Radical Underspecification, General Number, and Nominal Denotation in Indonesian: An Exo-Skeletal Approach *

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1. Introduction

In this paper, I explore the number system and its relevance to the interpretation of bare nominals in Indonesian. I propose that Indonesian has a radically underspecified number system in which there is no grammatically encoded value for the number head. According to this analysis, the apparent individuation/singularization effects are epiphenomenal consequences of purely syntactic substantiation based solely on various grammatical functional formatives and their unambiguous semantic contributions. Following Borer (2005: 15), I dub this approach an *Exo-Skeletal* (XS) Approach to stress the view that "syntactic properties typically assumed to emerge from properties of listemes, are, by and large, properties of structures and not properties of listemes themselves." The proposed analysis correctly predicts the lack of the grammaticalized count/mass distinction in Indonesian as observed in Romance and Germanic languages. I argue that syntactic substantiation follows the economy of projection/Last Resort (Chomsky 1995; Bošković 1997; Fukui 1986; Law 1991; Fox 2000; Reinhart 2006) in that superfluous merger of grammatical functional formatives for the purposes of substantiation is blocked. This economy-based conception of syntactic substantiation provides a simple account for the traditional observation in the Indonesian literature that reduplicated nouns do not co-occur with numerals or classifiers. I further compare the present analysis with Chierchia's (1998a, b) Nominal Mapping Parameter, which proposes that languages differ as to whether bare nominals in a given language are mapped onto kinds, properties, or both. I review Chung's (2000) arguments that Indonesian does not fit into this three-way classification of Chierchia's semantic

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typology. I show that the morphosyntactic profile of Indonesian observed by Chung (2000) naturally falls into place under our XS approach to nominal denotation.

The present paper is organized as follows. In the following section, I argue that the number system in Indonesian is radically underspecified in that there is no grammatically encoded value for the number head. Specifically, I claim that bare nominals in Indonesian are associated with *General Number* (Greenberg 1972 and Corbett 2000) and provide evidence for this position based on recent studies on the interpretation of bare nominals in Mandarin Chinese (Rullmann and You 2006) and Malay (Carson 2000). In section 3, I propose that apparent individuation/singularization effects of the otherwise amorphous nature of bare nominals in Indonesian are epiphenomenal consequences of syntactic derivations that successively merge grammatical functional superstructure above the NP such as Num(ber)P and Q(uantity)P. This XS approach not only derives the lack of the grammaticalized mass/count distinction at the NumP level but also correctly predicts that reduplicated nouns do not co-occur with classifiers or numerals. In section 4, I compare the proposed syntactic approach to nominal denotation with Chierchia's (1998a, b) Nominal Mapping Parameter. I first review Chung's (2000) study that shows that the particular clustering of morphosyntactic properties of bare nominals in Indonesian (bare nominals, the lack of the generalized classifier system, and the presence of the singular-plural distinction) presents difficulties for Chierchia's semantic theory. Then, I show that these properties naturally fall out under our XS approach under independently motivated assumptions. Section 5 is the conclusion of the paper.

2. Underspecification and General Number in Indonesian

Indonesian is one of many languages that allows (determiner-less) bare nominals to occur in all syntactic positions. It is widely acknowledged that unmarked bare nominals in Indonesian may denote either singular or pluralities of the entity denoted by a particular noun, as shown in (1). This observation is best translated by the somewhat clumsy translation "one or more horses" in (1).

(1) Kuda sedang makan.
horse Prog eat
'One or more horses are eating.'

There is convincing evidence from ellipsis (Zwicky and Saddock 1975; Cruse 1986) that unmarked bare nominals in Indonesian are underspecified for number rather than ambiguous between singular and plural readings. The following argument is modeled on Carson (2000), Rullmann and You (2006), and Wilhelm (2008).

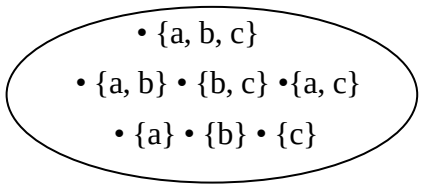
(2) Budi mendapat lampu merah dan Ali juga.
Budi receive lump red and Ali also
→ Budi received a red lump and Ali received a red lump.
→ Budi received a warning and Ali received a warning.
→ * Budi received a red lump and Ali received a warning.
→ * Budi received a warning and Ali received a red lump.

The NP *lampu merah* is ambiguous. It means either 'red lump' or 'warning'. As shown in the translations given, the example in (2) allows only two of the four logically possible interpretations. Specifically, the elided NP in the incomplete clause must be interpreted with the same sense as its overt antecedent NP in the full-fledged clause. Now, let us compare this example with (3), which is minimally different from (2) in that we have the bare nominal *kuda* 'horse' instead of *lampu merah*.

(3) Budi memdapat kuda dan Ali juga.
Budi receive horse and Ali also
→ Budi received one horse and Ali received one horse.'
→ Budi received more than one horse and Ali received more than one horse.
→ Budi received one horse and Ali received more than one horse.
→ Budi received more than one horse and Ali received one horse.

As shown in the translations, (3) allows all of the four logically possible interpretations in contrast to (2). If *kuda* 'horse' were lexically ambiguous between the singular and plural readings like *lampu merah*, then (3) should be only two-way ambiguous, contrary to facts. The contrast between (2) and (3), therefore, confirms that bare nominals in Indonesian are underspecified as to the number of their denotation (i.e. singular or plural). In other words, the common noun *kuda* or whatever property the noun has is true in an undifferentiated manner for singularities of the horse and pluralities thereof. The denotation of a bare nominal is a complete semi-lattice generated by a set of atomic entities, as represented in (4) (Rullmann and You 2006: 180; Chierchia 1998a: 352).

(4) The Denotation of Underspecified Bare Nominals (e.g. *kuda* 'horse')

kuda = 

The phenomenon of number specification described above has been uncovered in many languages of the world including Maltese (Gil 1996), Malay (Carson 2000), Bayso (Corbett and Hayward 1987), Hindi (Dayal 2004), and Mandarin Chinese (Rullman and You 2006; Cheng and Sybesma 1999), Korean (Kang 1994), to name a few. This phenomenon been commonly characterized in terms of *General Number*, which characterizes nomnals that are "non-committal as to number" (Corbett 2000: 10), though exact labels for the phenomenon differ among researchers: Jespersen (1924) dubs it "a common number form", Hayward (1979) "unit reference", Biermann (1982) "transnumeral", Andrzejewski (1960) "general", and Chierchia (1998a: 347) "neutralization of the singular/plural distinction". Following Corbett (2000) and other researchers, I assume in this paper that General Number is outside the number system. Specifically, it does not constitute the value for the number that is co-existent with singular or plural but rather serves as a name for the phenomenon of number underspecification. This assumption is supported by the existence of many languages, including Korean, Hungarian, Hindi, Japanese and Turkish, which freely allow bare nominals with General Number but do have plural morphemes. Korean and Hungarian examples are given in (5) and (6) to illustrate this coexistence of General Number with number (plural) marking.

(5) Sakwa-tul-i chayksang wui-ey issta.
apple-PL-Nom desk top-at exist
'There are apples on the desk.' (Korean: Kang 1994: 6)

(6) Mari verseket olvas.
Mari poem.PL.Acc read
'Mari is reading poems.' (Hungarian: Farkas and de Swart 2003: 12)

One question that immediately arises at this point is how the grammar of Indonesian expresses individuation/singularization effects if bare nouns in this language are underspecified with respect to number. This is the topic of the following section.

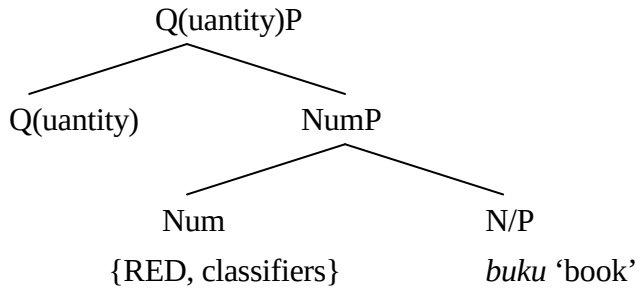
3. An Exo-Skeletal Approach to Nominal Denotation in Indonesian

If unmarked nominals in Indonesian are indeed underspecified with respect to number, how can they be counted as in *tiga buku* 'three books' or *dua orang* 'two people'? The purpose of this section is to answer this question within the XS approach to nominal denotation. I propose that number-neutral bare nouns in Indonesian are instantiated gradually in syntactic derivation through successive merger of grammatical functional elements such as Num and Quantity heads which force non-coercible, unambiguous molding of the highly malleable nouns. I show that the proposed XS analysis of bare nominals in Indonesian also provides a straightforward account for the traditional observation that reduplicated nominals do not co-occur with numerals or classifiers under an independently motivated conception of expressive economy.

3.1. *Individuation Effects of Bare Nominals through Functional Superstructure*

Following Borer (2005), I adopt the following nominal superstructure for Indonesian, in which bare nominals are dominated by two grammatical functional heads, Num and Q.[1]

(7) The Nominal Functional Superstructure in Indonesian



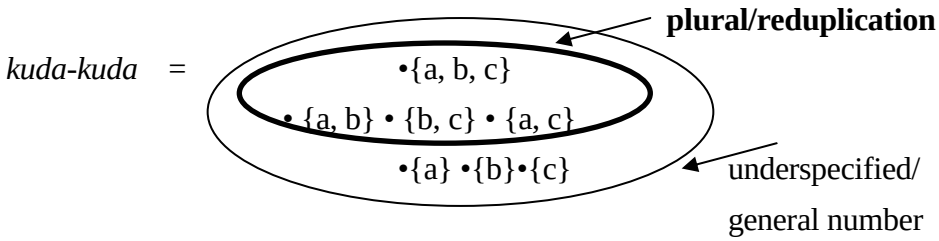
The Num head hosts either the reduplicative morpheme (RED) or classifiers. I assume, in line with much recent work on reduplication in a number of different frameworks

[1] The structure in (7) is modified from Borer's (2005) in two ways. First, Borer uses the term Classifier Phrase in place of NumP. The choice does not affect the following discussion. Second, Borer assumes the DP above the QP. However, the universal DP hypothesis has been a matter of lively debate. In section 3.2, I provide arguments that Indonesian lacks determiners, and hence does not have the DP projection.

(Marantz 1982; McCarthy and Prince 1995), that this process consists in affixation of the reduplicative null morpheme RED under Num that triggers copying on a stem on its local environment, namely, its sister constituent N/P in (7). Reduplication expresses plural. This process is formally expressed in (8a) (Carson 2000; Rullman and You 2006; Wilhelm 2008). Its effects are represented in (8b) (Rullman and You 2006: 181).

(8) a. For any $A \subseteq U$, PL (A) = *A −At.

b. The Denotation of Reduplicated Bare Nouns (e.g. *kuda-kuda* 'horses')



(8a) states that reduplication/pluralization applies to bare nouns underspecified with respect to number ((4)) and selects the pluralities. This is illustrated in (8b). This characterization of the semantics of reduplication forces otherwise underspecified bare nouns to have atomic denotations, because for this operation to apply, bare nominals must include (namely, {a}, {b}, {c}) in their denotations. Note that this characterization straightforwardly captures Dyen's (1964) observation below, as cited in Chung (2000: 166-167), concerning the speakers' choice as to nominal reduplication.

> *The Indonesian speaker makes the choice [to reduplicate or not-Sandy Chung] according to whether the collection of plural objects is to be regarded as (1) constituting a more or less uniform mass or as (2) made up of a number of discrete objects. In the first case, the undoubled word is used and in the second, the double[d] words is used. Thus kursi means 'a chair, a collection of undifferentiated chairs' and kursikursi means 'a collection of different chairs'*
> (Dyen 1964: 7a-10)

Consider now the classifier system in Indonesian and its semantic function. Contemporary Indonesian has three classifiers in use: *orang* 'person', *ekor* 'tail', and *buah* 'fruit', as shown in (9a-c).

(9)a. tiga (orang) siswa
three Class student
'three students'

b. tiga (ekor) kuda
three Class horse
'three horses'

c. tiga (buah) meja
three Class table
'three tables'

orang is used for counting persons, *ekor* for counting animals, and *buah* for everything else. Grammars on contemporary/colloquial Indonesian (e.g. Dardjowidjojo 1978: 82-83, MacDonald 1976: 82-83, Sneddon 1996: 134-135, Wolff et al. 1992: 556) observe that classifiers are optional after *dua* 'two' or numerals higher than it in cotemporary Indonesian, unlike obligatory classifier languages such as Japanese and Chinese. Two arguments suggest that classifiers occupy the Num head as the RED morpheme. First, T'sou (1976), as cited in Borer (2005: 92), makes the following observation:

> *The study of nominal classifier systems suggests an important hypothesis that the use of nominal classifiers and the use of plural morpheme is in complementary distribution. More correctly, it suggests that either a) a natural language has either nominal classifiers or plural morphemes, or b) if a natural language has both kinds of morphemes, then their use is in complementary distribution*. (T'sou 1976: 1216)

Indonesian also fits this hypothesis. As we saw above, Indonesian has both nominal classifiers and plural morphemes. The ungrammaticality of (10a) shows that the two kinds of morphemes are in complementary distribution, competing for the Num head position.

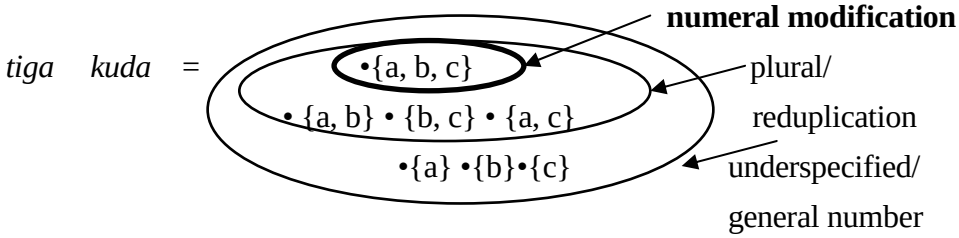
(10) (*orang) siswa-***siswa**
Class student-Red
'students'

Second, the literature on classifier languages as in Iljic (1994), Cheng and Sybesma (1999), and Paris (1981) emphasize the "individualizing function" (Croft 1994: 162) of classifiers. Specifically, Iljic (1994: 104) takes classifiers to enable one to "extract…distinguished, that is, discrete occurrences". Paris (1981: 69) dubs classifiers "une marque d'individuation, de singulariization" ('a mark of individuation, of singulariziation'). As we saw, reduplication in Indonesian serves the same semantic function of individuation and singularization. This commonality of semantic function, therefore, suggests that classifiers occupy the Num head position as RED morpheme.

Let us finally consider the syntax and semantics of numerals such as *tiga* 'three', *lima* 'five', etc. These numerals occupy the head of the QP. As for their semantics, I assume, following Wilhelm (2008), that a numeral denotes a function OU that, applied to a set, returns a number of atomic entities in a plurality, as defined in (11a). Its effects can be represented as in (11b).

(11) a. Indonesian *tiga* 'three'
[[tiga]] = λP λx [P (x) & OU (x) = 3]
'a function from a set *P* (of atoms and sums) onto that subset of *P* containing the sums of three object units/atoms' (Wilhelm 2008: 55)

b. The Denotation of Numeral Nouns (e.g. *tiga kuda* 'three horses')



The semantics of numeral modification in (11a) presupposes that a set to which the OU is applied consists of nouns with atomic denotations. Numerals thus overlap with reduplication and classifiers in their semantic functions in that they all force individuation/singularization/atomicization of the otherwise underspecified bare noun in Indonesian. This point will be important in the following subsection.

3.2. *Functional Nominal Superstructure and Expressive Economy*

In this section, I demonstrate that the XS approach to bare nominals outlined in the previous subsection brings us a number of favorable empirical consequences that otherwise seem hard to come by. Specifically, the proposed analysis not only correctly

predicts the lack of the grammaticalized mass/count distinction (as observed in English) but also directly explains the inability of reduplicated nouns to co-occur with either classifiers or numerals. One important theoretical implication of the proposed analysis is that the merger of a grammatical functional item into the nominal superstructure obeys expressive economy in that the semantics of bare nominals cannot be overspecified (Chomsky 1995; Bošković 1997; Fukui 1986; Law 1991; Fox 2000; Reinhart 2006). More concretely, if a functional item enforces a particular semantic molding of the underspecified/malleable item bare nominal, then its merger blocks that of all the other functional items into the higher functional domain which would enforce the same molding.

3.2.1. The Lack of the Mass/Count Distinction in Indonesian at the NumP Level

As we saw in section 3.1, our characterization of the semantics of reduplication in (8a) has the individuating function. It forces otherwise underspecified bare nouns to have atomic denotations. Our proposed analysis, therefore, predicts that even notionally mass nouns in Indonesian should be able to be coerced into count denotations as the result of reduplication. Examples in (12a, b) show that this prediction is indeed borne out.

(12)a. Mereka telah kemasukan air laut terlalu banyak dan
they have ingested water sea excessive many and
air-air itu sudah berhasil dikeluarkan.
water-Red that already successfully Pass.exit.Kan
'They have ingested too much sea water, and those [amounts of] water have successfully been taken away.'

b. …***minyak-minyak*** itu muncrat dari manhole kapal dan
oil-Red that stream from manhole ship and
membeku setelah membentuk seperti sabu dan mengotori
solidify then form like bubble and make.dirty
pantai sekitar.
beach around
'The [streams of]oil streamed from the manhole of the ship and solidified, and then formed bubbles and polluted the beach.'

(Dalrymple 2008: 3)

In these examples, *air-air* 'waters' and *minyak-minyak* 'oils' clearly denote the pluralities of the otherwise amorphous water and oil (specifically, specific amounts of water and oil). Thus, Chung's (2000: 165) observation that '*minyak-minyak* 'oils"…can refer only to different kinds of oils" is incorrect. However, this "amount" interpretation in these examples is straightforwardly derived under our XS approach because the Num head forces its complement N/P to denote a set of pluralities made of distinguishable units. In notionally mass nouns such as *air* and *minyak*, this distinguishable unit is realized in the semantics as "a contextually determined amount of water/oil".

3.2.2. The Incompatibility of Reduplicated Nouns with Classifiers or Numerals

It has been known that reduplicated nouns do not co-occur with classifiers or numerals in Indonesian. Examples in (13a, b) illustrate this observation. (13c, d) show that numerals can occur with bare nouns without a classifier but classifiers cannot occur without a numeral.[2]

(13)a. (*orang) siswa-siswa (=10a)
Class student-Red
'students'

b. (*tiga) siswa-siswa
three student-Red
'three students'

c. tiga siswa
three student
'three students'

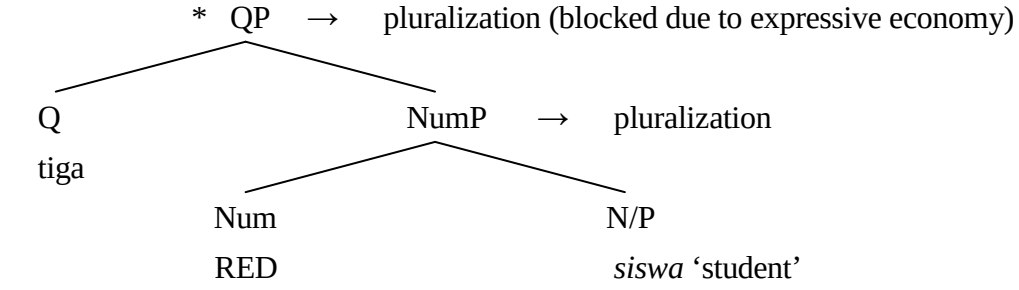
d. *(tiga) orang siswa
three Class student
'three students'

We saw earlier that (13a) is ungrammatical with the classifier *orang* because both reduplication and classifiers occupy the Num head position. The ungrammaticality of

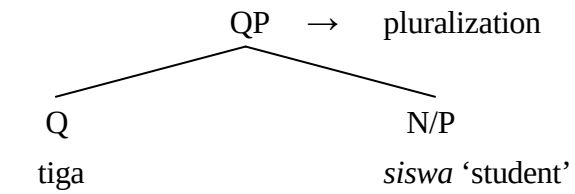
[2] Chung (2000: 165) mentions that examples where reduplicated nouns are found together with numerals or classifiers do occasionally occur in contemporary Indonesian. However, she does not provide examples of this sort, and I have been unsuccessful in finding any example of this sort. Furthermore, my consultant judges such examples intuitively bad. See also Dalrymple (2008:2) for relevant discussion.

(13b) falls out once we assume that the merger of functional elements above the NP follows the notion of expressive economy. Specifically, let us suppose that the denotation of the NP cannot be overspecified; an NP cannot be molded by two functional elements (Num, Q) that share the same semantic function. Then, the merger of the Q head above the NumP is blocked since the merger of the Num with the NP already selects the subset of the denotation of the NP that includes the pluralities, thereby excluding the later merger of the Q head that also has the exactly the same semantic function. The derivation for (13b) is given in (14a). On the other hand, (13c) is grammatical precisely because the pluralization function has been applied only once through the merger of the Q, as shown in the derivation in (14b).

(14)a. The Derivation for (13b)



b. The Derivation for (13c)



Let us consider now (13d). I maintain that a classifier cannot occur without a numeral accounted because the classifier must be licensed by the numeral. The idea that there is this kind of relation between a classifier and a numeral has been variously expressed in the literature on classifier languages such as Mandarin and Cantonese (Croft 1994; Tang 1990; Cheng and Sybesma 1999). Croft (1994: 151) observes that “numeral and the classifier form one constituent.” Tang (1990: 403) proposes that “the numeral and classifier form a dual head of ClP”. Cheng and Sybesma (1999: 530) state that “in Mandarin Chinese, overt classifiers are always accompanied by a Numeral. The Numeral can be overt or covert.” I conclude, following this line of work, that the obligatory presence of a numeral with a classifier construction in Indonesian does not

follow from anything deeper than the selectional licensing condition imposed on classifiers.

The proposed analysis coupled with the notion of expressive economy sheds light on the lack of determiners in Indonesian. It has been commonly held in the literature (Longobardi 1994; Cheng and Sybesma 1999) that determiners serve the individualizing/singularizing function. Then, the well-known lack of determiner elements can be explained as the functional pressure of the expressive economy. Specifically, since the semantic function of determiners can be independently satisfied by the two functional heads below the DP (Num and Q), the grammar of Indonesian avoids the DP system altogether to avoid replication of the same role distributed across different functional items.

4. The XS Approach versus Chierchia's (1998a, b) Nominal Mapping Parameter

In this section, I compare the XS approach to nominal denotation in Indonesian with Chierchia's (1998a, b) Nominal Mapping Parameter. After reviewing Chierchia's theory in section 4.1, I review Chung's (2000) arguments that Indonesian does not belong to the [+arg, -pred] language under Chierchia's semantic typology because this language allows bare nominals in all syntactic positions but does not develop a generalized classifier system and expresses plurality via full reduplication. I show that this particular combination of the morphosyntactic properties of Indonesian nominals receives a simple account under the XS approach to nominal denotation developed in the present paper.

4.1. *Chierchia's (1998a, b) Nominal Mapping Parameter*

Chierchia (1998a, b) proposes that languages differ in terms of what their nouns (and NPs, by extension) denote in the syntax-semantics mapping in an attempt to derive the crosslinguistic distribution of bare nominals and their morphosyntactic profile. His theory proposes that nouns may be mapped onto kinds (of type <e>), properties (of type <e, t>), or both. This semantic parameter, therefore, argues that all languages should belong to one of the following three language types. In the first type of language, which Chierchia calls [+arg, -pred] language, bare nouns denote *kinds* (Carlson 1977), "functions from worlds (or situations) into pluralities, the sum of all instances of the kind." (Chierchia 1998a: 349). We expect bare (determiner-less) nominals in all argument positions in this type of language since kinds are saturated in the Fregean sense. This type of language also lacks the singular-plural distinction because kinds denote a set of singularities plus pluralities formed from them, and hence cannot

distinguish singular and plural instances of a particular kind. We also expect this type of language to develop a generalized classifier system because a classifier will be required to set up an appropriate counting level. Chierchia mentions Japanese and Chinese as two examples of this language type. In the second type of language ([−arg, +pred] languages) such as Italian and French, bare nouns denote predicates (of type <e, t>). Thus, this type of language does not allow bare nominals in argument positions since a determiner is always required to make a saturated argument. Finally, in [+arg, +pred] languages such as English and German, bare nouns may be mapped either to kinds (for mass nouns and bare plurals) or properties (count nouns).

After the publication of Chierchia (1998a, b), studies on Mandarin/Cantonese (Cheng and Sybesma 1999), Brazilian Portuguese (1999), Indonesian (Chung 2000), Hindi (Dayal 2004), and Dëne Sųłiné (Wilhelm 2008) have shown that the profile of bare nominals in these languages does not quite fit into the three-way typology predicted by Chierchia's semantic parameter, casting doubt on the rigid one-to-one mapping between the denotation and morphosyntax of NPs in natural language. In the next subsection, I review Chung's (2000) arguments from Indonesian against the Nominal Mapping Parameter.

4.2. *Chung (2000): Indonesian is Not a [+arg, -pred] Language*

Chung (2000) develops arguments that Indonesian does not fit into any of the three language types under Chierchia's semantic typology. Let us consider each analytic possibility in turn. If Indonesian were a [−arg, +pred] language, it should not allow bare nominal arguments. Examples in (15a, b) show that this prediction is false.

(15)a. Trotski pernah meneriakkan bahwa ***partai*** tidak bisah bersalah.
Trotski once yell.out that party not can wrong
'Trotski once asserted loudly that the party could not be wrong.'
(MacDonald 1976: 102, as cited in Chung 2000: 160)

b. Saya pinjam ***mobil*** dari ***kantor***.
I borrow car from office
'I borrowed a car from the office.'
(Wolff et al. 1992: 715, as cited in Chung 2000: 159)

Second, if Indonesian were a [−arg, +pred] language, then it should develop a generalized classifier system and lack a singular-plural contrast. Neither of the

predictions is correct, as we saw in section 3. (9a-c) show that classifiers are optional in this language, unlike other obligatory classifier languages such as Chinese and Japanese. Reduplication exists as the means to denote specifically plural, as shown in (16a, b).

(16)a. Kuda sedang makan. (=1a)
horse Prog eat
'One or more horses are eating.'

b. Kuda-***kuda*** sedang makan
horse-***Red*** Prog eat
'More than one horses are eating.'

Finally, if Indonesian were a [+arg, +pred] language, then it should exhibit a wide scope reading with respect to negation under its indefinite singular reading and be reduplicated for generic statements (17a, b). Examples in (18a, b) show that neither of the predictions is correct.

(17)a. Ali didn't see a spot on the floor.
'Ali did not see any spot(s) on the floor. (narrow scope reading)
or There was a spot I didn't see on the floor.' (wide scope reading)

b. Dogs bark.
'More than one dog is barking. (plural reading)
or It is a general property of dogs that they bark.' (generic reading)

(18)a. Ali tidak jadi membeli ***buku***.
Ali not finished buy book
'Ali didn't buy any book(s).' (narrow scope reading)
* 'There was a book that Ali didn't buy.' (wide scope reading)

b. Anjing-***anjing*** menggonggong.
dog-Red bark-Red
'More than one dog is marking.' (plural reading)
* 'It is a general property of dogs that they bark.' (generic reading)

The above arguments convincingly show that Indonesian presents itself as a counterexample to Chierchia's (1998a, b) Nominal Mapping Parameter, casting doubt

on the validity of the rigid mapping between the syntax and semantics of nouns assumed in his semantic theory.

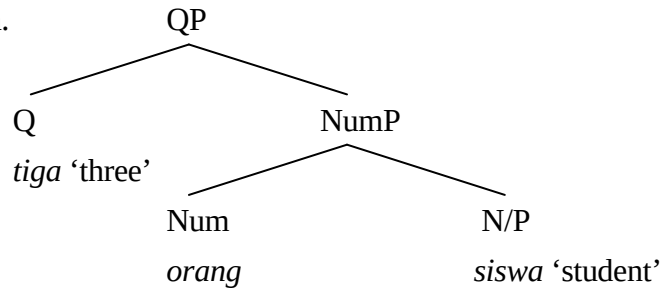
4.3. *The XS Approach to Nominal Denotation and Morphosyntax in Indonesian*

We have seen in the previous subsection that Indonesian has the following properties.

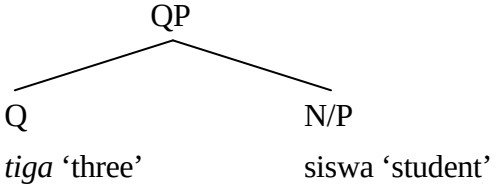
(19)a. Reduplication as the means to denote specifically plural (16b).
b. Bare nominals in all argument positions (15a, b).
c. Classifiers (*orang, ekor, buah*) are optional (9a-c)
d. Obligatory narrow scope reading of bare nouns with respect to negation (18a)
e. No reduplication for generic statements (18b)

Assuming that reduplication is an Indonesian-specific way to express plural (19c) (see section 3.1 and 4.2), the XS approach pursued in this paper provides a simple account for the particular cluster of morphosynatactic characteristics of Indonesian in (19b-e). from independently motivated assumptions laid out in section 2. First, Indonesian is a bare nominal language because a bare noun denotes the sum of singularities plus pluralities made from them, as we saw in (4). This analysis, thus, correctly explains the insight behind Chierchia's treatment of bare nouns as a name for a kind which neutralizes the distinction between singular and plural instances of that particular kind. Second, our XS approach further argues that there is no optionality with respect to classifiers. It is simply that there are two possible morphosyntactic derivations, one with a classifier and the other without. The two derivations are given in (20a, b).

(20)a.



b.



In (20a), the NumP is merged with the Q head because the classifier *orang* needs to be licensed by an overt numeral (see section 3.2.2). In (20b), the overt numeral *tiga* 'three' is directly merged with the bare noun. Note that the two derivations here end up yielding the same interpretation, namely, the subset of the set consisting of pluralities containing the sum of three students, without violating any constraints on syntactic derivation. The possibility of two different derivations thus gives Indonesian the appearance of an optional classifier language. Third, bare nouns in Indonesian must obligatorily take narrow scope with respect to negation because they are names for kinds due to their general number specification, as we saw earlier. As a result, bare nouns behave like proper names, which are independently known to be scopally inert, as shown by the logical equivalence of the two syntactic derivations in (21b, c) for the sentence in (21a)

(21)a. I didn't see John. (John = obligatory narrows scope with respect to negation)
b. not [I saw John] (without scope-shifting operations)
c. John_i [I didn't see t_i] (with scope-shifting operations)

Finally, our XS approach correctly explains why reduplicated nouns cannot be used for generic statements as a natural consequence of the expressive economy. Recall again that a bare noun in Indonesian denotes in an undifferentiated manner the singularities of the entity denoted by that noun and pluralities thereof, yielding the kind orientation in Chierchia's sense. This is supported not only by the scopeless property of bare nouns, as we saw earlier but also by the fact that bare nouns by themselves are used for generic statements in Indonesian, as shown in (22).

(22) ***Anjing*** suka tulang.
dog like bone
'Dogs like bones.' (Sneddon 1996: 17, as cited in Chung 2000: 160)

Reduplicated nouns cannot be used in generic statements in Indonesian since general number/underspecification/kind-denoting nature is sufficient to make a bare nominal suitable for generic sentences in Indonesian. Thus, the merger of the Num in an attempt to yield the generic force is redundant, and hence is preempted by the N/P on the ground of expressive economy. Note that our economy-based analysis predicts that the merger of the Num should be possible in principle in sentences like (18b) as long as it brings new semantic outcomes different from generic force already available at the N/P level.

This prediction is indeed confirmed by the fact that reduplication in Indonesian is used to denote specifically plural instances of the extension of a bare noun, as formalized in (8a). As a result, (18b) is acceptable only under the plural reading for *anjing* 'dog'.

5. Conclusions

This paper has proposed a purely syntactic analysis of the denotation of bare nominals in Indonesian within the Exo-Skeletal Approach outlined in Borer (2005). Evidence has been provided that Indonesian has a radically impoverished number system in which bare nominals are non-committal as to number. The proposed analysis not only derives the inability of reduplicated nouns to co-occur with numerals or classifiers but also correctly explains the possibility of reduplication for notionally mass nouns. The proposed analysis also correctly derives the particular clustering of morphosynattcic properties of bare nominals that was shown by Chung (2000) to be problematic for Chierchia's (1998a, b) Nominal Mapping Parameter. One important theoretical consequence of the proposed analysis is that the merger of grammatical functional items such as Num and Quantity obeys expressive economy: if a functional item enforces a particular semantic molding of the underspecified/malleable item bare nominal, then its merger blocks that of all the other functional items into the higher functional domain which would enforce the same molding. Whether this economy-based view can be extended to verbal domains (v-T-C) in Indonesian or to comparable nominal domains in other languages with General Number is an important task to be undertaken for future investigation.

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