Complex Phrase Structures within Morphological Words: Evidence from English and Indonesian [*]

1. Introduction

In this paper, I explore the issue of the proper division of labor between syntax and morphology within the theoretical context of the lexicalist vs. non-lexicalist debate on the basis of detailed case studies of phrasal compounds in English and *ber*-constructions in Indonesian. I analyze these two phenomena and their implications for the interface in detail with respect to a) the identity of the grammatical module(s) and operation (s) responsible for their formation and b) the proper division of labor between the modules. The so-called Lexicalist Hypothesis has taken such a bewildering variety of forms in the literature in tandem with the development and sophistication of a wide range of theories of syntax, morphology, the Lexicon, and their interfaces, for example, in Lexical Functional Grammar (Kaplan and Bresnan 1982; Bresnan 1982), Head-Driven Phrase Structure Grammar (Pollard and Sag 1994) and Construction Grammar (Goldberg 1995, 2006)), that it is by now quite difficult to engage in the lexicalist vs. non-lexicalist debate without fully understanding each of these theories within which the hypothesis is couched. Given this historical background, it stands to reason that the literature in this particular corner of theoretical linguistics is often rife with terminological confusions and sometimes heated rhetoric, which only serve to obscure the true points of difference among the competing theories of the syntax-morphology interface, despite the impressive array of languages and constructions that may provide solid empirical grounds for contrasting them.

The objective of the present article is to analyze phrasal compounds in English and *ber*-constructions in Indonesian in order to grasp a clear sense of what aspect(s) of which version of the lexicalist and non-lexicalist theories are really at stake and need to be improved upon in light of these phenomena, with specific attention to details of analysis, as opposed to turns of phrases that have often been used in the literature for brevity's sake. Specifically, I demonstrate in sections 2 and 3 what empirical challenges each of these phenomena raises for several versions of the lexicalist theory actually proposed in the literature and what alternative analyses can meet these challenges. In section 4, I discuss design specifications revealed from our investigation of phrasal compounds and *ber*-constructions which any theory of the syntax-morphology interface must meet. I claim that the firewall theory of the syntax-morphology interface, recently put forth by Lieber and Scalise (2007), not only meets these design specifications, but also serves as an explanatory model for future research within which the proper division of labor between the morphology and syntax can be productively pursued. Section 5 is the summary of the paper.

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2. Phrasal Compounds in English

In her comprehensive study to explore the proper division of labor between syntax and morphology, Lieber (1992) argues that the phenomenon of phrasal compounding poses empirical challenges for the so-called Lexicalist Hypothesis. Phrasal compounds are a type of compounds that are headed by a simplex noun together with a phrasal non-head element. This compounding process is quite productive in Germanic languages such as English, Dutch (Ackema and Neeleman 2004), German (Meinbauer 2007), and Afrikaans (Botha 1981), but also observed in other non-Germanic languages such as Chinese (Wiese 1996). Though the potential significance of phrasal compounding for the proper theory of the syntax-morphology interface has been too often mentioned in the literature, no work has ever investigated phrasal compounds in depth with particular attention to a) what aspects of the Lexicalist Hypothesis must be rejected or improved upon and b) what analysis may elucidate this potentially revealing phenomenon. Thus, in their most recent survey of the status of the Lexicalist Hypothesis within the generative framework, Lieber and Scalise (2007) mention phrasal compounds as a strong challenge to the hypothesis, but conclude that there is no good analysis for this phenomenon.

The purpose of the present section, therefore, is to reassess the significance of phrasal compounds within the context of the lexicalist vs. non-lexicalist debate and to propose a new analysis of it. Following the general path set by Lieber (1992), I first review major existing versions of the lexicalist hypothesis since the early 1970s and show in what ways this phenomenon makes a case against various tenets of this hypothesis. I then suggest, within the framework of the Minimalist Program (Chomsky 1995, 2004, 2007, 2008), that this type of compounding can be explained on a par with regular compounding of two simplex roots (as in *black board, nurse shoes, red coat*, and so on) as a natural consequence of the Multiple Spell-Out/MSO Model proposed by Uriagereka (1999) and further articulated by Johnson (2003).

2.1. *Phrasal Compounds in English*

Lieber (1992: 11-14) points out examples of phrasal compounds in English as in (1a-d). Additional examples are given in (1e, f) from Bauer (1983: 164).

(1)a. [$_{NP}$ the Charles and Di] syndrome
b. [$_{PP}$ over the fence] gossip
c. an [$_{VP}$ ate too much] headache
d. [$_{TP}$ God is dead] theology
e. [$_{CP}$ what do you think?] movement
f. [$_{MoodP}$ don't tell me what to do] look

Lieber (1992: 14) defines the Lexicalist Hypothesis as stating that "rules of morphology and rules of syntax cannot interact," intending the versions of this hypothesis proposed in Chomsky (1970) and Lapointe (1980) (see section 2.2 for more detailed discussion on Chomsky's position.)

Lieber argues that the examples in (1a-f) raise counterevidence the hypothesis so defined because pre-nominal material of any syntactic complexity can successfully be combined with simple nominal heads such as *syndrome, gossip, headache, theology*, and so on.

To the best of my knowledge, Botha (1981) is the first to mention phrasal compounds as a challenge for lexicalist theories. More specifically, after developing a lexicalist analysis of synthetic compounds in Afrikaans, Botha concludes his paper with a large collection of phrasal compounds in this language as counterexamples to his own *No Phrase Constraint* proposed earlier in the paper. This constraint is defined in (2). ("WFRs" stand for word formation rules.) (3a-c) show that this constraint cannot be sustained.

(2) The No Phrase Constraint (Botha 1981: 18)
Morphologically complex words cannot be formed (by WFRs) on the basis of syntactic phrases.

(3)a. [$_{NP}$ [$_{PP}$ uitt die ondo op die tafel] skottel]
out-of the oven to the table dish
'oven-to-table casserole'

b. [$_{NP}$ [$_{CP}$ moet ek dit alles aleen doen] uitdukking
must I do all alone do expression
'A 'must I do it all alone' expression'

c. [$_{NP}$ [$_{VP}$ saas laat in die bed] kinders
at night late in the bed children
'children who (habitually) go to bed late' (Botha 1981: 74, 75)

The existence of these freely formed phrasal compounds in Afrikaans, therefore, poses non-trivial difficulties for the strictly defined version of the lexicalist theory whereby rules of morphology, including compounding, cannot operate on the basis of syntactic objects.

2.2. *Phrasal Compounds and the Lexicalist Hypothesis*

It is an entirely different task to show that phrasal compounding is really problematic for existing versions of the lexicalist theory, not the generally assumed architecture of this theoretical persuasion. As stated in section 1 already, many variants of this theory have been presented within diverse theoretical frameworks since the early 1970s. In this section, I review several well-known versions of this theory (i.e. Chomsky 1970, Anderson 1982, 1992, Kiparsky 1982, Mohanan 1986, Di Sciullo and Williams 1987, and Bresnan and Mchombo 1995) and show that these variants all have several empirical shortcomings in face of phrasal compounding. At the same time, however, I observe that lexicalist approaches, particularly, Bresnan and Mchombo's analysis, leaves some important insights about the nature of this phenomenon, which any analysis of the syntax-morphology interface must be able to incorporate.

2.2.1. Chomsky's (1970)/Anderson's (1982, 1992) Weak Lexicalist Theory

Looking at various theories of the lexicon-syntax interface proposed and articulated since the early 1970s to the present within the framework of Generative Grammar, the Lexicalist Hypothesis comes in two varieties, strong and weak versions. The strong version of the Lexicalist Hypothesis (Lapointe 1980; Selkirk 1982; Chomsky 1995) holds that *all* word formation processes occur in the pre-syntactic/autonomous lexical component. The weak version of the Lexicalist Hypothesis, which has heretofore most often been associated with Chomsky (1970), maintains that certain (regular, productive) word formation processes occur in the syntax whereas other (irregular, non-productive) processes occur in the Lexicon. This is one 'standard' interpretation of Chomsky's position, for example, that provided by Spencer (1991), as in (4).

(4) Spencer's (1991) Interpretation of Chomsky's (1970) Weak Lexicalist Hypothesis
Chomsky argued that transformations should capture regular correspondences between linguistic form, and that idiosyncratic information belonged in the lexicon … derived nominalizations are morphologically, syntactically and semantically idiosyncratic…"
(Spencer 1991: 69)

As an anonymous reviewer points out, Marantz (1997) claims that Chomsky actually argued *against* a lexicalist treatment of derived nominalizations by showing that such a treatment needs to stipulate a uniform pattern concerning the unacceptability of the transitive use of internally caused change of state predicates like *growth* (Levin and Rappaport-Hovav 1995), as in **John's growth of tomatoes*, a pattern that would be naturally explained by the lack of (a certain type of) *v* in the syntactic approach to word formation as argued for in Marantz (1997). Most recently, this alternative interpretation is hinted in Chomsky (2008). For the purposes of this paper, however, I simply follow Spencer's arguably "traditional" interpretation of Chomsky's work.

According to Chomsky (1970), compounding is a word formation process in the lexical component. It is widely acknowledged that compounds exhibit various syntactic, semantic, and phonological irregularities (e.g., non-permutable word order, semantic drift, and stress shift). On the other hand, we saw in the last subsection that syntactic objects of any arbitrary complexity and syntactic category can occur as the first member of phrasal compounds. If so, the derivation of a phrasal compounding requires that the lexical process take the output of the syntactic derivation. However, this ordering is impossible under the generative model of language within which Chomsky's (1970) lexicalist hypothesis was couched (i.e. the Extended Standard Theory), which posits the Lexicon as an autonomous pre-syntactic component that interfaces with D-structure. That this sequential ordering characterless the Chomsky-style lexicalist theory is also stressed by Borer (1998), who makes the statement with regard to lexicalist theories in the 1970s.

(5) Borer's (1998) Statement Regarding Lexicalist Theories in the 1970s

The way in which L[exical] I[ntegirty] H[ypothesis] is enforced in many of these models is by assuming that the W[ord] F[ormation] component, as a block of rules, is ordered with respect to the syntax. The WF component and the syntax thus interact only in one fixed point. Such ordering entails that the output of one system is the input to the other. This notion of the autonomy of the syntax and the WF component, and the restricted interaction between them, thus mimics the notion of autonomy developed for the interaction between the syntax and the phonology, where it is the output of the former which interacts with the latter. (Borer 1998: 152, 153)

Thus, I conclude that Chomsky's weak lexicalist theory is not tenable in face of phrasal compounding, as originally noted by Lieber (1992).

Anderson (1982, 1992) develops a different version of the weak lexicalist theory that does not depend on the notions of productivity, irregularity, and so forth. Instead, Anderson argues that inflectional morphology is treated in the syntax whereas derivational morphology is treated in the lexicon. His definition of "inflectional morphology" is given in (6).

(6) Anderson's (1982, 1992) Definition of "Inflectional Morphology"

Inflectional morphology is what is relevant to syntax. (Anderson 1982: 587)

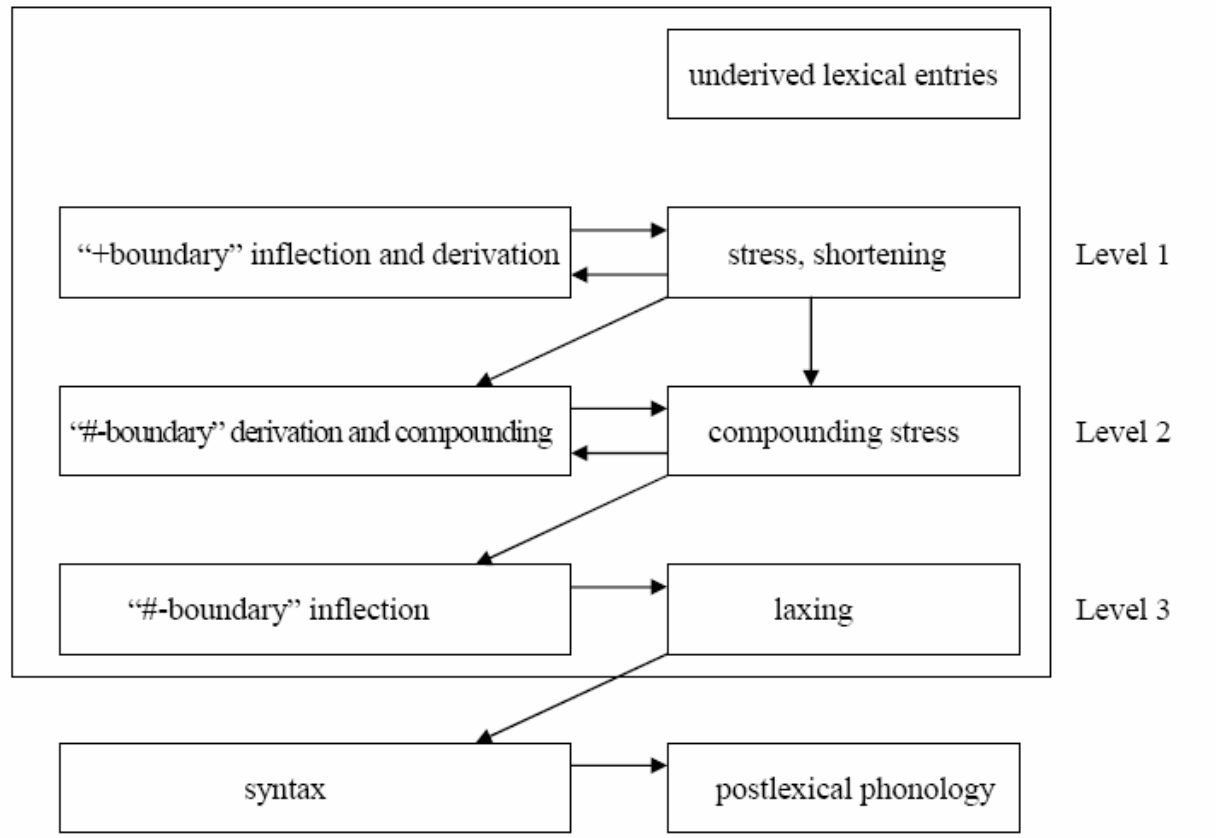
Anderson (1992) is explicit about his conception of the Lexical Integrity Hypothesis. He argues (p. 84) that "the syntax neither manipulates or has access to the internal structure of words." Phrasal compounds pose a non-trivial difficulty for Anderson's view of the Lexicalist Hypothesis. The formation of a phrasal compound is relevant to the syntax in the sense that a phrasal, non-head member of such a compound is syntactically generated. Since compounding is conceived of as a word-formation process in the Lexicon in the lexicalist theory, the creation of a phrasal compound requires the output of the syntax to serve as input for the Lexicon. Again, this ordering is impossible under the generative framework of the 1980s and early 1990s (i.e. Government-and-Binding and Classical Minimalist Models; Chomsky 1981, 1993, 1995) wherein an independent Lexical component is posited prior to the D-structure/Numeration.

2.2.2. Kiparsky's (1982)/Mohanan's (1986) Lexical Phonology

Phrasal compounding is also problematic for one well-known version of the strong lexicalist theory known as *Lexical Phonology* (Kiparsky 1982; Mohanan 1986; see also Pesetsky 1979). This theory maintains that morphology and phonology interact in tandem with each stratum/cycle governing operations with certain characteristics. Specifically, affixational/inflectional processes with irregular phonological and morphological consequences occur in Stratum 1 while regular inflectional processes with transparent consequences occur in a later Stratum (Stratum 3 in Kiparsky/Stratum 4 in Mohanan). Kiparsky's (1982) model of

Lexical Phonology is given in (7) below. See Mohanan (1986) for a further development of Kiparsky's model, which I am not going to discuss here.

(7) Kiparsky's Model of Lexical Phonology in English (Kiparsky 1982: 133)



Lexical Phonology claims that word formation rules and lexical phonological rules are partitioned into an ordered series of levels/strata/cycles (recall Borer's 1998 statement in (5)). "+boundary" inflectional affixes in Level 1 include umlaut (e.g. *tooth-teeth*), ablaut (e.g. *sing-sang*), and other stem-changing morphological processes whereas "+boundary" derivational affixes include what have been called Level 1 affixes in the Level-Ordering Hypothesis of Siegel (1973) and Allen (1978) such as −*al*, −*ous*, and −*im*, as in *refusal*, *pious*, and *impotent*. "#-boundary" derivation in Level 2 involves what Level 2 affixes such as *un*−, −*ness*, and −*er*. Finally, "#-boundary" inflection in Level 3 deals with cases of affixation involving the rest of the regular inflectional affixes such as plural −*s*, and past tense −*ed*. To illustrate, consider the derivation of *codifiers*. The base stem *code* is submitted to the phonological rules of Level 1, where the word formation rule attaches the Level 1 affix −*ify* to the stem. This derived stem is assigned stress as *códify* in the same Level. The resulting object is submitted to the phonological component of Level 2, in which the word formation rule attaches the agentive suffix −*er* to derive *codifier*. Finally, when the resulting object enters Level 3, the regular plural formation applies yield *codifier*. Kiparsky assumes that the derivation of all words should go

through all these levels, even though relevant phonological and morphological processes may apply vacuously at any one of these levels. Among central assumptions of Lexical Phonology is the *Bracketing Erasure Convention*. This convention deletes all brackets at the end of each stratum/level of word formation, thereby rendering access to the previously available internal structure of complex words opaque in later strata/cycles. This convention, thus, derives the Lexical Integrity Hypothesis, namely, that word formation processes in Level 2 and Level 3 cannot look into the morphological makeup of complex morphological objects created by word formation processes in Level 1 and Level 2, respectively. Lexical Phonology, therefore, predicts that no processes in a particular level should be able to apply to a complex object that is derived by word formation processes characteristic of earlier levels. This prediction is falsified by phrasal compounds in English. Under the model of Lexical Phonology, compounding is a process at Level 3. However, the input of such a process is the output of fully productive syntactic processes that should apply after all strata. Of course, one could resort to "looping" (Mohanan 1986) that allows the morphology to have recourse to the previous stratum while maintaining the strict division of cycles for phonology, but the introduction of this notion effectively leads to the abandonment of the central tenet of Lexical Phonology mentioned above.

2.2.3. Bresnan and Mchombo's (1995) Lexical Integrity Hypothesis

Let us now consider another version of the strong lexicalist theory proposed by Bresnan and Mchombo (1995). Bresnan and Mchombo define the Lexical Integrity Principle as follows:

(8) The Lexical Integrity Principle (Bresnan and Mchombo 1995: 181, 182)

...words are built out of different structural elements and by different principles of composition than syntactic phrases. Specifically, the morphological constituents of words are lexical and sublexical categories − stems and affixes− while the syntactic constituents of phrases have words as the minimal, unanalyzable units; and syntactic ordering principles do not apply to morphemic structures. As a result, morphemic order is fixed, even when syntactic word order is free; the directionality of 'headedness' of sublexical structures may differ from supralexical structures; and the internal structure of words is opaque to certain syntactic processes.

Because Bresnan and Mchombo is the only work in the lexicalist tradition to provide an explicit analysis of phrasal compounds and their implications for their Lexicalist Integrity Principle, it is important to review and examine their analysis of this phenomenon in detail.

Bresnan and Mchombo essentially counter that the mere presence of phrasally complex elements within compounds is an insufficient ground to undermine (8). Specifically, they make the following suggestion:

(9) Bresnan and Mchombo's (1995) View on Phrasal Compounding with Respect to Lexical Integrity
In sum, we suggest that true phrasal recursivity is lacking in word structure. Where syntactic phrases appear to undergo morphological derivation, it is by virtue of their being lexicalized. Although lexicalization can be innovative, the non-syntactic status of lexicalized phrases embedded in word structure can be detected in properties such as lexical gaps, and can be confirmed by the other lexical integrity tests.
(Bresnan and Mchombo 1995: 194)

This suggestion states that the phrasal constituent of a compound is either lexicalized or can be lexicalized on the spot. In other words, as an anonymous reviewer notes, complex expressions are actually not syntactic phrases within morphological words but rather treated as a process of relexification, a mechanism for allowing complex expressions to be reanalyzed as a single unit, as in $[_{DP}$ a $[_{NP}$ $[_{N}$ keep-off-the-grass$][_{N}$ sign$]]]$. In favor of this idea of lexicalization/relexification, Bresnan and Mchombo note that a) phrasal elements of a compound behave like a name or direct quote and that b) they are opaque to interpretive processes such as reference. Point a) appears to be true in light of Wiese's (1996) observation that any kind of phrase, foreign words, non-verbal gestures, or nonce words, can occur as the non-head member of a phrasal compound, as in *die No-future-Jugendlichen* "the no-future youngsters", *jiang-huayu campaign* "speak-Mandarin (Chinese) campaign (English)", and *seine [non-verbal gesture]-Haltung* 'his [non-verbal] gesture' (interpreted as "I don't care when, for example, the gesture is a shrug of the shoulders). However, not *all* phrasal members of such compounds sound like quotes in our normal understanding of the term; consider, for example, *stuff-blowing-up effects* and *comic-book and science-fiction fans* (Harley to appear). More generally, Bresnan and Mchombo's and Wiese's analysis have the inherently weakness in that that they leave the very notion of "quotation" undefined. We may certainly claim that all phrasal members of compounds are quotative, but this claim must be backed up by independent criteria of what constitutes a quotation.

Point b) has been widely known since the seminal work of Postal (1969). For example, as the same anonymous reviewer notes, indexicals as in *me-first generalization* do not behave as such as the member of a phrasal compound (i.e. do not refer to the speaker). This is in contrast to indexicals as used in sentences/phrases like *John said Mary believed that he loves me,* where *me* always refers to the speaker, no matter how deeply embedded it may be. The reviewer observes that this type of referential opacity is correctly predicted under the lexicalist theory since the structure of such compounds is essentially [the [X generation]], where "X" is any unanalyzable string in the same way X is in the direct quote "John said 'X'". As a result, it fails to interact syntactically or semantically with anything else in the larger expression. Thus, it is not surprising that the opacity of the sort just illustrated has been taken by Bresnan and Mchombo (1995) and many other lexicalist theorists (including Di Sciullo and Williams 1987) as evidence for the Lexical Integrity Principle. However, as Lieber and Scalise (2007:5) independently observe, this conclusion is no necessarily warranted. It has been commonly held in recent work on the syntax-

semantics interface (see Higginbotham 1985, Longobardi 1994, and Heim and Kratzer 1998) that the only saturated nominal element (i.e. DP) can refer. That the first member of a compound is not headed by a determiner is evidenced by lack of determiner quantification (e.g. *book* in *book writer* does not refer to a particular book), case, and other elements that would normally appear when the same nominal is used in syntactic phrases/sentences and dominated by D; see also Levi (1978) for additional arguments for the lack of D in compounds. Accordingly, the referential opacity of compound-internal indexicals can be independently accounted for by the lack of determiner quantification without necessarily invoking the Lexical Integrity Hypothesis. Therefore, point b) does not support Bresnan and Mchombo's analysis of phrasal compounds.

As far as I can see, the most serious problem with Bresnan and Mchombo's lexicalist approach to phrasal compounds lies in their claim in (9) that examples of phrasal compounds are formed by the potentially innovative lexicalizing of phrases. Two considerations suggest that this analysis cannot be upheld in its entirety. See Lieber and Scalise (2007: 5) for similar remarks. Firstly, a question remains as to whether phrasal compounds that Bresnan and Mchombo call "innovative" can be all stored in the lexicon to be incorporated into the compound. Interpreted literally, this analysis could entail that all new phrases that we have come across should be stored (at least temporally) in the (finite) Lexicon. Their analysis, thus interpreted, is hard to sustain because the number of innovative compounds is infinite. To illustrate this point, Ackema and Neeleman (2004: 126) show that examples such as (10a-e), which are found by their ten-minute survey, contain "phrases which are unlikely to be listed, such as *animal-to-human, bragging-about-himself,* or *go-anywhere-at-any-time*."

(10)a. white-van-man
b. sit-on-the-sidelines-Euro policy
c. animal-to-human-communication
d. go-anywhere-at-any-time-access
e. bragging-about-himself-calligraphy (Ackema and Neeleman 2004: 126)

It is not clear whether it is theoretically desirable to have a theory of the syntax-lexicon interface where all these examples as well as other potential cases of phrasal compounds that will be created are freely formed and stored in the Lexicon. Ackema and Neeleman make the same point against Bresnan and Mchombo's analysis based on Dutch examples in (11a-c).

(11)a. [$_{NP}$[$_{CP}$ warom level wij?] problem]
why live we problem
'why we live problem'
b. [$_{NP}$ [$_{PP}$ uit je bol] muziek]
out-of your head music
'out of your head music'

c. [$_{NP}$ [$_{VP}$ blijf van mijn lijf] huis]
stay-away from my body home
'stay away from my body home' (Ackema and Neeleman 2004: 126)

These examples, among many others, are what they have simply made up on the fly. Meinbauer (2007: 240) adds similar arguments from examples in (12a-d) in German where the non-heads are all freshly produced.

(12)a. Irgendetwas-stimmt-mit-dem-Jungen-nicht-Blick
'something-is-wrong-with-the-boy look'
b. Teenager-finden-si-und-ihre-Liebe-Prinzip
'teenagers-find-themselves-and-their-love principle'
c. Zap-und-weg-Fernsehzeiten
'zap-and-away TV times'
d. 90-Tonnes-Steak
'90-tons steak' (Meinbauer 2007: 240)

The phrasally complex compounding pattern, therefore, provides a strong argument against Bresnan and Mchombo's lexicalist approach to compounding. One might object, as did an anonymous reviewer, that my present counterargument against Bresnan and Mchombo's analysis is based on the conflation of "lexical/lexicalization" with "listed". As Di Sciullo and Williams (1987) and Williams (2007) point out (see also section 2.2.4 for related discussion), there are many non-listed/non-memorized morphological objects (e.g. *un-complicated-ness*, *un-realistic-ness*) just like there are many listed/memorized syntactic objects (e.g. *kick the bucket, take a DP to task*). Therefore, the equation "lexical = listedness" is certainly incorrect within Di Sciullo and William's (1987)/William's (2007) version of the strong lexicalist theory. However, I submit that at least Bresnan and Mchombo's analysis still stands on this equation, judging from the fact that their primary basis of diagnosing a phrase within a compound as lexical in their paper is whether or not it shows a flavor of "lexical gap" (i.e. whether it sounds less plausible compared to other examples).

Secondly, it is not clear under Bresnan and Mchombo's analysis what role syntax is really playing in the formation of phrasal compounds because the non-heads do obey normal rules of syntax. Irrespective of the component(s) of grammar in which phrasal compound are formed, it is at least the case that the phrasal constituent is a well-formed phrase or a sentence in isolation. It seems that Bresnan and Mchombo's lexicalization-based analysis ignores this fundamental involvement of syntactic derivation in the formation of phrasal compounding. Rather, given this observation, it is more natural to think to design a theory of the syntax-morphology interface in which phrasal members of such compounds are freely in the syntactic component and are freely combined via compounding in the morphological component.

Based on the above considerations, I conclude that Bresnan and Mchombo's version of the Lexical Integrity Principle has certain architectural properties that need to be dropped or improved upon in face of phrasal compounds.

2.2.4. Di Sciullo and Williams' (1987)/William's (2008) Atomicity Hypothesis

Di Sciullo and Williams (1987) develop the most comprehensive variant of the strong lexicalist theory that is conceptually very different from other instantiations of such a theory, including Chomsky (1970), Anderson (1982, 1992), Kiparsky (1982), Mohanan (1986), and Bresnan and Mchombo (1995). Di Sciullo and Williams maintain that morphology and syntax are two different domains of inquiry with two different primes (e.g., stems, affixes, roots vs. NPs, VPs, CPs) and formal operations (compounding, θ-identification vs. movement, quantification). Thus, for Di Sciullo and Williams, the so-called lexicalist hypothesis/the lexical integrity hypothesis/the lexical atomicity "is not a principle of grammar but rather a consequence of the conception that grammar contains two subparts, with different atoms and different rules of formation" (p.2). Under this conception, the word "lexicon" takes a different sense from the most commonly associated sense as the generative component that stores words and their formation rules. For them, the lexicon is the storage house for *listemes*, "objects of no single specifiable type (words, VPs, morphemes, perhaps intonation patterns, and so on) that "fail to conform to interesting generalizations." (p. 3). While adopting this strict division of labor between the word system and the phrase system, Di Sciullo and Williams do not fail to mention that morphology and syntax can still communicate with one another through a restricted range of shared vocabulary to accommodate the fact that morphological objects serve as material for the syntax to operate on. Specifically, they claim that the intermodular interaction is through "topmost properties of words, the features and argument structure of the topmost words." (p. 45). This interaction is explained in (13). Williams (2007), the most recent update of Di Sciullo and Williams's version of the strong lexicalist hypothesis, maintains essentially the same position.

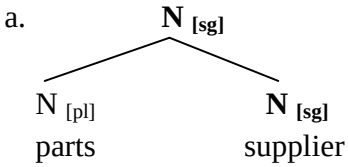
(13) The Thesis of the Atomicity of Words (Di Sciullo and Williams 1987: 48, 49)

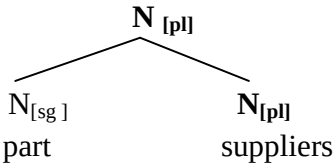
Although syntactic rules can access the categorial status and argument structure of a lexical item, they will never depend on how that categorial status or argument structure was arrived at through morphological derivation or on the internal constituency of words. The rules of syntax can see that a word has such and such properties, but they cannot see how it came to have those properties. …Words are "atomic" at the level of phrasal syntax and phrasal semantics. The words have "features," or properties, but these features have no structure, and the relation of these features to the internal composition of word cannot be relevant in syntax.

Di Sciullo and Williams illustrate this restricted intermodular interaction with number agreement in compounds (p. 49). English compounds derive their agreement features from the percolation of the features of the right-hand head (Williams 1981). Importantly, it is the top-level

information on the root level of the compound (the topmost N in (14a, b)) that is used for the purposes of the subject-verb agreement in the syntax, as the contrast between (15a, b) shows.

(14) English N + V compounds

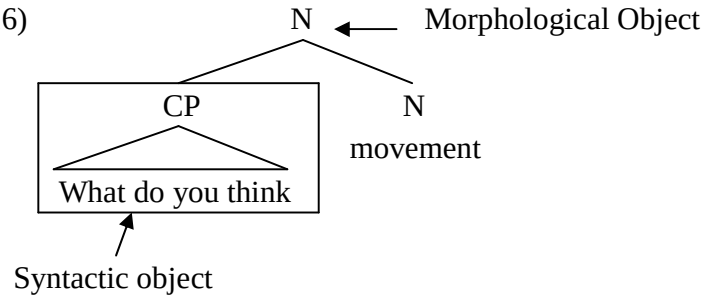
a. 

b. 

(15) a. Parts-supplier is/*are mean to me.
b. Part-suppliers *is/are mean to me.

That is, all details about the internal structure and features of the morphological object are "informationally encapsulated" (Williams 2007: 353) from the viewpoint of syntax. All syntax can do is use the agreement feature recorded onto the topmost Ns in (14a, b). The agreement pattern in (15a, b) falls out because feature specifications of the non-head member of the compound are simply unavailable to the syntax. This pattern thus illustrates one way by which we allow syntax and morphology to communicate through the restricted range of shared vocabulary while still blocking syntax from accessing the internal morphological structure of compounds (see also section 4 for much relevant discussion). Di Sciullo and Williams include argument structure as another top-level property that allows this intermodular communication.

Phrasal compounding suggests a certain revision to Williams' version of the strong lexicalist theory because it requires the object generated by the phrase system to be combined with a root via compounding in the word system. This interaction is shown in (16).

(16) 

In (16), the syntactic object (i.e. CP) is used as the non-head constituent of the compound. The interaction illustrated in (16) potentially challenges Di Sciullo and William's (1987) view that the syntax-morphology interaction can only be mediated through "top-level nodes" of the objects of the two modules since it leaves unclear what feature of the CP makes it accessible to the morphological process. This is a problem since 1) any syntactic phrases may serve as the non-head member of phrasal compounds irrespective of their syntactic category and b) in many

phrasal compounds, the phrasal and head members stand in diverse semantic relations (e.g. restrictive modification) that cannot be characterizable in terms of argument structure (e.g. Agent, Theme, etc). Phrasal compounds also argue against one aspect of Williams' (2007: 353) (also potentially Di Sciullo and William's 1987) lexicalist position, namely, that "the channel of communication [between the word system and the phrase system] is asymmetrical, by virtue of the fact that phrases are made out of words, but not vice versa" since we see in (16) that a morphological word is made *out of* a syntactic object. Our discussion, therefore, suggests that a theory of the syntax-morphology interface is preferable that makes the access to top-level information between syntax and morphology symmetrical, so that the latter can operate on the output of the former just as well as the other way around. Under this revision, the syntax derives a syntactic phrase. The morphology derives an X-N compound. Although it is not clear whether the categorial information is actually used in any way by the compounding process, the existence of phrasal compounds at least shows that the syntax-morphology interaction must run in both directions rather than just one.

2.4. *Spelling-Out Phrasal Compounds*

I have shown that phrasal compounds raise empirical challenges for or require certain modifications to several versions of the weak/strong lexicalist theory proposed in the literature. It is important to remind ourselves, however, that this is an issue about the global organization of the grammar, specifically as it relates to the syntax-morphology interface, and hence is entirely separate from the question of what is the right analysis of the phenomenon itself. What is clear, however, is that any theory of the interface must be so constructed to accommodate phrasal compounds. As stated at the outset of section 2, however, no single explicit analysis has been put forth that attempts to elucidate this very phenomenon. The purpose of this section is to suggest one such analysis within the MSO model of the Minimalist Program. I show that this model not only allows for a unified treatment of phrasal compounds and regular X-N compounds.

2.4.1. Uriagereka's (1999)/Johnson's (2003) MSO Model and Renumeration

One central hypothesis of the derivational theory of syntax within the Minimalist Program (Chomsky 1995, 2004, 2007, 2008; Epstein et al. 1998, Uriagereka 1999) is that phonological and semantic information is transferred to the syntax-external interpretive components in a piecemeal fashion; see Bresnan (1971) and Jackendoff (1972) for important earlier proposals that antecede this general idea. Uriagereka (1999: 252) presents one version of this hypothesis from the viewpoint of keeping the simplest linearization procedure within Kayne's (1994) Linear Correspondence Axiom ("If α asymmetrically c-commands β, α precedes β."). Since this procedure can function only with uniformly right-branching configurations (or what Uriagereka "Command Units"), it cannot determine the relative ordering between the terminal nodes contained within two complex left-branching structures. Uriagereka proposes that syntactic derivation Spells-Out one of these complex structures to PF before it merges with the other so

that the relative ordering of the terminals within the Spelled-Out structure may be correctly fixed by the simplex linearization process stated above. When the ordering is fixed, the structure attains the status of "a giant lexical compound", whose set-theoretic status is no different from a simplex lexical item such as *book, paper*, and *desk*, and is later plugged in where it belongs in the entire derivational workspace.

This model derives the well-known Left-Branch effects/Conditions on Extraction Domains (Cattell 1976; Huang 1982), which prohibit movement of any element from the non-complement position, as illustrated in (17a, b).

(17)a.* $[_{DP}$ Which book$]_i$ did $[_{DP}$ a critic of $t_i]$ meet you at the conference?
b.* $[_{DP}$ Which book$]_i$ did you go to class $[_{PP}$ before she read $t_i]$?

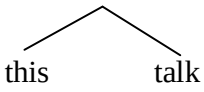
The extraction from the subject and the adjunct positions is impossible here because the DP/PP that contains the *wh*-phrase *which book*, as an internally complex left-branching structure, must be Spelled-Out early to PF, leaving this portion as a closed/frozen domain. As a result, the movement of *which book* is prohibited. Uriagereka's model dictates that complex specifiers and adjuncts be Spelled-Out early for the purposes of linearization at PF before they merge with another left-branching structure, and hence form closed domains for syntactic extraction.

Johnson (2003) develops a slightly different version of the MSO model from the perspective of the syntax-phonology interface. Specifically, Johnson argues that internally complex adjuncts and subjects (which he reanalyzes as XPs adjoined to TPs; see also Kayne 1994) are Spelled-Out mid-derivationally and renumerated as a syntactic subtree. This model thus provides a natural explanation of the left-branch effects illustrated earlier. To illustrate his model, consider the syntactic derivation of the VP *flew after this talk*. Its derivation is given in (18a-g) in a step-wise fashion.

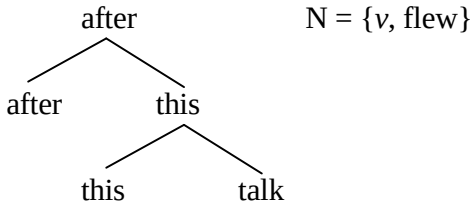
(18) The MSO Derivation of the VP *flew after this talk*

a. **Select:**
talk N = {*v*, flew, after, this}

b. **Merge**:
this N = {v, flew, after}

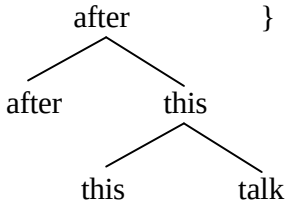


c. **Merge:**



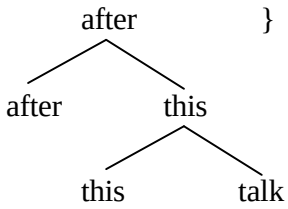
d**. Remunerate:**

N = {v, flew,

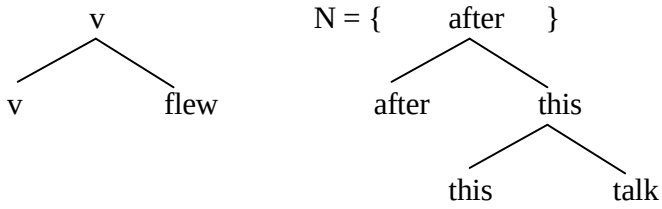


e. **Select:**

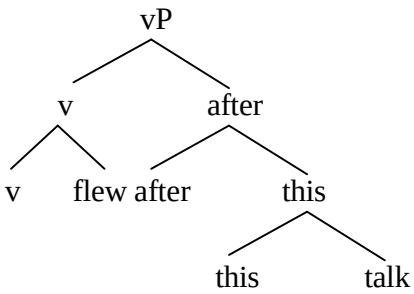
v N = {flew,



f. **Merge**:



g. **Merge:**



The adjunct PP *after this talk* is assembled as shown in (18a-c). This PP then is Spelled-Out and remunerated as a derived subtree, as shown in (23d). This renumerated item is merged

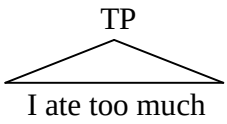
with the VP as seen in (23e-g). Johnson shows in detail that adjunct and subject phrases always require renumeration for the derivation to converge. Note that this version of MSO model does not entail that adjunct and subject XPs renumerated into the syntactic derivation should turn into a terminal lexical item. For the purposes of this paper, however, I assume that all and only internally complex left-branching configurations are re-introduced into the syntactic derivation as a derived terminal lexical item, as originally suggested by Uriagereka's MSO model.

2.4.2. Phrasal Compounds as Renumerated Lexical Items

Having introduced the MSO model, let us now consider how phrasal compounds are formed. The relevant part of the derivation of (1c), *an ate-too-much headache*, is given in (19a-d). The Numeration = {an, ate, too, much, headache}

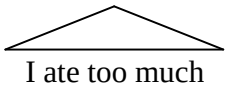
(19) The MSO Derivation of the Phrasal Compound *an I-ate-too-much headache*

a. **Assemble TP**:

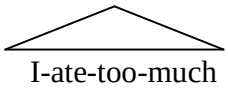


N = {an, headache}

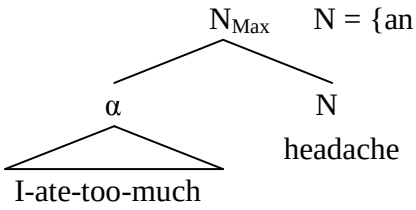
b. **Spell-Out & Renumerate TP**:



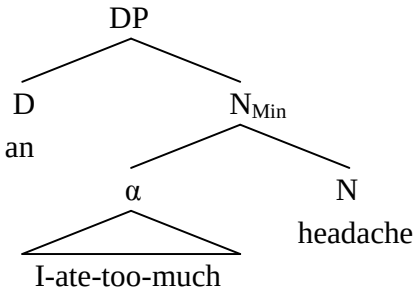
N = {an, α, headache}



c. **Merge α with N:**



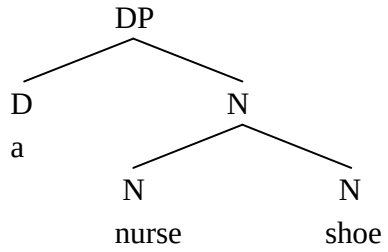
d. **Merge N with D**



The derivation starts as shown in (19a) with assembling the TP *I ate too much*. Since the merger of the TP with the DP would result in a non-linearizable string at PF, the derivation Spells-Out and renumerates the TP into the numeration, as shown in (19b). This operation destroys the internal structure of the TP, rendering it a terminal element designated here as α. This derived simplex item undergoes merge with *headache* (19c) and then with *a* (19d), yielding the phrasal compound *an I-ate-too-much headache*.

It is important to note that, after being Spelled-Out, the TP is renumerated as a terminal element. In other words, the output representation shown in (19d) is structurally non-distinct from the representation for regular X+N compounds such as *a nurse shoe*, shown in (20).

(20) The Syntactic Derivation for the regular X+N compound *a nurse shoe*



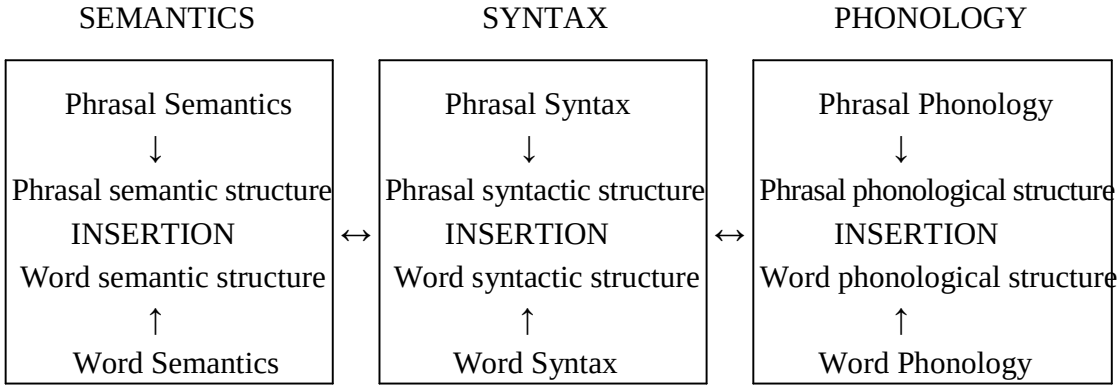
Our proposed analysis, thus, allows for a straightforward reduction of the apparently problematic process of phrasal compounding to the regular compounding as seen in (20). Given that Spell-Out is an independently motivated Last-Resort operation within Uriagereka's (1999) MSO model that is triggered only for otherwise non-linearizable left-branching configurations, our proposed analysis does not introduce any extra machinery such as relexification/lexicalization as in Bresnan and Mchombo's (1995) analysis (see also Ackema and Neeleman 2004), specifically tailored for phrasal compounds. Our analysis also directly solves architectural difficulties that faced several versions of the lexicalist theory based on strict level-ordering (Chomsky 1970, Anderson 1982, 1992, Kiparsky 1982, Mohanan 1986) because, under our analysis, phrasal compounds are nothing but the product of combinatorial processes independently available within the generative syntax. Our analysis also brings us a number of favorable empirical consequences. Recall that the MSO system provides a straightforward explanation for the observation that extraction out of subjects and adjuncts results in ungrammaticality, as shown in (17a, b). Thus, we correctly account for the opacity of the phrasal constituent of a compound with respect to transformations. In other words, apparent effects of the Lexicalist Hypothesis/Lexical Integrity Hypothesis/Atomicity Hypothesis are epiphenomenal consequences of the Spell-Out and renumeration processes that are independently available in the syntax.

It is important to recall in this connection Bresnan and Mchombo's (1995) claim that phrasal compounds involve innovative lexicalizing of phrases in the Lexicon. As we have seen in section 2.2.3, their analysis amounts to the somewhat odd claim that any new instance of the phrasal member of each compound is going to be listed in the lexicon. This was shown to be

untenable, given the infinite number of phrasal compounds. The current analysis directly solves this problem by replacing their "innovative lexicalizing" as "syntactic renumeration", thereby avoiding the need to list all instances of phrasal compounds in the Lexicon. I take this as one conceptual advantage that would be hard to come by in lexicalist alternatives.

The proposed analysis comes very close to the one proposed by Ackema and Neeleman (2004). Developing the tripartite parallel architecture of grammar espoused by Jackendoff (1997), Ackema and Neeleman propose that the grammar of natural language consists of three independent modules (syntax, semantics, and phonology) and that each of these three modules in turn consists of two sub-modules: phrasal syntax/semantics/phonology and word syntax/semantics/phonology, as shown in (21).

(21) Ackema and Neeleman's (2004: 4) Modular Organization of the Grammar



Under this parallel architecture of grammar, what is traditionally conceived of as morphology is a micro-module that plays its role in all the three macromodules (SEMANTICS, SYNTAX and PHONOLOGY). Ackema and Neeleman further argue that this model allows for the integration of the structures generated by Phrasal Syntax and Word Syntax, given that sentences and phrases may contain complex objects. Their model instantiates this intra-modular interaction through *insertion*, which is feature checking between notes in the two independently generated representations. This conception of the syntax-morphology interface, thus, naturally allows morphological representations into syntactic representations or vice versa as long as features are matched in the two representations, rendering it conceptually distinct from the more traditional building block theory, as in the minimalist framework (Chomsky 1995), whereby smaller units in the morphology (words) are inserted into larger units in the syntax (phrases). Under Ackema and Neeleman's theory of the morphology-syntax interface, then, phrasal compounding become one special case of a syntactic representation being inserted into a morphological representation under the categorical feature matching between the terminal node of the compound and that of its phrasal member. However, I do not adopt this analysis since, just like Di Sciullo and William's (1987) theory, it leaves utterly unexplained what role the notion of insertion actually plays in the generation of phrasal compounds. Recall that any object of any structural complexity can occur as the phrasal

member of a compound, irrespective of its syntactic category. This consideration suggests that, as far as phrasal compounds are concerned, categorical feature matching is simply irrelevant the insertion of syntactic representations into morphological representations in the syntactic micromodule, contrary to their analysis. Our proposed analysis, which follows the more conservative building block theory of insertion, straightforwardly captures this category-insensitive property of phrasal compounding from independently motivated syntactic principled such as MSP.

3. *ber*-Constructions in Indonesian

Together with phrasal compounds, the phenomenon of noun incorporation has been a subject of lively investigation within the context of the lexicalist vs. non-lexicalist debate since the groundbreaking work by Mithun (1984, 1986) and Baker (1985, 1988). Based on her four-way classification of noun incorporation constructions in an impressive range of typologically diverse languages of the world, Mithun (1984) argues for the lexicalist treatment of noun incorporation. Her research was engaged by Saddock (1986), who argues that syntactic noun incorporation must be recognized in Greenlandic Eskimo and Southern Tiwa. Against Mithun's lexical treatment, Baker (1988) presents a syntactic, movement-based analysis of her Type III and Type IV noun incorporation within the Government-and-Binding Theory (Chomsky 1981, 1986).

The purpose of this section is to discuss complex predicates prefixed by *ber*− in Indonesian and discuss their implications for the lexical vs. syntactic approaches to complex word formation. I show that *ber*−constructions exhibits bracketing paradoxes: a noun within the complex predicate forms a prosodic unit with only the prefix but is modified by phrases outside of the predicate. I claim that this discontinuous modification pattern straightforwardly falls out from the incorporation analysis à la Baker (1988). I then argue for the syntactic nature of the incorporation involved in *ber*−constructions, employing several diagnostics developed in the literature.

3.1. *Bracketing Paradoxes in* ber−*Constructions*

Indonesian, an SVO language of the Austronesian family, is known for its word formation processes whereby a variety of derivational and inflectional affixes are attached to roots and existing words of varying syntactic category and size to make progressively more complex stems. The inflectional affixes include the active and passive voice markers *meN*− and *di*−, respectively.[1] Derivational affixes in this language come in three types: prefixes, suffixes, and

[1] As an anonymous reviewer points out, this usage may sound unconventional on the following ground. Although the distinction between derivation and inflection is often not clear-cut, the standard practice takes voice alternation to be the hallmark of derivational morphology. Thus, calling *meN*− and *di*− inflectional marker presupposes a syntactic treatment. I believe that whether a particular morpheme belongs to derivational or inflectional morphology must be determined on a language-particular basis. Anderson (1982) presents cases where what counts as derivational in some languages may well be inflectional in other languages. For example, he notes that diminutives and argumentatives, which would be treated as derivational in English, are inflectional in the West

circumfixes. One such affix, *ber−*, has a vast range of syntactic, morphological, and semantic functions, depending on whether it attaches to nominal, numeral, or verbal bases. For the purposes of this paper, I concentrate on case where *ber−* combines with noun stems. The following exposition of this affix owes a great deal to the comprehensive description and analysis of this affix provided by MacDonald (1976) and Sneddon (1996).

According to MacDonald (1976:44-45) and Sneddon (1996:61-65), *ber−* combines with noun stems to create verbs or adjectives that are characteristically intransitive. This affixation may have one of the following as its semantic functions. A) It denotes a customary possession of, or to characterization of by, the referent of the noun (22a, b). B) It denotes the act of producing the referent of the noun or making use of it (22c, d). C) It denotes using a noun as a form of address when the noun refers to a title or a form of address (22e). D) It denotes making a living with a profession or a particular way of life if the nominal base refers to a profession or way of life of a human being (22f, g). E) It denotes reciprocity when nominal bases entail reciprocal relationships of some kind (22h, i). (22a-g) are from MacDonald (1976: 44, 45). (22h, i) are from Sneddon (1996: 62)

(22) *ber−*prefixation: Input Stem= Noun/Output= Verb

a.	anak	‘child’	→	[ber [anak]]	‘have children’
b.	kaki	‘foot’	→	[ber [kaki]]	‘have feet’
c.	kokok	‘cackle’	→	[ber [kokok]]	‘produce a cackle’
d.	sepeda	‘bicycle’	→	[ber [sepeda]]	‘use a bicycle’
e.	tuan	‘Mister’	→	[ber [tuan]]	‘use Mister in addressing a person’
f.	kuli	‘coolie’	→	[ber [kuli]]	‘work as a coolie’
g.	tukang	‘artisan’	→	[ber [artisan]]	‘work as an artisan’
h.	teman	‘friend’	→	[ber [teman]	‘be friends’
i.	musuh	‘enemy’	→	[ber [musuh]	‘be enemies’

One important characteristic of *ber−*, noted by MacDonald (1976: 45, 46), Tampubolon (1983: 97-105), and Sneddon (1996:64), is that this affix may cause syntax-morphology mismatches by combining with nominal stems. Specifically, this affix may attach to a nominal stem which on the surface does not form a constituent with the modifiers in the whole clause, in apparent violation of the standard requirement on modification. Consider a minimal pair in (23a, b).

Atlantic language Fula. There is by now a growing body of literature (Saddy 1991, Cole et al. 2008, Aldridge 2008, Sato 2008) in Indonesian syntax, which convincingly that the distribution of *meN−* and *di−* is governed by movement, arguing for a formal analysis of this distribution within the Phase Theory (Chomsky 2004, 2007, 2008). Therefore, I continue to assume that the voice markers are inflectional affixes in Indonesian.

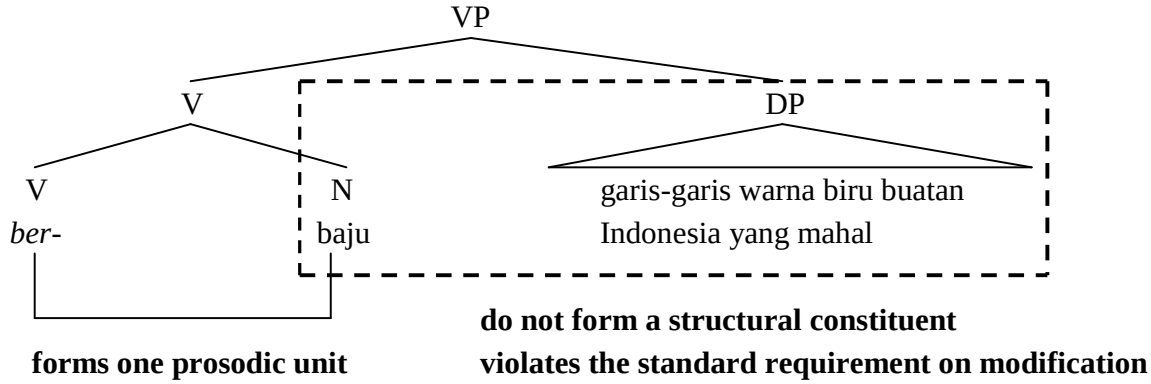
(23) Syntax-Morphology Mismatches in *ber*−Constructions

a. Ibu-ku mempunyai [$_{NP}$ ***baju*** garis-garis warna biru buatan Indonesia yang mahal].
mother-my have cloth stripe-RED color blue made-in Indonesia that expensive
'My mother has an expensive blue striped cloth made in Indonesia.'

b. Ibu-ku ber-***baju*** [$_{\alpha P}$ garis-garis warna biru buatan Indonesia yang mahal].
mother-my BER-cloth stripe-RED color blue made-in Indonesia that expensive
'My mother wears an expensive blue striped cloth made in Indonesia.'

(23a) illustrates a regular head-complement structure. The transitive verb *mempunyai* 'have' selects the structurally complex direct demarcated here by NP. Our focus here is on (23b). In this construction, which is semantically equivalent to (23a), the noun *baju* 'cloth' is combined with *ber*−. As a result of this prefixation, the noun on the surface does not form a constituent with the rest of the phrases within the αP that modify it. This configuration, illustrated in (24), violates the standard requirement on modification that an element and its modifier(s) form a syntactic constituent.

(24) Syntax-Morphology Mismatches in the *ber*−Construction in (23b)



Arka et al. (2009) independently point out examples such as (25a, b). The head noun and its modifier(s) are in boldface.

(25)a. Ia ber-**sepatu** **hitam**.
3s BER-shoe black
'S/he is wearing black shoes.'

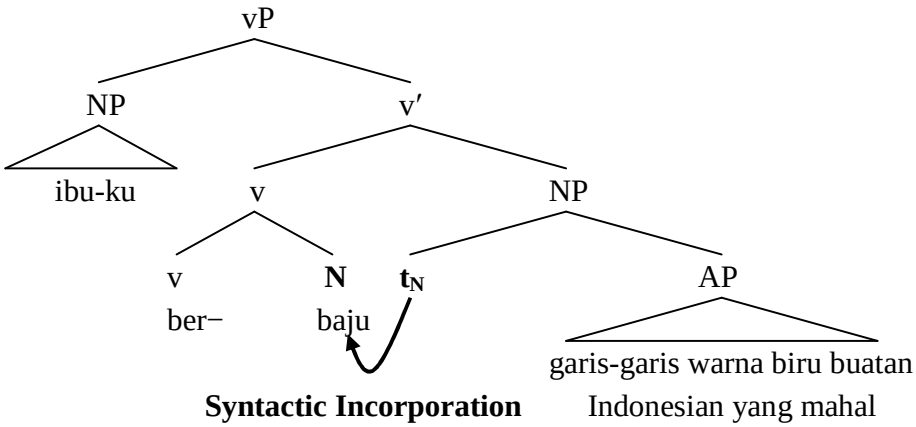
b. Ia ber-**istri**-kan **orang** **Indonesia**.
3s BER-wife-APPL person Indonesia
'S/he is having/has an Indonesian wife.' (Arka et al. 2009)

Based on these examples, they conclude that elements within morphological words must be accessible for certain word-external syntactic processes.

3.2. *Syntax-Morphology Mismatches and Noun Incorporation*

I propose that the syntax-morphology mismatch observed in (23b) and (25a, b) arises due to the overt head movement of the head noun into *v*. To take (23b), for example, the noun *baju* 'cloth' is incorporated from within the complex direct object into V in the sense of Baker (1988) (see also Haugen 2004), as in (26).

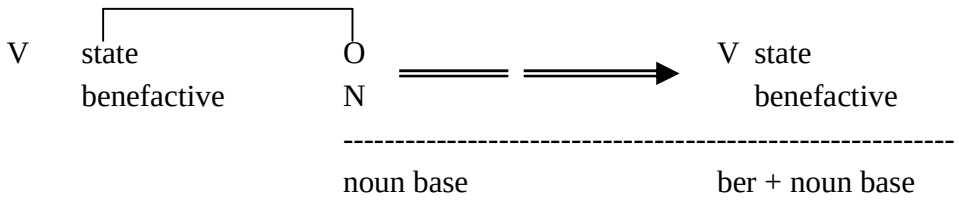
(26) The Incorporation Analysis of the Syntax-Morphology Mismatch in (23b)



In this derivation, the complex NP headed by *baju* 'cloth' is generated in the syntax by recursive processes of Merge. When the NP is merged with *v*, the head of the NP, *baju*, is incorporated into the head, deriving the surface order in (23b). The same analysis applies to (25a, b).

An analysis similar to the present one was independently proposed by Tampubolon (1983: 97-99) for the first of her four types of *ber*−noun combinations, which corresponds to the case under investigation here. Tampubolan (1983: 99) argues that "a noun representing an object in the semantic structure of a state benefactive verb may be incorporationally converted into a state benefactive verb", in the manner seen in (27).

(27) Tampubolan's (1983: 99) Incorporation Analysis of *ber*− Constructions



Although our proposed analysis and Tampubolon's share fundamental insights, the two approaches are framed under different conceptions of incorporation. Whereas the former is couched within the purely structural approach to noun incorporation proposed by Baker (1988) within the Principles-and-Parameters framework, the latter regards it as a lexical/pre-syntactic operation in the sense of Gruber (1965) (see also Fillmore 1968), who propose to derive

denominal verbs like *skin* from the pre-syntactic semantic incorporation of [$_N$ skin] into the abstract semantic predicate REMOVE (Tampubolan 1983: 99). I provide evidence in section 3.3.1 that this lexical approach would require non-trivial complications to account for the full range of properties of *ber*−constructions that are naturally circumvented in our syntactic analysis.

Before we present evidence for our syntactic treatment of *ber*−constructions, let us consider the following alternative analysis, which seems to be consistent with what we have observed above. An anonymous reviewer suspects that the syntax-morphology mismatch in question is also consistent with the following analysis: *ber*- is a clitic light verb (meaning something like possession) that procliticizes to the first word of the complex syntactic phrase. This analysis allows one to analyze *ber*-constructions on a par with bracketing paradoxes in English, as illustrated in (28a, b), which involve the auxiliary/possessive '*s*.

(28)a. [$_{DP}$ The man who left]'***s*** coming back.
b. [$_{DP}$ The man who's left]'***s*** hat flew off.

The 's here modifies the entire DP, *the man who left*, syntactically/semantically, but it forms a prosodic unit with only the last word of the DP, *left*. This is exactly the situation that we saw above to characterize the syntax-morphology mismatch exhibited by the *ber*−construction.

However, there is evidence that the clitic-based analysis won't extend straightforwardly to Indonesian. Consider two diagnostics in (29a, b) developed by Zwicky and Pullum (1983) distinguish between clitics and affixes.[2]

(29)a. Clitics can exhibit a low degree of selection with respect to their hosts, while affixes exhibit a high degree of selection with respect to their stems.
b. Semantic idiosyncrasies are more characteristic of affixed words than of clitic groups.
(Zwicky and Pullum 1983: 503, 504)

(29a) states that affixes tend to attach to a specific syntactic category whereas clitics are less discriminating in that they may attach to any phonological host irrespective of its category (see also Zwicky 1985 for the concept of clitics as *leaners*). Examples in (30a-c) and (31a-c) show that the contracted possessive'*s* and auxiliary'*s* in English are clitics.

[2] The other four tests concern A) arbitrary gaps, B) morphological idiosyncrasies, C) the domain of the application of syntactic rules, and D) restrictions on the combinability clitics with affixes. Since these four tests do not serve to distinguish English '*s* and *ber*−, I will not discuss them in this paper.

(30)a. The person I was talking to***'s*** going to be angry with me. [preposition]
b. The ball you hit***'s*** just broken my dining room window. [verb]
c. Any answer not entirely right***'s*** going to be marked as an error. [adjective]
d. The drive home tonight***'s*** been really easy. [adverb]
(Zwicky and Pullum 1983: 504)

(31) a. The man I was talking to***'s*** hat flew off. [preposition]
b. The man who's left***'s*** hat flew off. (=28b) [verb]
c. The man who's sick***'s*** hat flew off. [adjective]
d. The man I was talking to yesterday***'s*** hat flew off. [adverb]

In contrast to this promiscuous behavior of the two English morphemes, *ber−* in Indonesian always attaches to a specific syntactic category (i.e. a nominal stem in case at hand).

(29b) states that the semantic contribution to a sentence/phrase made by clitics is always the same as that made by their corresponding full forms. The English auxiliary and genitive are both clitics since their semantic functions are identical irrespective of whether they are contracted or not. By contrast, as we saw in (22a-i), *ber−* in Indonesian exhibits semantic idiosyncrasies: it may denote a customary possession, production of the referent of a noun stem, a form of address, the state of making a living with a profession or a particular way of life, and reciprocity, depending on what noun this affix is combined with. These two considerations, therefore, suggest that the clitic light verb analysis, as informed by English bracketing paradoxes in (28a, b), cannot be straightforwardly extended to *ber−* constructions under investigation.

3.3. *Lexical vs. Syntactic Incorporation?*

As stated at the outset of this section, it has been a matter of lively debate whether the phenomenon of noun incorporation should be treated as a lexical rule (Mithun 1984; see also Di Sciullo and Williams 1987 and Rosen 1989) or a syntactic rule (Baker 1988; see also Baker et al. 2005, and Saddock 1985, 1991). See Mathieu (2009) and Baker (2009) for very useful overviews of major issues and analyses surrounding this phenomenon. It is important to consider whether the *ber−*construction instantiates a lexical or syntactic phenomenon because this construction has never been brought to bear in the present context of lexicalist vs. non-lexicalist approaches to word formation, and hence its understanding will shed new light on the relationship between syntax and morphology. Specifically, to the extent that the Baker-style incorporation analysis captures properties of the construction that Mithun-style lexical analysis leaves unexplained, this construction argues against the lexicalist hypothesis, which claims that syntactic and lexical word formation rules cannot be intertwined. In this section, I develop three arguments based on Baker (1988, 2009) that the Indonesian *ber−*construction is best analyzed in terms of syntactic incorporation. I further address a potential counterargument from a lexical alternative such as Mithun's (1984) and show that it is not problematic for our proposed syntactic analysis.

3.3.1. The Syntactic Nature of the Derivation of *ber*-Constructions

Baker (1988: ch.3; 2009) develops a number of arguments that noun incorporation is a syntactic phenomenon rather than a lexical/compounding process, as argued in Mithun (1984) and Di Sciullo and Williams (1987). I provide three arguments here.[3] The first argument concerns his observation that noun incorporation may strand NP-material such as demonstratives, relative clauses, quantifiers, and numeral phrases. One such case from Greenlandic Eskimo is in (32a, b).

(32)a. [Sapannga-mik kusanartu-mik] pi-si-voq. (without noun incorporation)
bead-Instr beautiful-Instr Ø-get-Indic/3sS
'He bought a beautiful bead.'

b. ***Kusanartu-mik*** ***sapangar***-si-voq. (with noun incorporation)
beautiful-Instr **bead**-get-Indic/3sS
'He bought a beautiful bead.'

(Saddock (1980), as cited in Baker (1988: 94))

(32a) is a normal transitive sentence. (32b) illustrates incorporation of the noun *sapannga* 'bead' into the verb, stranding the adjective *kusanartu-mik* 'beautiful-Instr'. This type of apparently discontinuous constituency also characterizes *ber*−constructions in Indonesian, illustrated in (23b) and (25a, b). The analysis of this apparent discontinuous constituency is straightforward under our analysis: stranding is due to the overt syntactic incorporation, as shown in (25). It is not clear whether the same observation is captured in the alternative lexicalist approach to noun incorporation, as presented in Mithun (1984) and Di Sciullo and Williams (1987). These researchers propose that noun incorporation is simply a type of compounding that juxtaposes a nominal root and a verb root to form a complex verb stem in the lexicon. Thus, this lexicalist analysis entails that *ber-sepatu* 'BER-shoe' in (25a) is a verb throughout the syntactic derivation. Thus, one would predict that the adjective *hitam* 'black' should not be able to modify the verb. The grammaticality of (25a) shows that this prediction is incorrect. The same challenge also faces Tampubolan's semantic incorporation analysis since it also entails that what appears to be a

[3] In fact, there is a fourth argument made by Baker for his syntactic incorporation analysis based on his observation that the incorporated noun may leave behind an overt copy, as shown in the following Mohawk example.

(i) Ka-**nuhs**-rakv thikv ka-**nuhs**-a.
3N-house-white this pre-house-Suf
'This house is white.' (Baker 1985, as cited in Di Sciullo and Williams 1987: 64)

However, Indonesian does not allow this copy spell out option. Furthermore, Di Sciullo and Williams (1987: 66) point out that examples like (i) with the exact homophony outside and inside a verb is a special case, and hence do not provide evidence for Baker's approach. For these reasons, I will not discuss this fourth argument in this paper.

complex predicate is a simplex verb for the perspective of the syntactic derivation, as illustrated in (27). Of course, one may come up with some mechanisms to allow modification of a word-internal noun by an adjective structurally discontinuous from it but this solution not only adds complexities for the syntax-semantics interface that are not necessary in our syntactic analysis but also violates the Lexical Integrity Principle, which forbids syntactic rules from analyzing the internal structure of a (morphological complex) word.

The second argument for the syntactic nature of noun incorporation in *ber*−constructions comes from the well-known syntactic restriction on the kind of nouns that can be incorporated. Baker (1988, 2009) observes that only D-structure objects, namely, objects of transitive and unaccusative verbs, may undergo syntactic incorporation. Consider (33a, b) from Mapudungun.

(33)a. Ñi chao kintu-waka-le-y.
My father seek-cow-PROG-IND.3sS
'My father is looking for the cows.'
NOT: 'The cow is looking for my father.' (Baker 2009: 154)

b. Juan ngilla-waka-lel-fi-y.
Juan buy-cow-APPL-3O-IND.3sS
'Juan bought a cow for him/her.'
NOT: 'Juan bought it for the cow.' (Baker 2009: 154)

(33a, b) shows that noun incorporation is possible from the direct object position, not from the subject or benefactive/goal positions. This object vs. non-object asymmetry immediately falls out under Baker's analysis since noun incorporation is just one instance of the more general head-to-head movement operation, and hence conforms to independently known structural principles. Specifically, the alleged incorporation from [Spec, TP]/ [Spec, Appl] involves lowering, in violation of the ECP.

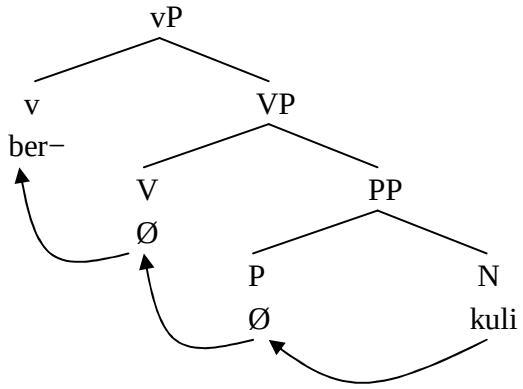
In contradistinction to Baker's syntactic analysis, lexicalist theorists such as Mithun (1984: 875) and Di Sciullo and Williams (1987: 67) propose an alternative characterization of what can be combined with a verb in terms of the θ-role *Theme/Patient*. (33a, b) are grammatical only when the Theme/Patient arguments are compounded with the verb.

Let us now consider which analysis works better for *ber*−constructions in Indonesian. Since direct objects are most typically occupied by Theme/Patient DPs and vice versa, the two analyses make the same predictions over the vast majority of examples, including (23b) and (25a, b). However, there are cases such as (22f, g), repeated here as (34a, b), where the two analyses can be empirically teased apart. Additional examples are in (34c, d) from Sneddon (1996: 63).

(34)a.	kuli	'coolie'	→	[ber [kuli]]	'work as a coolie'
b.	tukang	'artisan'	→	[ber [artisan]]	'work as an artisan'
c.	kuli	'laborer'	→	[ber [kuli]]	'work as a laborer'
d.	ternak	'animal farming'	→	[be [ternak]	'engage in animal farming'[4]

In (34a-d), the incorporated nouns do not seem to qualify as a Theme, as strandardly construed (i.e. as an entity that is moved or affected). Rather, these nouns are more like locations in an abstract, extended sense. One obvious challenge for the lexicalist approach as in Mithun and Di Sciullo and Williams is why only certain θ-roles are privileged in being compounded with the verb stem in the lexicon. Why can't Agent DPs get incorporated into the verb, like Theme and Patient DPs? The Mithun-style compounding analysis amounts to the listing of θ-roles of the nouns that can be incorporated, and hence does not provide a principled explanation for why only nouns with particular θ-roles can be incorporated. As stated above, the Baker-style incorporation analysis resolves this question from independently motivated syntactic constraints such as ECP. The syntactic derivation for the complex predicate in (34a) is shown in (35).

(35)



I assume that the surface complex predicate *berkuli* 'work as coolie' is derived from the successive incorporation of the noun *kuli* 'coolie' through the P and the V into the light verb *ber−*. Each instance of the three head movements in (35) conforms to the ECP (or the Head Movement Constraint, which may be derived from the ECP). The syntactic approach to *ber−* is certainly superior to the lexicalist alternative in that the former avoids the reference to arbitrary, non-explanatory listings of θ-roles of the incorporated nouns required in the latter.

The final argument for the syntactic nature of the incorporation involved in *ber−*constructions concerns the ability of incorporated nouns to introduce discourse referents (Baker 1988, 2009). Consider the Mapudungun example in (36).

[4] The *r* of *ber−* may drop when the stem starts with *t*. This deletion depends on the stem. Compare (34d) and (22h).

(36) Ngilla-waka-n. Fey langüm-fi-ñ.
buy-cow-IND.1sS then kill-3O-IND.1S
'I bought a cow. Then I killed it.'

In this example, the incorporated noun *waka* 'cow' introduces a discourse referent that can be picked up in the following sentence by the third person pronoun *fi*. The assumption that underlies Baker's argument here is that, unlike DPs within syntactic phrases, no element within morphological derived words may introduce a discourse referent. This prohibition, widely known as the Anaphoric Island Constraint (Postal 1969) (cf. section 2), is illustrated in (37).

(37) * I poured the *tea*$_i$-kettle but I did not drink ***it***$_i$.

To the extent that the same constraint also holds for the morphologically derived words in Mapudungun, Baker argues, the ability of incorporated nouns to introduce independent discourse referents provides evidence in favor of the syntactic analysis of cases like (36).

Now, (38a, b) show that *ber*−constructions pattern with noun incorporation in Mapundungun.

(38)a. Ia ber-***sepatu***$_i$ hitam sekarang. Ia akan menyumbangkan-***nya***$_i$ ke gereja nanti.
3s BER-shoe black now 3s will donate-them to church later
'S/he is wearing black shoes. S/he will donate them to a church later.'

b. Saya ber-***istri***$_i$-kan orang Indonesia. ***Ia***$_i$ bicara Bahasa Jawa.
I BER-wife-APPL person Indonesia. 3s speak Javanese
'S/he is having/has an Indonesian wife.'

In (38a), the incorporated noun *sepatu* 'shoe' introduces a discourse referent that is later picked up by the clitic pronoun −*nya* 'it/them' in the subsequent clause. Similarly, in (38b), the third person pronoun *ia* refers back to a discourse referent introduced by *istri* 'wife'. Note that, in Indonesian, an element within a morphologically derived word is referentially opaque, as shown in (39), as in English.

(39) * Saya membeli$_i$ botul-***susu***$_i$ tapi tidak meminum-***nya***$_i$.
I bought bottle-milk but Neg drink-it
'I bought a milk$_i$-bottle but I didn't drink it$_i$.'

The grammaticality of (38a, b), therefore, suggests that the incorporation responsible for *ber*−constructions is a syntactic process, as argued in Baker, not a lexical/compounding process.

3.3.2. A Potential Counterargument against the Syntactic Incorporation Analysis in English

Having provided evidence for the syntactic incorporation analysis of *ber*−constructions in Indonesian, I shall address here one potential counterargument against the present analysis from a lexicalist point of view, suggested by an anonymous reviewer. Consider (40).

(40) I baby-sat Mary's kid.

The reviewer observes that the compound verb [$_V$ baby sit] is a back-formation from [baby sitter], which has been reanalyzed as a simple verb, taking a direct object. Mithun (1984: 847) provides several arguments for this treatment. Among other arguments, she observes that 1) such verbs rarely exist without gerundive forms (e.g. *baby-sitting*), and that 2) such verbs exhibit none of the semantic relations (Patient or Theme) between the nominal stem and the verbal stem characteristic of noun incorporation. Given his/her assumption that "baby does not use-up the internal argument slot of this verb, which is syntactically filled by the NP [Mary's kid], the reviewer reasons, "that such structures are possible with lexical compounds apparently undermines the kind of argument set out by Baker and appealed to by Haugen and in this paper."

I find this argument ill-conceived. I submit that (40) is *not* within the purview of our syntactic incorporation analysis precisely because *baby* and *sit* do not instantiate any of the structural/semantic relations that hold true for bona fide incorporation structures. Baker (1988: 78) is fairly explicit on this point. He observes that the examples in (41a-c) are "unproductive and sporadic back formations from the productive deverbal compounds like *babysitter, grocery-shopping, bartender*."

(41)a. I ***babysat*** for the deOrios last week.
b. We need to ***grocery-shop*** tomorrow.
c. Kevin ***bartends*** on Friday night. (Baker 1988: 78)

One signature property of noun incorporation is that all languages which exhibit noun incorporation constructions also have unincorporated counterparts (Mithun 1984, Baker 1988, 2009). This property does not hold for *baby sit*, *grocery-shop*, and *bartend*, as shown in (42a-c).[5]

(42)a. * I sat the baby for the deOrios last week.
b. * We need to shop the groceries tomorrow.
c. Kevin tends the bar on Friday night. (Baker 1988: 78)

The ungrammaticality here (see note 5), therefore, suggests that *baby sit* should not be analyzed as the result of the syntactic incorporation à la Baker (1988, 2009). The compounding analysis of

[5] "Only the (c) example is conceivable, and even here *the bar* is not a referential NP of the usual type." (Baker 1988: 78)

Mithun (1984) and Di Sciullo and Williams (1987) may well be correct for backformation in English. The point here is, however, that examples of backformation like (39) in no way undermine the syntactic approach to noun incorporation since they are not formed by syntactic incorporation, to begin with.

4. The Lexicalist Hypothesis at the Syntax-Morphology Interface

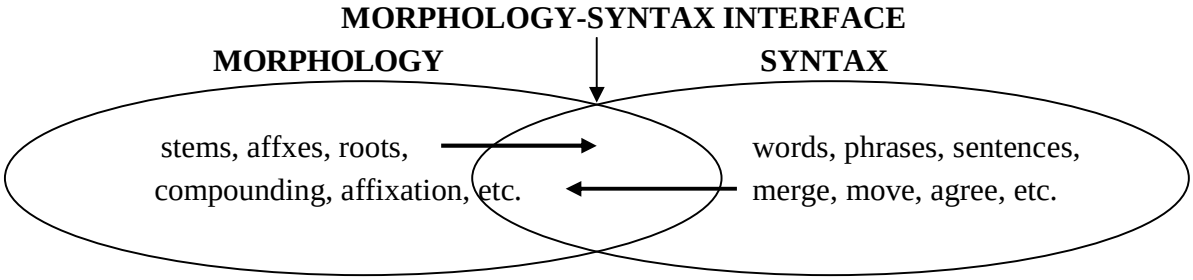
So far, we have discussed phrasal compounds in English and *ber−*constructions in Indonesian in depth as a window into the precise division of labor between morphology and syntax. Our discussion thus far reveals several architectural design specifications that any empirically adequate theory of the morphology-syntax interface has to meet. In this section, I discuss such specifications and suggest directions toward an explanatory theory of the syntax-morphology correspondence under which such phenomena may naturally manifest themselves, drawing on Lieber and Scalise's (2007) recent work on the syntax-morphology interface.

4.1. *What does Phrasal Compounds Tell us about the Syntax-Morphology Interface?*

Our discussion of phrasal compounds in English rejects all versions of the lexicalist theory in the 1970s and 1980s, including Chomsky (1970), Anderson (1982, 1992), Kiparsky (1982), and Mohanan (1986), that postulate the Lexicon as a sequentially ordered component with respect to the syntactic component. The creative nature of phrasal compounds, namely, that any syntactic phrase may occur for compounding, strongly argues against Bresnan and Mchombo's (1995) lexicalist analysis of phrasal compounds in terms of innovative lexicalization. Our investigation has also made it clear that the interaction between morphology and syntax is symmetrical rather than asymmetrical, as entailed by Di Sciullo and Williams (1987) and Williams (2007). The conclusion is rather than morphology operates on the representations generated by syntax or that syntax feeds morphology. Finally, compounding gives often unpredictable syntactic, semantic, and phonological side effects that do not normally occur in sentences and phrases. Thus, phrasal compounds do not seem to be analyzable as a uni-modular (e.g. exclusively syntactic or morphological) phenomenon since either this irregularity or the productivity of such compounds noted above would remain unexplained. This indicates that recent eliminative theoretical approaches to the Lexicon as an independent component for word formation as in the Distributed Morphology framework (Halle and Marantz 1993; Marantz 1997; Harley and Noyer 1999; Embick and Noyer 2007) may not be futile unless it is shown that they can completely make do with well-known morphological principles governing compounding, affixation, and other word formation processes. By denying the Lexicalist Hypothesis, this approach also seems to allow much freer interaction between the morphology and syntax, but the interaction is far more limited than what it leads us to predict. Arguing that morphology is entirely done within the generative syntax, therefore, comes with the formidable task of explaining many phenomena (e.g. information encapsulation, immediate vs. delayed resolution, the direction of headedness in phrases vs. words) that indicate that the two components are indeed independent modules.

Taking the observations above and the undeniable fact that morphological words serve as building blocks for syntax, we are lead to a particular theory of the syntax-morphology interface such as the one in (43), which is independently proposed by Lieber and Scalise (2007: 20).

(43) The Firewall Theory of the Syntax-Morphology Interface



In this theory, morphology and syntax are two independent modules of grammar with their own sets of primitives and operations that may interact both ways but only in a limited fashion. Syntax and morphology are firewalled from each other in the default case, meaning that the deviations from the Lexicalist Hypothesis are exceptions rather than the rule. In this sense, the present theory agrees with Di Sciullo and Williams (1987) and Ackema and Neeleman (2004), which accommodate limited intermodular communication through access to top-level features and generalized feature-based insertion, respectively. On the other hand, the present theory is different from Di Sciullo and William's theory in that the inter-modular interaction is symmetrical and may not involve their top-level features (i.e. categorical features and argument structure). It is also different from Ackema and Neeleman's theory in that the interaction is not based on feature matching but rather governed by independently motivated (arguably modular-independent) processes such as Merge and Spell-Out. The question now becomes what is going on in the intersection of the morphology and syntax illustrated in (43). I suggest an answer to this question in the next subsection that is informed from our analysis of *ber*−constructions.

4.2. *What does* ber−*Constructions Tell us about the Syntax-Morphology Interface?*

Our analysis of *ber*−constructions in Indonesian adds further architectural designs that the theory illustrated in (43) must be able to satisfy. We have seen that the syntax-semantic mismatch exhibited by this construction is best analyzed as one instance of noun incorporation in the sense of Baker (1988). This result is important in the following sense. On the one hand, our analysis of the construction is in keeping with Baker's (1988, 2009) syntactic analysis of noun incorporation, which has proven to yield an illuminating account for otherwise mysterious various properties of noun incorporation in Mohawk and Mapudungun (e.g. stranding of NP-related material, structural restrictions on incorporable nouns, discourse reference, and stranded copy of the incorporated noun). On the other hand, our result is in contrast with that achieved by several other influential works on noun incorporation in other languages of the world (Mithun 1984,

1986; Di Sciullo and Williams 1987; Rosen 1989) Thus, Mithun (1984) presents important arguments that, in many languages including but not limited to Oceanic (Mokilese, Yapese, Samoan, Ponapean, Kusaien, Tongan), Mayan (Mam, Kanjobal), Lahu, Nisgha, Gurindji, Comanche, Tupinambá, Yucatec Mayan, and Blackfoot, what perceive as noun incorporation is simply a juxtaposition/compounding process in the lexical component. The Indonesian construction under investigation is important because it reveals an apparent conflict between the two camps regarding noun incorporation and leaves us with the question of why particular V+N combinations are syntactic in certain languages but morphological in other languages.

I suggest that the answer to this question is available in the Limited Access Principle in (44) proposed by Lieber and Scalise (2007). Their definition of *Morphological Merge* is given in (45).

(44) The Limited Access Principle
Morphological Merge can select on a language specific basis to merge with a phrasal/sentential unit. There is no Syntactic Merge below the word level.
(Lieber and Scalise 2007: 21)

(45) Morphological Merge
Let there be items α and β, such that α is a base and β a base or an affix. MM takes α, β (order irrelevant) and yields structures of the form <α, β>γ
a. where γ is an X^0, categorically equivalent to α or β, and
b. α or β can be null. (Lieber and Scalise 2007: 21)

This principle gives us a number of favorable consequences. First, the principle in (44) leaves open whether a V+N combination in a particular language is due to the morphological process of juxtaposition/compounding or the syntactic process of incorporation. Thus, it is not surprising that the properties of "noun incorporation" are different from language to language. This point is emphasized by Baker (2009), who makes the following concluding remark.

(46) Baker's (2009: 163, 164) Remarks on the Typology of Noun Incorporation
Noun incorporation constructions in different languages seem to be different enough syntactically and semantically to warrant distinct analyses. It may well be that most of the N[oun] I[ncorporation] theorists are correct for the language(s) they know best, and become wrong only if they say or imply that there is a unified syntax for all the constructions called noun incorporation in the languages of the world.

I have been unsuccessful at the present stage of my research at identifying what actual independently attested language-particular facts could contribute to the syntactic or lexical nature of the generation of V+N combinations, but this conclusion may well be the best we could get at under the recent generative conception of the lexicon (see Chomsky 1995, for example), which

holds that the lexicon is the only repository of idiosyncratic information, and hence is the only source for linguistic variation.

Though speculative at best at this point, this conclusion seems warranted from two facts, neither of which has remained unnoticed in the literature on the debate between the lexicalist and non-lexicalist approaches. First, there is no rhyme or reason in the type of phenomena that have been presented to infringe the Lexicalist Hypothesis and require interaction between the lexicon/morphology and the syntax. They include, but not limited to, *transporto latte*-type constructions in Italian (Lieber and Scalise 2007), Word Plus phenomena and post-syntactic compounds in Japanese (Kageyama 2001; Shibatani and Kageyama 1988)[6], Scope in prefixation in Spanish (Rainer and Varela 1992), sublexical coreference (Lieber 1992; Sproat 1993; Sproat and Ward 1987), phrasal inclusion within words in Yoruba, Tamil, and Tagalog (Pulleyblank and Akinlabi 1988; Subramanian 1988; Schachter and Otanes 1972), copular constructions and construct state nominals in Irish and Tagalog (Carnie 1995, 2000), reduplication in Indonesian, Kannada and Yaqui (Sato 2008, Lidz 2001, Haugen and Harley 2006), ergative case marking patterns in Warlpiri (Simpson 1983), adjectival possessive constructions in Upper Sorbian (Corbett 1987), discontinuous verbal entries in Athabaskan languages (Rice 2000, 2004), focus-sensitive placement of endoclitics in Udi (Harris 2002), resultative formation in Dutch (Neeleman and Weerman 1993), and numerous cases of syntax-morphology mismatches surveyed by Saddock (1991). The existence of these superficially different divergences from the Lexicalist Hypothesis across typologically unrelated languages suggests that the principle in (44) governs the intersection of syntax and morphology in the grammatical architecture given in (43).

Second, the Limited Access Principle expects that there should also be language-internal variation regarding the kind of phenomena that deviate from the norm. This expectation is no less true. Take English, for example. Sproat (1993) shows that phonetic duration of the lateral consonant /l/ is sensitive to the nature of morphological boundaries in a way that cannot be accounted for under lexicalist theories as in Lexical Phonology proposed by Kiparsky (1982) and elaborated by Mohanan (1986). This is because the internal structure of the complex nouns would be destroyed by the time when the post-lexical phonetic component would interpret them due to the Bracket Erasure Convention. Second, Halpern (1995) (see also Zwicky 1987) reports that the omission of the plural morpheme /s/ in English is sensitive to the morphological structure of the stem. Specifically, Halpern points out that when an NP ends with a regular plural noun such as *the girls*, *the card players* and *the books*, they do not manifest the possessive marker *–s* even when they occur in possessor positions, as shown in *the girls' parents*, *the card players' hats* and *the books' covers*. By contrast, the possessive is retained when nouns end with a sibilant or are irregular nouns, as shown in the *fuzz's sirens*, *the cheese's aroma* and *the mice's tails* (Halpern 1995: 102-103). The contrast above indicates that plural suffixation must rely on the internal

[6] Thanks to an anonymous reviewer for bringing my attention to Shibatani and Kageyama (1988).

morphosyntactic structure of the stem. Accordingly, this contrast is hard to explain under lexicalist approaches such as Lexical Phonology that adopt the Bracketing Erasure Convention.

5. Conclusions

This paper has explored the proper division of labor between morphology and syntax within the theoretical context of the lexicalist vs. non-lexicalist debate. Our investigation of phrasal compounds in English and *ber*−constructions in Indonesian allows us to identify several architectural design specifications that any empirically adequate theory of the syntax-morphology interface needs to meet. Specifically, such a theory must postulate a firewall between the two modules so as to capture the vast range of evidence amassed in the lexicalist literature in favor of the informational encapsulation between the two modules. At the same time, however, it must allow a restricted range of bi-directional inter-modular interaction between the two components of grammar so as to accommodate deviations from this encapsulation discovered in the non-lexicalist literature.

It seems thus clear that the real issue within the lexicalist vs. non-lexicalist debate is no longer which theory, the lexicalist, the non-lexicalist, or the anti-lexicalist is right (whatever framework it may be couched within or whatever form it may take). Rather, the real meaningful question is two-fold. 1) What is an empirically adequate theory that meets the apparently conflicting requirements imposed by the kinds of the syntax-morphology interaction observed in natural language? 2) Why does the syntax-morphology interface work in this particular way? This point cannot be emphasized enough, since, as an anonymous reviewer points out, the literature in this particular corner of theoretical linguistics is rife with deep-seated terminological and theory-internal (and sometimes even rhetoric) arguments and obscurities that only have served to blur the real issues in the debate as well as true points of difference among various theories of syntax, morphology, and their interface.

I have suggested, drawing on Lieber and Scalise (2007), that a promising answer to the question in 1) is available in the firewall theory of the syntax-morphology interface that admits quite restricted intermodular interaction only on a language-particular basis. The question in 2) is part of the broader question of the modularity of the faculty of language. If morphology and syntax are indeed independent modules in the Fodorian sense (Fodor 1983), then their domain-specificity (different primitives and operations) and informational encapsulation (the effects captured by the Lexicalist Hypothesis) immediately fall out. This suggestion, however, must be countenanced by robust evidence in favor of the limited intermodualar interaction, which indicates that morphology and syntax are not entirely Fodorian. I would like to reserve further discussion of this issue related to the modularity of the faculty of language for future research.

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