual moves, labeled B_1 and B_2.

(43)   **Final D-tree for (42) (modified from Sheil 2016: 44):**

New line of inquiry
(Who ate the fields?)

(Did B eat the fields?)   'The sheep ate them.' ($42B_2$)

                                              ↑
                                            PC

(Yes)   'It's not me...' ($42B_1$)

Immediate QUD
'By whose authority did
you eat the fields?' (42A)

Speaker B's second sentence, 'The sheep ate them,' is a PC as it addresses a new, related question 'Who ate the fields?', revising the line of inquiry and signaling that the original QUD will not be addressed. See Sheil 2016 chapter 3 for detailed discussion of the discourse uses of PCs, as well as a proposed compositional semantics which derives these pragmatic effects from a general cleft semantics.

We argue that the Burmese mood marker *dar* marks a main clause as a PC.[16] In

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[16]This structure makes it tempting to relate PCs to the English *it's that...* construction, but Sheil 2016 shows that their pragmatic use is distinct. See Sheil 2016 §1.3.

[17]In addition, recall that *dar* appears on verbs in nominalized/relativized clauses (6). We suspect that

previous work, Kato (1998: 88–89) notes that utterances with *dar* are similar to Japanese *-no-da* PCs, and Simpson (2008: 281, p.c.) notes that *dar* is similar to Mandarin Chinese *shì...de* PCs. Both Japanese *-no-da* and Mandarin *shì...de* are discussed as examples of PCs in Sheil 2016.

We motivate this proposal for *dar* through data on the (in)felicity of *dar* for different types of discourse moves, for utterances without *hma*. We first note that the use of *dar* is inappropriate for a direct answer to the immediate QUD, just as Sheil shows for PCs more generally. This is particularly clear with the explicit question in (44A), which can be answered in (44B) using the default mood marker (here, non-future *deh*) but not with *dar*.

(44) *Dar* **is inappropriate for direct answers to questions:**

> A: What did Su drink?
>
> B: Su-ga ye-ko thauq-keh-√deh/*dar.
> Su-NOM water-ACC drink-PAST-√NONFUT/*DAR
> 'Su drank water.'

In (44), 'What did Su drink?' is the immediate QUD. A direct answer to this question does not license the use of the PC marker, *dar*.

In contrast, PCs are natural for raising a new line of inquiry in the process of correcting another speaker's belief, as we saw in the Scottish Gaelic example (42) above. The use of *dar* is also natural in the correction in (45). In such an utterance where it is licensed, its use of *dar* is judged as near-obligatory.
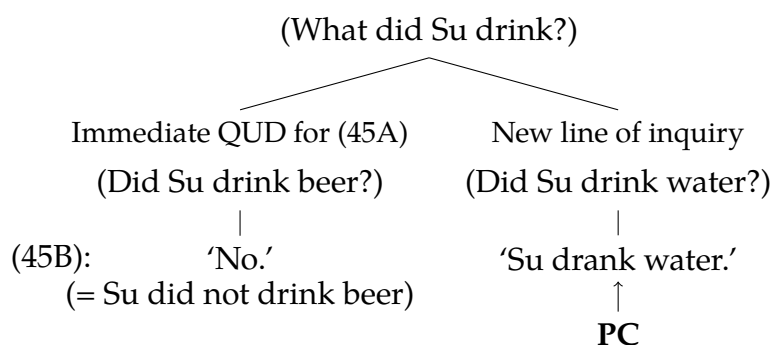
(45) *Dar* **is appropriate for corrections:**

> A: Su drank beer.
>
> B: Ma-houq-bu, Su-ga ye-ko thauq-keh-{??deh/√dar}.
> NEG-right-NEG Su-NOM water-ACC drink-PAST-{??NONFUT/√DAR}
> 'No, Su drank water.'

Here, B disputes A's claim that Su drank beer and instead offers the assertion that Su drank water instead. B shifted to a new question, that of whether Su drank water or not. This d-tree is illustrated in (46):

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there is a historical connection here, as discussed for Burmese in Simpson 2008 and more generally for propositional clefts in other languages in Sheil 2016, but we will not discuss the synchronic or diachronic syntax of *dar* PCs here.

(46) **D-tree for (45):**

(What did Su drink?)

Immediate QUD for (45A)   New line of inquiry

(Did Su drink beer?)   (Did Su drink water?)

(45B):   'No.'   'Su drank water.'
(= Su did not drink beer)

PC

Speaker A addresses the implicit polar question 'Did Su drink beer?' Speaker B addresses this immediate QUD with a contrasting answer, 'No,' and then asserts that 'Su drank water' instead. This assertion is not an answer to the original immediate QUD, but instead addresses an (implicit) sister question, 'Did Su drink water?' (These two questions are sister questions in that they are both natural sub-questions of the implicit super-question 'What did Su drink?'.) B's shift to this new line of inquiry makes the assertion that Su drank water here a PC and thus marked by *dar*. In contrast, the same assertion that Su drank water in the discourse (44) above, where it addresses the immediate QUD, does not count as a PC and *dar* cannot be used.

6.3 Pragmatic focus concord in Burmese

With this proposal for *dar* as PC-marking in place, we return to the focus-concord-like relationship between scalar *hma* and *dar* summarized in (34) above. We argue that this apparent correlation can be explained by considering together the semantics of *hma* and the PC pragmatics of *dar*. This pragmatic approach to the focus concord between scalar *hma* and *dar* also explains the exceptions to this correlation which we present below.

We consider first the scalar use, which we have analyzed as the effect of *hma* scoping under negation: NEG > *hma*. Our canonical example is repeated again in (47), together with the LF we propose for it.

(47) **Scalar *hma* with *dar*:** =(8a/35)

Aung-ga ye-ko-hma   ma-thauq-keh-**dar**.
Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR

≈ 'Aung didn't even drink WATER.'

(48) **LF for scalar *hma*:**   =(22)

LF: [NEG [*hma* [Aung WATER$_F$ drank]]]

We argue that the semantics of scalar *hma* makes it natural to use as a PC, explaining its common appearance with the sentence-final *dar* mood marker. Let's consider what type of discourse context supports the felicitous use of scalar *hma*, and when and why a speaker might choose to utter this sentence.

The association of *hma* (within the scope of negation) with 'water,' as in (48), requires the existence of alternative propositions to the prejacent 'that Aung drank water.' These propositions together constitute the *wh*-question, 'What did Aung drink?'. Consider a discourse where 'What did Aung drink?' is under discussion. The at-issue content of (48) is that Aung didn't drink water. This negative proposition is not a congruent possible answer to the *wh*-question 'What did Aung drink?', but it can function as an answer to the polar question 'Did Aung drink water?', which is a sub-question of the *wh*-question.[18] This is illustrated in (49) below.

(49) **Sample d-tree for scalar *hma* (48):**
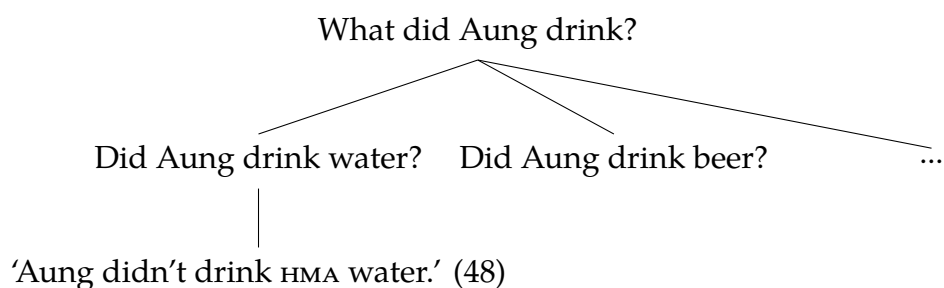
But the utterance of (48) in a discourse with the structure in (49) does much more than simply resolve a single sub-question ('Did Aung drink water?') in the negative. Recall that *hma* presupposes that all less likely alternative propositions are false (14). The use of *hma* thus signals that other sister questions of the form 'Did Aung drink

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[18]The discussion here and below raise interesting questions for the theory of question-answer congruence. Under this analysis, (47/48) is a negative answer to a polar question, which should bear narrow focus on the negative polarity head. Considering an overall discourse organized as in (49), 'water' has the status of a contrastive topic rather than a focus (Büring, 2003; Constant, 2014), but it is the focus of *hma*.

This is a reflection of a more general issue, discussed in §6.4 below, that *hma* and other operators — such as that for the enforcement of question-answer congruence or for PC semantics, below — are evaluated at different levels of the structure, considering potentially different sets of alternatives. How exactly question-answer congruence should be constrained in such configurations is a topic we leave open for further study.

beer?' associated with less likely propositions must also be resolved in the negative, together partially or fully resolving the super-question 'What did Aung drink?' as well.[19]

We argue that this dual function of utterances with scalar *hma* — addressing a specific sub-question, while also indirectly commenting on a superordinate question related through its focus alternatives — helps to explain their use in discourse and the fact that such utterances are often PCs. Consider a context where the super-question 'What did Aung drink?' is under discussion and the speaker believes that Aung didn't drink anything, or at least didn't drink much. Choosing a likely proposition among the possible alternatives (here, 'water') and answering it in the negative with scalar *hma* is an efficient way for the speaker to signal their stance on the entire super-question. If the sub-question they choose to address in order to make this point — here, 'Did Aung drink water?' — has not yet been raised in the discourse, it is a "new line of inquiry" in Sheil's terms, making the utterance a PC and thus receiving *dar* marking as in (47).

The scalar *hma* example with sentence-final *dar* in (47) is indeed natural in response to another speaker explicitly asking 'What did Aung drink?', or raising it indirectly with an expression such as 'I wonder what Aung drank'; see (50a). It is also natural in a discourse such as (50b), where another speaker raises a sister-question such as 'Did Aung drink beer?'. Speaker B in (50b) answers this immediate QUD in the negative and then additionally comments on the implicit super-question 'What did Aung drink?' by applying scalar *hma* to the more likely alternative 'water.' In both of these cases in (50), the speaker is moving to a "new line of inquiry" by addressing 'water,' making these scalar *hma* utterances PCs and thus explaining the use of *dar*.

(50) **Preceding discourses for scalar *hma* with *dar* (47):**

    a.   A: What did Aung drink?

          A': I wonder what Aung drank.

          B: $^\checkmark$(47)

    b.   A: Did Aung drink beer?

          A': (I think) Aung drank beer.

          B: $^\checkmark$No, (47)

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[19]Whether or not (48) resolves the question 'Did Aung drink anything?' or not depends on the discourse context. If the prejacent is the most likely alternative — such as in the water vs beer scenario above (7) — *hma* in (47) will require that Aung did not drink anything. But if the prejacent is not the most likely alternative — as in the water vs tea vs beer example in (25) — it will partially but not fully resolve the super-question.

> c. A: Did Aung drink water?
>
> B: #(No,) (47)

(47) with sentence-final *dar* is however infelicitous in (50c), as a direct answer to 'Did Aung drink water?'. We argue that this is specifically because of the choice of sentence-final *dar*, as PCs are infelicitous for direct answers to questions; see e.g. (44) above.[20]

It is, however, also possible to set up a discourse which supports the use of scalar *hma* to comment on a super-question where the addressed sub-question is *not* a new line of inquiry, but in this case *dar* cannot be used. The discourse in (51) is one such example. We can be sure that this is not an instance of exhaustive *hma* with *hma* taking scope over negation; if it were, it would be claiming that water is the only thing that Aung didn't drink, which is incompatible with the context.

(51) **Scalar *hma* without *dar*:**

> A: I know that there was only beer and water at the party. Did Aung drink beer?
>
> B: No, Aung didn't drink beer.
>
> A: Did Aung drink water?
>
> B: Aung-ga ye-ko-hma   ma-thauq-keh-{✓bu/*dar}.
>   Aung-NOM water-ACC-HMA NEG-drink-PAST-{✓NEG/*DAR}
>
> ≈ 'Aung didn't even drink water.'

Speaker B's utterance with scalar *hma* simultaneously answers the immediate QUD posed by speaker A and comments on the implicit super-question 'What did Aung drink?' as unanswerable.[21] Sentence-final *dar* cannot be used here, as the speaker is not moving to a new line of inquiry.

Example (51) shows that scalar *hma* can be felicitously used without a sentence-final *dar*, supporting our proposal that the frequent cooccurrance of scalar *hma* and sentence-final *dar* is due to their independent pragmatic functions. Sentences with scalar *hma* are often PCs, receiving *dar*-marking, as they are often used to indirectly comment on

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[20]As an aside, we note that, in our judgment, the English sentence *Aung didn't even drink WATER* with scale-reversed *even* also follows the pattern of felicity in (50). We leave open why the English 'Aung didn't even drink WATER' which does not have grammaticalized PC morphology is infelicitous as a direct answer as in (50c). But see also footnote 7 for a possible point of variation between the behavior of scalar *hma* and English scale-reversed *even*.

[21]It is unanswerable as Aung did not drink anything (among the relevant options in the question). This is a rejection of the presuppositions of the question.

a superordinate question by picking out a likely alternative and highlighting that even this likely alternative is false.

We now consider the pragmatic function of exhaustive *hma*, such as in negative clauses with *hma* scoping over negation. Our canonical example from above is repeated here as (52). In all of the examples considered thus far, negative clauses with exhaustive *hma* have ended with the default negative mood marker *bu* in place of *dar*; i.e. not as a PC.

(52) **Exhaustive *hma* with negation:**   =(36/10)

Aung-ga   ye-ko-hma   ma-thauq-keh-bu.
Aung-NOM water-ACC-HMA NEG-drink-PAST-NEG

'It's WATER that Aung didn't drink.'

(53) **LF for exhaustive *hma* with negation:**   =(19)

<u>LF:</u> [*hma* [NEG [Aung WATER$_F$ drank]]]

Recall that our proposal for the semantics of *hma* (14) mirrors the proposal for the semantics of English *it*-clefts from Velleman et al. 2012, and it naturally follows its pragmatic function as well. Velleman et al. argue that a central property of clefts is that they address and fully resolve an existing QUD. A natural context for the use of (52) is a discourse with the immediate QUD 'What didn't Aung drink?'. The utterance of (52) offers an exhaustive answer to this QUD, terminating this line of inquiry. As no new lines of inquiry are implicitly raised in this discourse move, (52) is not a PC and thus resists the use of *dar*.

Support for this view comes from the fact that exhaustive *hma* with scope over negation — i.e. the LF in (53) — *can* in fact be used with sentence-final *dar* if the discourse independently supports the utterance's status as a PC. One such example is in (54) below. Here, speaker A claims that Aung didn't drink beer. Speaker B disagrees with this claim with 'No' and then asserts that 'It's water that Aung didn't drink' with exhaustive *hma* taking scope over negation:

(54) **Exhaustive *hma* with negation, with *dar*:**

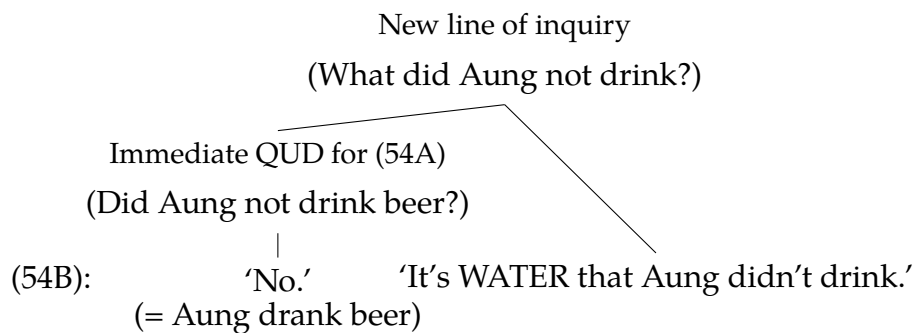A: Aung didn't drink beer.

B: Ma-houq-bu, Aung-ga   ye-ko-hma   ma-thauq-keh-**dar**.
NEG-right-NEG Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR

'No, it's WATER that Aung didn't drink.'   cleft > NEG

Our proposal explains the use of *dar* in (54B). The relevant discourse moves in (54) are illustrated in the d-tree in (55) below. We start with A's statement. This addresses the implicit polar question 'Did Aung not drink beer?' Speaker B addresses this immediate QUD with 'No,' and then shifts to a new line of inquiry: 'What did Aung not drink?', which is a super-question of the original immediate QUD. Using the *hma* cleft, B gives an exhaustive answer to this super-question: 'It's WATER that Aung didn't drink.'

(55) **D-tree for (54):**

New line of inquiry
(What did Aung not drink?)

Immediate QUD for (54A)
(Did Aung not drink beer?)

(54B):　　　　　 'No.'　　　 'It's WATER that Aung didn't drink.'
　　　　(= Aung drank beer)

As this cleft 'It's WATER that Aung didn't drink' addresses a new line of inquiry, it is a PC and thus takes the sentence-final mood marker *dar*.

The examples of negative clauses with *hma* discussed in this section are summarized together in (56) below. Earlier, in section 3, we observed that scalar *hma* tends to occur with sentence-final *dar* whereas exhaustive *hma* occurs in negative clauses without *dar*. We have seen that this correlation is dissociable in both directions by manipulating the discourse context.

(56) **Negative clauses with *hma*:**

	"Scalar *hma*" NEG > *hma*	"Exhaustive *hma*" > negation *hma* > NEG
PC (*dar*)	(50a,b)	(54)
Non-PC (**dar*)	(51)	(52)

Our proposal for the semantics of *hma* and our analysis of *dar* as a marker of propositional clefts (Sheil, 2016) together serve to explain this correlation — why scalar *hma* (*hma* under the scope of negation) commonly occurs with *dar* and why exhaustive *hma* (including *hma* over negation) commonly occurs without *hma* — as well as their exceptions. In contrast, a morphosyntactic agreement approach to the relationship between scalar *hma* and sentence-final *dar*, following much previous work

on focus concord reviewed in section 6.1 above, would have difficulty accounting for these principled exceptions.

Both scope possibilities must be available for negation and *hma* as proposed in section 4, independent of the choice of sentence-final marking, with the proper interpretation of such utterances then determined by the context. There is no dependency in either direction between the scope of *hma* with respect to negation and the presence or absence of *dar*.

6.4 Focus alternatives and QUDs

Finally, we return to one detail in our formulation for the semantics of *hma*. In section 4, we proposed that *hma* introduces a presupposition that no stronger alternative is true, repeated here as (57). The question we address now is how the set of alternatives C is determined.

(57) **Presupposition of *hma*:** =(14)

$$hma_C(p)(w^\star) = \forall q \in C \left[(q <_{likely} p) \rightarrow \neg q(w^\star) \right]$$

where C is closed under conjunction

We proposed above that C refers to the set of Roothian focus alternatives to p. Suppose ʜᴍᴀ is adjoined to a focus-containing propositional node α at LF. (See footnote 6 above.) In the Roothian Alternative Semantics framework for the evaluation of focus, the prejacent $p = [\![\alpha]\!]^{\text{o}}$, the ordinary semantic value of α, and $C \subseteq [\![\alpha]\!]^{\text{f}}$, the *focus semantic value* of α (see e.g. Rooth, 1992), which is then closed under conjunction. The requirement that $C \subseteq [\![\alpha]\!]^{\text{f}}$ ensures that the alternatives considered by *hma*, C, vary in the position of focus in α.

An alternative conception of the conventional dependency of focus particles on the position of focus is developed in Beaver and Clark 2008 and subsequent work by Beaver and colleagues, building on the discussion of association with focus in Roberts 1996/2012. In these works, focus particles conventionally encode a reference to the "Current Question" or *CQ*, defined by Beaver and Clark 2008 as "a question that is proffered and mutually accepted by the interlocutors as the most immediate goal of the discourse" (p. 35). Instead of quantifying over the Roothian focus alternatives in C, focus particles quantify over the alternatives in the Hamblin 1973 denotation of the CQ. General focus congruence requirements ensure that the position of focus in the sentence is also the position of variation across answers in the CQ, and hence across alternatives considered by the focus particle.

34

Looking at the use of *hma* in discourses as we have done in this section presents challenges to the adoption of this CQ-based approach to focus dependency. Consider for example the discourse in (50b), repeated here in (58). Speaker B's second sentence is a use of scalar *hma*.

(58) **A felicitous discourse for scalar *hma*:**   =(50b)

   A: Did Aung drink beer?

   B: Ma-houq-bu, Aung-ga   ye-ko-hma   ma-thauq-keh-dar.
      NEG-right-NEG Aung-NOM water-ACC-HMA NEG-drink-PAST-DAR
      ≈ 'No, Aung didn't even drink WATER.'

   - Immediate QUD = 'Did Aung drink beer?' (A)

   - New QUD = 'Did Aung drink water?'

   - $C = \left\{ \begin{array}{l} \text{that Aung drank beer,} \\ \text{that Aung drank water,} \\ \text{that Aung drank beer and water} \end{array} \right\}$ =(21)

      ≅ 'What did Aung drink?'

Here we also give the immediate QUD addressed by speaker B, which is speaker A's preceding question, as well as the new QUD that is addressed by B's sentence with scalar *hma*. Because this new QUD is a new line of inquiry, the sentence is a PC and ends with the *dar* mood marker.

Now consider the set of alternatives that are considered in the evaluation of *hma*. As we have argued for in section 4, this will be the set C in (58), illustrated for the simple context (7) with water and beer as atomic alternatives. This set is not congruent to the immediate QUD, nor to the new QUD addressed by the utterance. This would be impossible if we adopted the Beaver and Clark 2008 proposal where *hma*, as a focus-sensitive particle, conventionally refers to the CQ as the set of alternatives to quantify over.

We do not go so far as to advocate for a complete severance between the relevant focus alternatives and the QUDs in the discourse. Notice that the set C in (58) is congruent to the super-question 'What did Aung drink?', which we have argued is important in discourses which support the use of scalar *hma*. This suggests a way to resolve this tension: If we allow for some flexibility in which QUD counts as the CQ — not necessarily just the most recent QUD — we could perhaps maintain the intuition that focus particles conventionally encode on *some* QUD. Such a reconception of the

CQ appears to be alluded to in Coppock and Beaver 2014: "we are referring [by CQ] only to the single most burning question in what may be a stack of questions" (p. 392, fn. 14).[22]

There is, we believe, a principled reason why the study of scalar *hma* highlights this issue: *hma* can take scope under other operators at LF, as we've argued for extensively with negation. The LF configuration for scalar *hma* examples is again schematized in (59) below.

(59) **LF for scalar *hma*:**   =(22)

   <u>LF:</u> [$_\beta$ NEG [*hma* [$_\alpha$ ...]]]

Under standard Roothian assumptions, adopted here, *hma* quantifies over (a subset of) the focus alternatives for its complement, $[\![\alpha]\!]^f$. In contrast, assuming that question-answer congruence is evaluated at the root of the structure, β, the congruent question will include the semantic contribution of negation in its alternatives as well. We believe that it is vital, then, to study configurations of the form in (59) where other operators intervene between the clause edge and the LF position for a focus particle, or where different conventionally alternative-sensitive operators must be evaluated at different positions at LF, in order to refine our theories of conventionalized focus dependency.

7   Conclusion

In this paper we investigated the semantics of the Burmese focus particle *hma*. Descriptively, *hma* appears to have two distinct uses, as an exhaustive particle or a scalar particle, with Okell 1969: 284–286 offering both English 'only' and 'even' as translations. We described the distribution of these two apparently distinct uses and offered a uniform analysis for *hma* as a not-at-issue scalar exhaustive, similar to the analysis of cleft semantics in Velleman et al. 2012. On the surface, *hma* is a constituent focus particle that encliticizes to a focus-containing phrase but takes propositional scope at LF. The scale-sensitive use of *hma* comes about when *hma* scopes under negation, whereas *hma* taking widest scope leads to exhaustive, cleft semantics.

Burmese *hma* shows that a common core may underlie descriptively "exhaustive" particles, translated as a cleft or *only*, and descriptively "scalar" particles which might

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[22]There are, however, more challenging counterexamples to this link between focus alternatives and QUDs. See especially the examples in Kadmon and Sevi 2011, also discussed in Roberts 2011 and Büring 2019.

be translated with English *even*. We suggested in section 5 that such an analysis may extend to other variably exhaustive and scalar focus particles in other languages as well. Data from Blackfoot *ikak* from Bliss 2013 is particularly suggestive, showing that the choice of exhaustive versus scalar readings correlate with the particle's scope with respect to negation.

We furthermore described and analyzed a focus-concord-like effect between scalar *hma* and the sentence-final mood marker *dar*. Following previous descriptions, we analyze *dar* as a marker for propositional clefts (PC), which reflect a discourse move where a new line of inquiry is addressed (Sheil, 2016). We argue that the semantics of scalar *hma* explains its pragmatic function of commenting on a super-question by explicitly addressing a particular sub-question. Scalar *hma* in such cases will frequently — though not always — be a PC. On the other hand, exhaustive *hma* naturally identifies a complete answer to a question, making it often — though not always — address an existing QUD, and thus not a PC. We argue that this pragmatic account is superior to potential accounts in terms of morphosyntactic agreement, in explaining the principled exceptions to the correlation, as well as offering a deeper explanation. We hope that our discussion, together with Shimoji's prior work on Irabu, might offer a template for further semantic/pragmatic explanations to focus concord phenomena in other languages, where morphosyntactic agreement accounts have been the norm.

Finally, we note that there is one additional use of *hma* which we have not discussed here. *Hma* can be used in combination with *wh*-phrases to form negative polarity items (NPIs). For example, in (60), 'which apple(s)' with *hma* forms the NPI 'any apple.'

(60) *Wh-hma* **NPI:**

Nga-ga *beh*-panthi-ko-**hma** ma-yu-keh-bu.
1-ɴᴏᴍ   ᴡʜ-apple-ᴀᴄᴄ-ʜᴍᴀ ɴᴇɢ-take-ᴘᴀsᴛ-ɴᴇɢ

'I didn't take any apple(s).'

The connection between NPIs — and in particular, *wh*-NPIs — and scalar particles has been documented in a range of previous work (Lee and Horn, 1995; Lahiri, 1998; Erlewine and Kotek, 2016; a.o.). Erlewine (in progress) develops a compositional analysis for these Burmese *wh-hma* NPIs, based on the scalar exhaustive semantics for *hma* established here.

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