The Lexicalist Hypothesis: Both Wrong and Superfluous

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Abstract

The Lexicalist Hypothesis, which says that the component of grammar that produces words is distinct and strictly separate from the component that produces phrases, is both wrong and superfluous. It is wrong because there are numerous instances where phrasal syntax feeds word formation, and where phrasal syntax can access sub-word parts. It is superfluous because all the facts that are supposed to be accounted for by the Lexicalist Hypothesis follow from any adequate theory of phrasal syntax. The model of grammar that we are led to is then the most parsimonious one: there is only one combinatorial component of grammar that builds both words and phrases.

1 Introduction

The Lexicalist Hypothesis, usually attributed to Chomsky 1970, is a foundational hypothesis in numerous current approaches to morphology and syntax, including Head-Driven Phrase Structure Grammar (HPSG), Lexical Functional Grammar (LFG), Simpler Syntax (Culicover and Jackendoff 2005), various versions of the Principles and Parameters and Minimalist models, and others.[1] The basic tenet of the Lexicalist Hypothesis is that the system of grammar that assembles words is separate from the system of grammar that assembles phrases out of words. The combinatorial system that produces words is supposed to use different principles from the system that produces phrases. Additionally, the word system strictly precedes the phrasal system. This has the result that the phrasal system has no access to sub-word units, and in addition, the output of the phrasal system never forms the input to the word system.

An alternative view dispenses with the Lexicalist Hypothesis and argues that the phrasal and word formation systems are not distinct (Sadock 1980, Baker 1985, Sproat 1985, Hale and Keyser 1993, Halle and Marantz 1993, Marantz 1997, Borer 2005, among others). If this view is correct, a model of grammar does not need two separate generative components, but only one. This view has the virtue of simplicity: a model of grammar with only one component is simpler than one with two, and is therefore to be preferred, assuming that they are equivalent in their empirical coverage. In the face of this challenge, numerous recent publications have defended the Lexicalist position, arguing that the empirical facts demand the strict separation of the word and phrasal systems (e.g., Williams 2007, Newmeyer 2009, Müller 2013, Müller and Wechsler 2014).

In this paper I make two points. First, the empirical facts indicate that the Lexicalist Hypothesis is fundamentally incorrect. There are numerous instances where the output of the phrasal system feeds word formation, and there are also numerous cases where the phrasal syntax must have access to sub-word units. I make this point in section 2. Second, the Lexicalist Hypothesis is superfluous. The facts that it is meant to account for are already accounted for by any adequate model of phrasal syntax. This is shown in section 3. Since the Lexicalist Hypothesis is both incorrect and unnecessary, it can and should be dispensed with. We only need a single syntactic module in the grammar, one that produces both words and phrases. Theories that assume the Lexicalist Hypothesis need to be rejected, and researchers should put their efforts into building adequate analyses within a theory with only one component for morphology and syntax.

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[1]This hypothesis is usually referred to as the Lexicalist Hypothesis, after Chomsky (1970). It is occasionally also referred to as the Lexical Hypothesis (e.g., Williams 2007). The more common name seems to be the Lexicalist Hypothesis, so that is the name I will use. The literature on this hypothesis is too vast to cite fully here. References include Jackendoff (1972), Bresnan (1982), Kiparsky (1982), Simpson (1983), Mohanan (1986), Di Sciullo and Williams (1987), and Bresnan and Mchombo (1995). Many other references can be found in the works cited throughout the text.

2 The Lexicalist Hypothesis is Wrong

I begin by showing that the Lexicalist Hypothesis is fundamentally incorrect in its view of grammar. There are numerous cases where the output of the phrasal syntax can demonstrably precede word formation. There are also cases where the phrasal syntax has access to sub-word units, a state of affairs that is strictly banned by the Lexicalist Hypothesis.

2.1 Phrasal Syntax Can Feed Word Formation

Let us begin with the strict ordering that is part of the Lexicalist position. According to the Lexicalist Hypothesis, word formation strictly precedes phrasal syntax. The output of the word formation component can feed phrasal syntax, but not vice versa.

2.1.1 Compounding

The most well-known exception to this strict ordering involves compounding. It is common for nominal compounds to include a phrase as the first member of the compound (Fabb 1984; Lieber 1988, 1992; Spencer 1988, 1991, 413–417):

(1)   a.   I gave her a don't-you-dare! look.

  b.   She baked her fiance a sweet I-love-you cake.

In most theories, compounding must be a lexical process; as we will see below, sub-parts of compounds are generally inaccessible to the phrasal syntax (for instance, in extraction). They should therefore not be able to include phrases that are put together by the phrasal syntax.

 In fact, however, the phrases that constitute the first member of these compounds *must* be put together by the syntax, because they have the form that the syntax requires. They can be imperatives and have the form of an imperative, as in (1a), and they can have the form of a declarative, as in (1b). They can also be wh-questions and exclamatives, as in the examples in (2). In all cases, if the first member of the compound violates rules and constraints of the phrasal syntax, the result is ill-formed (3):

(2)   a.   She had that Don't-you-dare! look.

  b.   She had that I'm-so-proud-of-myself look.

  c.   She had that What-the-hell-are-you-doing?! look.

  d.   She had that What-a-strange-person-you-are! look.

(3)   a.   * She had that You-don't-dare! look. (obligatory inversion with negative imperative)

  b.   * She had that Myself-is-so-proud-of-me look. (reflexive bad as subject)

  c.   * She had that You're-doing-what-the-hell?! look. (obligatory fronting with wh-the-hell; Pesetsky 1987)

  d.   * She had that What-a-strange-person-are-you! look. (no inversion with exclamatives)

If these phrases were not put together by the phrasal syntax but by some other mechanism, that mechanism would have to precisely duplicate the constraints of the phrasal syntax.

 Additionally, as we will see in section 3.3, elements that contribute to word formation cannot generally affect things that are adjuncts to the elements they combine with. They generally only affect semantic arguments. In compounding, however, the first element can include various kinds of adjuncts, including adverbial clauses:

(4)   She had her usual How-many-times-do-I-have-to-call-[before-you'll-answer]? look.

 Moreover, according to Bresnan and Mchombo (1995) and Williams (2007), the word formation system obeys different principles from the phrasal system, such that the word system is head-final while the phrasal system is head-initial, in English (there are numerous counterexamples; see section 3.4). If the phrasal part of a compound were built by the word system, it should then be head-final, but this is not true:

(5) a. She baked her fiance a sweet I-love-you cake.

   b. * She baked her fiance a sweet I-you-love cake.

The only conclusion can be that the phrases that appear in compounding are put together by the phrasal syntax. Yet they create units—nominal compounds—that otherwise act like words in the phrasal syntax that they are embedded within. For instance, in all of the examples above, they follow determiners and adjectives to form a noun phrase, just like any simple noun. They can also be followed by relative clauses, just like simple nouns, and can appear in any NP position, for instance subject position:

(6) The sweet I-love-you cake that he baked really didn't taste very good.

They can also be wh-phrases and undergo wh-movement, on the pattern of NPs generally:

(7) Which of these sweet I-love-you cakes are you going to try making?

Bresnan and Mchombo (1995) argue that the phrases that appear in compounds are not counterexamples to the Lexicalist Hypothesis. According to them, phrases have to be "lexicalized" to be imported into compounds. The only way I can interpret this claim is that apparently a phrase is built by the phrasal syntax, but then becomes some kind of frozen unit in the lexicon, akin to a noun. It can then be used to form a compound.

There are two problems with this. First, allowing this possibility is equivalent to giving up the Lexicalist Hypothesis. If phrases can be "lexicalized" and then form an input unit to the word formation component, then there is no sense in which word formation strictly feeds phrasal syntax. The phrasal syntax *can* feed word formation, simply by building phrases that become lexical units. The Lexicalist Hypothesis has been circumvented and rendered vacuous.

Second, the empirical evidence that Bresnan and Mchombo (1995) give for their claim that compound phrases must be "lexicalized" is less than convincing. Using phrases in compounds is completely productive, as the examples above and new product ads show. The fact that non-English can be used, as in *a Heil Hitler skinhead* (Bresnan and Mchombo 1995, 194, (22)), does not show that these compounds are not put together by the phrasal syntax, since non-English phrases can regularly be manipulated in the phrasal syntax. Postal (2004, chapter 6) discusses this phenomenon at length. One can say all of the following, in English:

(8) a. He stepped out and yelled *Heil Hitler* at us.

   b. Is *Heil Hitler* German, or French?

   c. Which part of *Heil Hitler* do you not understand?

Non-English phrases can be used as objects of verbs and as subjects and even undergo subject-auxiliary inversion. They can also be part of a wh-phrase and undergo wh-movement. Since the phrasal syntax can manipulate non-English phrases, the fact that they can appear in compounds is not evidence that compounds are not using the phrasal syntax. They clearly are.

Compounding, then, is an instance of the ordering that is not supposed to be allowed by the Lexicalist Hypothesis: phrasal syntax provides the input to word formation.

2.1.2 Adjectival Passives

Other examples of this situation are not hard to find. Bruening (2014) shows that adjectival passive formation can be fed by raising to object, a process that many theories regard as syntactic (but not all; see below). Adjectival passive formation then feeds further word formation, for instance un-prefixation, as in the following examples with raising to object verbs:

(9) (Bruening 2014, 372, (30))

   a. ...his mind is unsound because it starts from premises that are <u>undemonstrated</u> to be true and that he has no reason to accept as true.

b.　[That] remains <u>unestablished</u> to be of any significance at all.

c.　We are against fad diets and questionable supplements that are <u>unproven</u> to be either safe or effective.

d.　. . . presence of silicon in bedding plant species previously <u>unreported</u> to be accumulators,. . .

e.　. . . such studies are important as they may uncover genetic variants in genes previously <u>unsuspected</u> to be related to the phenotype under study. . .

f.　No character page should have art that is a) fanmade b) <u>unverified</u> to be that character or c). . .

Again, this is a clear violation of the Lexicalist Hypothesis: a process of phrasal syntax feeds word formation. (See below on viewing raising instead as a lexical process.)

2.1.3　Resultatives

As Müller (2006) shows, the same occurs with resultatives and caused motion constructions. As is well known, objects can be added to verbs that do not select objects in certain constructions, for instance in resultatives:

(10)　a.　They fished the pond empty.

b.　* They fished the pond.

(11)　a.　She danced her shoes bloody.

b.　* She danced her shoes.

In most Lexicalist theories, word formation processes can only act on semantic arguments of a morpheme. So, if a word formation process were to apply to *fish* or *dance*, it would be unable to include an object that is licensed only by the resultative. As Müller (2006) shows, however, these resultatives quite regularly participate in adjectival passive formation and nominalization in German. Corresponding to *fish the pond empty* is the nominalization *Leerfischung*, 'empty fishing' (Müller 2006, 868). Corresponding to *dance her shoes bloody* is the adjective in (12b):

(12)　(Müller and Wechsler 2014, 32, (33))

a.　Er tanzt　die Schuhe blutig　/ in　Stücke.
　　he dances the shoes　bloody / into pieces

b.　die in　Stücke / blutig　getanzten Schuhe
　　the into pieces / bloody danced　　shoes

c.　* die getanzten Schuhe
　　the danced　　shoes

As (12c) shows, the resultative is crucial to forming the adjectival passive, since *Schuhe* is not an argument of the verb without it. In most theories, however, resultatives must be part of the phrasal component, since they manipulate units larger than words. (Müller's own approach is to assign resultatives to the lexical component; see immediately below.)

2.1.4　Raising in Nominalizations

Further examples include many that have been cited as ungrammatical in the literature. For instance, according to Chomsky (1970), nominalizations may not include raising to subject or raising to object. These examples are cited again by Newmeyer (2009) as crucial evidence for the Lexicalist Hypothesis.

(13)　a.　John was certain/likely to win the prize.

b.　* John's certainty/likelihood to win the prize (Chomsky 1970, 189, (8b))

(14)　a.　We believe God to be omnipotent.

b.　* our belief of/in God to be omnipotent (Chomsky 1970, 201, (32b))

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According to Chomsky and Newmeyer, the Lexicalist Hypothesis rules out raising to subject and raising to object in the input to nominalization, because they are rules of the phrasal syntax.

However, raising to subject and raising to object do take place in nominalizations. I for one have always found (13b) reasonably acceptable. Numerous examples can be found on the internet, including ones where the genitive is inanimate, ruling out the genitive being the holder of the psychological state of certainty in the case of *certainty*:

(15) If that is an accepted premise, the same concept should apply to the net neutrality debate and **its certainty to increase consumer bills**.
(http://www.foxnews.com/politics/2014/11/17/fcc-official-warns-obama-backed-net-neutrality-plan-will-bring-backdoor-tax-on/)

(16) . . . that the Black Panthers were eager to start a civil war despite **its certainty to cause a bloodbath**.
(blackpanthercivilrights.blogspot.com/)

(17) . . . refused to consider the underlying patent litigation, and **its certainty to be a bitter and prolonged process**.
(https://www.wsgr.com/WSGR/Display.aspx?SectionName=publications/PDFSearch/AntitrustWire_0405.htm)

Raising to subject inside a nominalization is even more widespread with *likelihood*:

(18) Sadly a species' name affects **its likelihood to survive**.
(https://twitter.com/meeurotaru/status/552744000651001856)

(19) But in this case whether or not a man was in a committed relationship had no influence on **his likelihood to sexually harass**.
(https://books.google.com/books?isbn=1555536387)

(20) However, if a peer tells the student his joke is "silly" or "stupid" he will be punished by telling the joke and **his likelihood to tell another joke** is greatly decreased.
(en.wikipedia.org/wiki/Self-control)

Raising to object also seems to be well-attested inside of nominalizations:

(21) do not trust this person or company unless you get **proof of them to be different**.
(http://www.thumbtack.com/wa/bellevue/movers/moving-services)

(22) If anyone got **proof of them to be involved in the attack** they should take them into the court.
(https://www.facebook.com/NationalMartyrs)

(23) . . . again what you are telling us is **no proof of them to be hackers**.
(http://www.kongregate.com/forums/291-yu-gi-oh-bam/topics/379107-new-hack)

(24) The same kind of features she shared with Shakiiya were **the only proof of them to be a mother and daughter**, . . .
(https://www.fanfiction.net/s/10668250/4/Athélèrn-Ithilrim)

(25) This indicates **his acceptance of them to be ministers in his church**, at all levels.
(https://books.google.com/books?isbn=1602666024)

(26) . . . for true confession consisteth in the general, in a man's taking to himself his transgressions, with **the acknowledgment of them to be his**,. . .
(The Pharisee and the Publican By John Bunyan)

(27) . . . and how I may be erroneous in **my demonstration of them to be consistent with my argument**.
(http://orthodoxbridge.com/is-the-protestant-church-fragmented-a-response-to-pastor-doug-wilson-1-of-2/)

Unlike raising to subject above, I find the above examples of raising to object unacceptable, like Chomsky and Newmeyer. However, there are so many attested examples that the only conclusion can be that there are significant numbers of English speakers who accept them. Raising to object must be allowed inside nominalizations in principle.

Moreover, the Lexicalist literature is inconsistent on this point. Chomsky (1970), Newmeyer (2009), and Wasow (1977) considered the lack of raising to subject and object inside nominalizations and adjectival passives to be crucial evidence for the Lexicalist Hypothesis. However, Bresnan (1982) and more recently Müller (2006) and Müller and Wechsler (2014) analyze raising to object, raising to subject, resultative formation, and so on, as lexical rules. As such, they can feed other lexical rules and form new words. On this view, nominalizations are fully expected to be fed by raising to subject and raising to object.

Notice that the criterion for deciding whether a rule is lexical or syntactic in this approach is not whether it manipulates units larger than words, but whether it can feed word formation or not. Müller and Wechsler (2014, 32) explicitly state that this is the deciding criterion, following Dowty (1978, 412) and Bresnan (1982, 21). By this logic, however, all of phrasal syntax must be lexical rules, because of compounding, above. We saw above that compounds can include subordinate clauses, wh-movement, subject auxiliary inversion, and various other phenomena. All of these would have to be lexical rules, according to the logic in Müller (2006) and Müller and Wechsler (2014). In other words, following their logic we again end up with a single generative component of grammar, not two that are strictly separated.

Here is my reading of history: The Lexicalist Hypothesis was originally motivated by the apparent lack of phrasal processes feeding word formation. Since that time, however, more and more instances of this have come to light. The response has often been to reassign those phrasal processes to the word formation component. What this history shows, however, is that the original motivation was incorrect. Phrasal processes can and frequently do feed word formation. If all phrasal processes that can feed word formation are reassigned to the word formation component (as lexical rules), then the phrasal component disappears altogether. Alternatively, word formation processes should be reassigned to the phrasal component. Either way, the strict separation between a word formation component and a phrasal syntax component that is envisioned by the Lexicalist Hypothesis is incorrect.

2.2 Phrasal Syntax Has Access to Sub-Word Units

The Lexicalist Hypothesis is also incorrect in its assertion that the phrasal syntax has no access to sub-word units. In fact, numerous processes can target both phrases and sub-word units.

2.2.1 Coordination/Ellipsis of Word Parts

It has long been noted that coordination of word parts is widespread (Nespor 1985, Booij 1985):

(28) a.   infra e ultrasuoni (Italian, 'infra- and ultra-sounds'; Nespor 1985, 201)

b.   Freund- or Feindschaft (German, 'friendship or hostility'; Booij 1985, 152)

c.   Pre- and post-revolutionary France were very different from each other. (Chaves 2008, 264, (10))

Chaves (2008) argues strongly that this phenomenon is actually not coordination of sub-word parts, but co-ordination of phrases accompanied by word-part ellipsis. Among the arguments is the fact that plural agreement is possible in (28c), as is antecedence of the reciprocal *each other*. The subject in (28c) must actually be *Pre-revolutionary France and post-revolutionary France*, with deletion of repeated material in the first conjunct.

Regardless, ellipsis is generally regarded as a phrasal process. Bresnan and Mchombo (1995) include it in their list of processes that cannot target sub-word units (see section 3.9). Obviously, it can. One response is to view this type of ellipsis as different from phrasal syntax ellipsis; for instance, Chaves (2014) treats it as a process that targets linearized strings, not syntactic phrases. Note, however, that this ellipsis process cannot break up morphemes that are not easily segmentable, even when the same string can be stranded in a different morphological context:

(29) a.   pro-choice and -gun control (Chaves 2008, 263, (6e))

b.   * (both) pro-gressive and -fessional

c.   * Because he is pro-fessional and -management, he is a valuable member of our team.

(30) a.   You can pre- or re-mix it.

b.   * They produce cranber- and dai-ry products.

(31) a.   Bing and Sydney Crosby (are not related).

 b.   * The room was full of bing- and bon-go players.

(32) a.   red- and black-banded moths

 b.   * red- and ind-olent

(33) a.   bi- and a-sexual

 b.   * the Bi- and A-cre Lane Campaigns (the Biker Lane Campaign and the Acre Lane Campaign)

(34) a.   bi- and a-sexual

 b.   birth- and adopted sons

 c.   * bi- and ma-son paraphernalia (bison paraphernalia and mason paraphernalia)

In (34), for instance, we see that the strings *bi-* and *a-* can stand alone, as can the string *son*. But (34c) does not work, because in these particular words *bi-*, *ma-* (similar in sound to *a-*), and *son* are not distinct morphemes.

It is true that this type of ellipsis is sensitive to prosody (Booij 1985), but it is also true that the constraints holding of it cannot be stated solely in terms of prosody (Chaves 2008, 2014). Rather, this process of ellipsis makes crucial reference to morphology. This means that it has access to sub-word parts.

Chaves (2008, 2014) also argues that the ellipsis process at work here is the same one that we see operating on phrasal units in right node raising and coordinate ellipsis. Corresponding to deletion of the left member of the second coordinate in word-part ellipsis is what is sometimes regarded as non-constituent coordination:

(35) a.   [half-brothers] and [~~half~~-sisters]

 b.   Mary [caught a fish on Monday with a fly rod] and [~~caught a fish~~ on Tuesday with a spear]. (Dowty 1988, (62)).

And corresponding to deletion of the right member of the first conjunct is right node raising:

(36) a.   [over-~~application~~] and [under-application]

 b.   The break-in on Monday was a [rare ~~breach of royal security~~] but [not unheard-of breach of royal security]. (Chaves 2014, 839, (11e))

As these examples show, these two ellipsis processes can target units larger than words, namely, phrases. At the same time, however, this process must also have access to sub-word morphemes. That is, it can see both units larger than words and units smaller than words. This is a clear violation of the Lexicalist Hypothesis: the word formation system is supposed to be encapsulated from everything that deals in units larger than the word. There should be no process that can target both phrases and morphemes. Yet this type of ellipsis does exactly that.

2.2.2 Adverbs

Other phrasal processes are also known to be able to target sub-word units. One is adverbial modification with *again* (von Stechow 1995). Consider the following examples:

(37) a.   Sally woke up sad for no reason. In the afternoon, she cheered up, but then a news report saddened her again.

 b.   Sally discovered a large opening in the side of the hill. Over a period of weeks it shrank, so she enlarged it again.
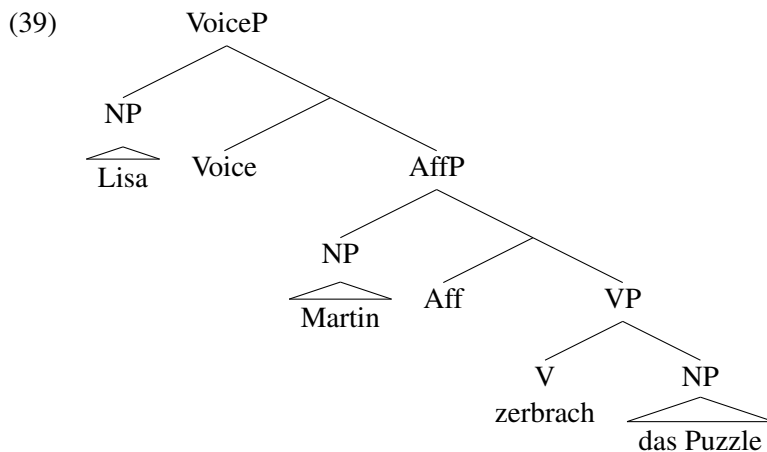
In these examples, the scope of *again* is not *sadden* or *enlarge*, since nothing had saddened Sally before or enlarged the opening before. Rather, the scope of *again* is just *sad* and *large*, sub-word parts of their respective words. According to Williams (2007, 355–356), this should not be possible, since *again* is an adverb that only takes phrases as its scope.

von Stechow (1995) and Beck and Johnson (2004), among others, argue that modification with *again* requires lexical decomposition in the syntax. That is, the syntax needs access to sub-word units. A German example from

Bosse, Bruening, and Yamada (2012) illustrates this point further. German, like many languages, permits an NP with an oblique case to be added to a clause, and this NP is interpreted as being psychologically affected by the event denoted by the VP. In German the case this NP receives is dative:

(38)　Lisa　　zerbrach Martin　　das　　Puzzle.
　　　Lisa.Nom broke　　Martin.Dat the.Acc puzzle
　　　'Lisa broke the puzzle on Martin.'

Bosse, Bruening, and Yamada (2012) propose that the dative NP is introduced in the specifier of a head Aff(ect). They also adopt Kratzer's (1996) hypothesis that the external argument of the verb is not actually an argument of the verb, but is an argument of a higher head Voice. AffP crucially occurs in between Kratzer's Voice head and the VP (word order abstracted away from here):

(39)

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                VoiceP
              /        \
         NP            Voice   AffP
          |                   /      \
        Lisa            NP          Aff    VP
                         |                /    \
                      Martin            V       NP
                                     zerbrach   |
                                            das Puzzle
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The Aff head introduces a semantics that says that the event of its VP sister matters psychologically to the NP in its specifier (for details see Bosse, Bruening, and Yamada 2012).

Bosse, Bruening, and Yamada (2012) support this syntactic analysis with facts regarding possible interpretations of *wieder*, 'again.' When *wieder* is added to the above sentence, only three of the four logically possible interpretations are permitted (Bosse, Bruening, and Yamada 2012, 1216, (78)):

(40)　Lisa zerbrach Martin　　das Puzzle wieder.
　　　Lisa broke　　Martin.Dat the puzzle again
　　　'Lisa broke the puzzle on Martin again.'

　　1.　The puzzle was broken before (cause irrelevant, perhaps it came that way, and this didn't necessarily matter to Martin), and now Lisa has broken it again and this matters to Martin.

　　2.　The puzzle broke or was broken on Martin before, and now Lisa broke it on him again (she did not do it the first time).

　　3.　Lisa had broken the puzzle on Martin before and now she did it again.

　　4.　*Lisa had broken the puzzle before and now she broke it again but for the first time on Martin.

According to Bosse, Bruening, and Yamada (2012), reading 1 corresponds to *wieder* adjoining to VP. It says that the eventuality denoted by its sister, here just the VP 'broke the puzzle', happened before. Reading 2 corresponds to *wieder* attaching to AffP. Again, the eventuality denoted by the sister of *wieder* happened before: the puzzle being broken and that affecting Martin. Reading 3 corresponds to *wieder* modifying the entire VoiceP. Reading 4 is not permitted because there is no constituent consisting of the verb and the internal and external arguments, while excluding the dative.

Consider now a lexical rule approach to affected datives in German. In a lexical theory, the verb *zerbrechen* would take two arguments, an internal argument and an external argument. A lexical rule can apply to a verb and

add a dative argument in addition, which will be interpreted as psychologically affected. There is no obvious way in this theory to account for the possible and impossible readings of *wieder*. In particular, I see no way to permit readings 1 and 2 while excluding reading 4. If *wieder* is allowed access to sub-parts of the argument structure of the derived verb, then reading 4 should also be allowed. More importantly, in a lexicalist theory, *wieder* should *not* be allowed access to sub-parts of the derived verb; this violates the Lexicalist Hypothesis.

2.2.3 Wh-Questions

Another example of phrasal adverbs modifying word-parts, not previously recognized to my knowledge, has a wh-word questioning a sub-word morpheme. The following are attested examples pulled from the internet:[2]

(41) a. How "pre" is prehypertension? (http://www.ncbi.nlm.nih.gov/pubmed/17519120)

    b. How 'post' does 'postcolonial' have to be before it ceases to be a—or the—primary determinant in the way Irish writing is read, and reads itself? (*Irish Poetry Since 1950: From Stillness Into History* by John Goodby, p319)

    c. Just How Sub Is Subprime? (http://online.barrons.com/articles/SB117409608947340293?tesla=y)

However these types of examples are analyzed, the fact is that the wh-phrase is semantically picking out a single morpheme in a multimorphemic word. This is again a violation of the Lexicalist Hypothesis.

2.2.4 Focus

It is also well-known that focus can target sub-word units (Selkirk 1984, 271, Wennerstrom 1993, Artstein 2004):

(42) a. That poet is from the POST-colonial era, not the PRE-colonial one.

    b. That type of action indicates an A-moral viewpoint, not an IM-moral one.

    c. That individual is TRANS-sexual, not BI-sexual.

    d. Sex-IST, not sex-Y!

Since focus can also target phrases, this is again an example of a process that makes no distinction between phrasal and sub-word units (Artstein 2004).

2.3 Summary

In this section we have seen that the main tenet of the Lexicalist Hypothesis is simply incorrect. There is no strict separation of the component of grammar that produces words and the component that produces phrases. Phrasal syntax can feed word formation processes, and there are numerous processes that can target both phrasal units and sub-word units.

One response to some of these facts has been to reassign processes from the phrasal component to the lexical component. However, *every* phrasal process seems to be able to feed compounding; this strategy then necessitates reassigning everything from the phrasal component to the lexical one. The conclusion is clear: the grammar is not strictly separated into word and phrase components, there is only a single component that puts together both words and phrases.

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[2]A wh-phrase can also replace a word-part in an echo question (Artstein 2004):

(i) This is a stalag-what? (A: stalagMITE; Artstein 2004, 7, (13a))

However, this type of questioning is insensitive to morpheme boundaries, and can replace any string (or prosodic unit), as in *He's a presti-what? (prestidigitator)* or *It's a capy-what? (capybara)*. This phenomenon is probably just asking to repeat some phonological string, and so is not relevant to the Lexicalist Hypothesis.

3 The Lexicalist Hypothesis is Superfluous

I now show that we do not need the Lexicalist Hypothesis to account for the facts that it is meant to account for. We saw in the last section that the Lexicalist Hypothesis is wrong in numerous ways, but there are other cases where it does seem to capture something. That is, there are cases where phrasal elements cannot target sub-word units, and there are cases where sub-word units seem to behave differently from their phrasal correspondents. I show here that these facts already follow from most theories of phrasal syntax, with no need to invoke the Lexicalist Hypothesis or the Principle of Lexical Integrity (Bresnan and Mchombo 1995). All we need is a distinction between elements that select heads and elements that select phrases, along with the commonly assumed principle that elements strictly modify their sister (the element they merge with). Since most syntactic theories already distinguish heads from phrases and already limit combination to sisterhood, they already account for these differences, with no need for the Lexicalist Hypothesis.

## 3.1 Phrasal Elements That Cannot Target Sub-Word Units

According to Williams (2007), we need the Lexicalist Hypothesis in order to account for the inability of wh-questioning to target part of a word, as in the following:

(43) (Williams 2007, 354, (1))

    a.   How complete are your results?

    b.   * How completeness do you admire? (*intended:* [how complete]-ness do you admire)

    c.   What degree of completeness do you admire?

    d.   How complete a record do you admire?

In (43b), *how* cannot modify just the *complete* part of the noun *completeness*. The examples in (43c–d) are meant to show that there is nothing semantically ill-formed about this question.

    The obvious question to ask is whether the syntax independently rules out (43b). It does, in fact. *How* as an adverb does not combine with nouns (**how man, *how liberty*). Of course, we need to rule out the bracketing in (43b), where it combines with what would be an adjective before the suffix *-ness* turns it into a noun. For this, and in fact for all of the cases brought up by Williams and discussed in this and subsequent subsections, we just need a difference between items that select heads and items that select phrases. The principle that elements combine strictly with their sister then derives the facts. Any syntactic theory that distinguishes heads from phrases therefore captures the facts that the Lexicalist Hypothesis is thought to be needed for.

    In this particular case, *how* as a phrase modifier selects phrases, and cannot select heads. It strictly combines with phrasal constituents headed by As and Vs. For the sake of exposition, I use adjunction to AP:

(44)

```
            AP
          /    \
       AdvP     AP
        |        |
       how       A
             complete
```
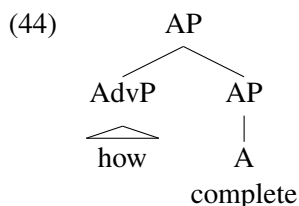
How cannot adjoin to a head, as would be required in (43b):

(45) *

```
              N
            /   \
           A     N
         /   \   -ness
      AdvP    A
       |    complete
      how
```

10
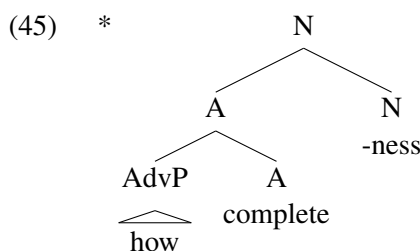
The facts that Williams argues follow only from the Lexicalist Hypothesis in fact follow from any syntactic theory that distinguishes heads from phrases. Appealing to the Lexicalist Hypothesis is unnecessary.

Similarly, Bresnan and Mchombo (1995) say that the Lexicalist Hypothesis and their Principle of Lexical Integrity are needed to account for the inability of adverbs to modify sub-word parts:

(46)   (Bresnan and Mchombo 1995, 192, (17))

    a.   [$_A$ happy]-ness

    b.   * [$_{AP}$ quite happy]-ness

    c.   * [$_{AP}$ more happy [than sad]]-ness

Put differently, phrases like APs cannot form the input to word-formation rules like *-ness* suffixation.[3]

This restriction follows in exactly the same way as wh-questions, above. Like *how*, *quite* and *more* select phrases, not heads. In contrast, *-ness* selects heads, not phrases. The bracketing in (46b–c) is impossible because *-ness* cannot combine with a phrase. Additionally, *quite* cannot adjoin to the NP headed by *happiness* and modify just the adjective *happy*, for two reasons: first, as an adverb, *quite* does not select NPs; and second, if *quite* could attach to *happiness*, that is what it would modify, by the principle that elements combine strictly with their sisters. It could not modify just a sub-part of its sister.

All of these restrictions are ones we independently need in phrasal syntax; nothing more needs to be said. There is simply no need for the Lexicalist Hypothesis or the Principle of Lexical Integrity.

3.2   Strict Locality of Affixes Versus Phrases

Williams (2007) also points to the strict locality that is observed with affixal *self-* as opposed to phrasal *self* as a motivation for the Lexicalist Hypothesis. Phrasal *self* may take a long-distance antecedent, so that in the following example *himself* does not need to relate the internal argument of *destruction* to the external argument of *destruction*; instead the destroyer can be unspecified:

(47)   John told stories about the destruction of himself. (Williams 2007, 354, (2))

In contrast, *self-destruction* strictly requires coreference between the destroyed and the destroyer. An example like (48b) cannot instead relate the destroyed with the teller of stories. This means that, in contrast with (47), (48a) is unambiguous, and must mean (48b), not (48c):

(48)   (Williams 2007, 354, (3))

    a.   John told self-destruction stories. (unambiguous)

    b.   John told stories about one's destruction of oneself.

    c.   John told stories about the destruction of himself.

According to Williams, such facts show that "the lexical system has no delayed resolution, but the phrasal system does" (Williams 2007, 355).

Again, we do not need the Lexicalist Hypothesis to account for such facts, all we need is the difference between heads and phrases. If affixal *self-* is a head that selects heads, not phrases, then it will strictly operate on its sister, the head it attaches to. This particular affix has the effect of making the head it attaches to reflexive, so that two arguments of that head are covalued. In *self-destruction*, *self-* will covalue the destroyer and destroyed arguments of *destruction*. There is no "delayed resolution" because elements combine strictly with their sisters.

The same is true, though, of phrasal elements: they also combine strictly with their sisters. The only difference is that their sisters are phrases. In (47), *of himself* combines strictly with *destruction* to fill the internal argument role of *destruction*. The NP *himself* needs an antecedent, but, as is well-known, inside NPs reflexives are free to

---

[3]Actually, this is not entirely true, either. There are examples like *stick-to-itiveness* and *unputdownable*, as well as phrases that use zero-derivation, like *a pick-me-up*, *the once-over*, *a do-over*, *a know-it-all*. While these might be dismissed as exceptional, they are still quite common and help to make the point that there is no strict separation between the phrasal system and the word system.

find an antecedent based on perspective or other principles (Pollard and Sag 1992, Reinhart and Reuland 1993). If *himself* were to occur as the object of the verb *destroy*, it would again require covaluation between it and another argument of the verb. (The syntax does have numerous instances of long-distance relations, like variable binding and extraction, but this is not one of them.)

Once again, the facts that are taken to motivate the Lexicalist Hypothesis simply fall out from any syntactic theory that distinguishes heads from phrases.

3.3 Differences in How Adjuncts are Treated

The principle that elements combine strictly with their sisters also explains the difference that Williams (2007) points to between affixal *re-* and phrasal *again*. Phrasal *again* may include adjuncts in its scope, but *re-* may not:

(49) (Williams 2007, 355, (4))

    a. John re-washed the dishes on Tuesday. (not ambiguous)

    b. John again washed the dishes on Tuesday. (ambiguous as to whether it includes *on Tuesday* in its scope)

According to Williams, a prefix "can have scope only over the arguments of the item it adjoins to in the word system" and not the adjuncts "because the arguments of a lexical item are represented on the item itself in some way, but adjuncts are not" (Williams 2007, 355).

Williams is only sort of right about this (see the discussion of raising and resultatives above), but again we do not need the Lexicalist Hypothesis. *Re-* as a head strictly selects heads, and like all syntactic elements operates strictly on its sister, namely the head it combines with. As Williams notes, adjuncts are not specified in the semantics of a head, so when *re-* combines with a head, it cannot include any adjuncts of the head it attaches to in its semantics. In contrast, *again* is phrasal, and may combine with a very large phrase, one that can include an adjunct.[4] Again, there is no need for the Lexicalist Hypothesis, the facts follow from any theory of syntax that includes a difference between heads and phrases and the principle that elements combine strictly with their sisters.

3.4 Different Principles?

Williams (2007) lists two other differences that he claims hold between the word system and the phrasal system. The most important one, the claim that the word system provides input objects to the phrasal system and not vice versa, has already been addressed and shown to be wrong. The other is the claim that the word system and the phrasal system obey different principles, so that, for instance, the word system is head-final in English, but the phrasal system is head-initial. In fact, the driving intuition behind the syntactic approach to word formation is that this is false: principles of word formation are ones familiar from phrasal syntax (Baker 1985, Hale and Keyser 1993, among numerous others). As for head directionality, it is rather superficial, and there are numerous counterexamples in both directions in English: words can be head-initial, like *pickpocket, cutthroat, know-it-all*; and phrases can be head-final, like *counterexamples notwithstanding* and *two years ago*. This difference, such as it is, is simply not significant.

What is significant is that we do in fact see the same principles operating. Crucial to the previous two subsections was the principle that elements combine strictly with their sisters. This principle holds of both phrases and morphemes. Similarly, the constraints on what can form an adjectival passive in English almost perfectly mirror the constraints on what can form a verbal passive; where there are differences, they follow from syntactic principles (Bruening 2014).

The recognition that the principles are the same is also implicit in the trend mentioned above to reassign all syntactic processes to the lexical component. For Bresnan (1982), verbal passives must also be lexical, just like adjectival passives; for Müller (2006), raising and resultatives must be lexical. If we are reassigning all processes to the same component, those processes must all obey the same principles.

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[4]We saw above (section 2.2.2) that *again* can also adjoin to very small phrases, and thereby modify sub-word units. It is one of only a few adverbs that is supremely flexible in this way (another is *too*, see Bruening 2010, 549).

3.5 Idiosyncrasy

One of Chomsky's (1970) original arguments for a lexical treatment of nominalizations, repeated in Newmeyer (2009), is that they are not completely productive or semantically regular. That is, they show a great deal of idiosyncrasy. The following list of sample semantic irregularities among derived forms (not just nominalizations) is from Newmeyer:

(50) (Newmeyer 2009, 94, (7))

    a.   profess ('declare openly')—professor ('university teacher')—profession ('career')

    b.   ignore ('pay no attention to')—ignorance ('lack of knowledge')—ignoramus ('very stupid person')

    c.   person ('human individual')—personal ('private')—personable ('friendly')—personality ('character')—personalize ('tailor to the individual')—impersonate ('pass oneself off as')

    d.   social ('pertaining to society'; 'interactive with others')—socialist ('follower of a particular political doctrine')—socialite ('member of high society')

There are also nominalizations that have no corresponding verb that they could be derived from, for instance *motion* (**mote*), *tuition* (**tuit*). The same is true of other derived forms (*social*, **soci*).

In order for this undeniable fact to be an argument for a split between a phrasal system and a word-formation system, we have to assume that there is a qualitative difference between lexical rules and phrasal rules in regularity. Indeed, Chomsky (1970) assumed just that: that rules of the phrasal component are completely productive and semantically transparent, while lexical rules show numerous irregularities and restrictions.

Since that time, however, this has been shown over and over to be false. Irregularity is not the exclusive province of the word formation system, it is pervasive in the combinatorial system generally. There are phrasal idioms, like *kick the bucket* and *the shit hit the fan*; there are particle-verb combinations that are interpreted idiosyncratically and are not completely productive (*throw up*, *chew out*; see Jackendoff 2002); there are obscure limitations on different types of A-bar movement (Sag 2010). Since the assumption is false, the argument does not go through: there is again no difference between the word system and the phrase system, and no reason to treat them differently. In fact, if we want a uniform account of idiosyncrasy, then we have to treat them the same, otherwise we will have to have two different ways of deriving idiosyncrasy, one for the word system and the other for the phrasal system.

Newmeyer (2009, 105) does ask a pertinent question: In purely syntactic theories of word formation, where is it recorded which affixes particular roots can combine with? That is, where is it stated that the root *destroy* (or *destruct* or whatever its base form is) combines with *-ion*, while *grow* combines with *-th* and *criticize* forms *criticism* and not **criticization*?

This is an important question, but it is a question to be answered, not an argument. Any theory has to answer this question, whether it assumes the Lexicalist Hypothesis or not. The Lexicalist Hypothesis does not make giving an answer any easier, since in a Lexicalist theory, root and affix combinations are also done via rule, just as in a purely syntactic theory. The rules just have a different name. Particular roots still have to be specified as undergoing some rules and not others. The same has to be done in a syntactic theory. The two types of approaches are in the same boat; the question for all of them is what lexical entries look like, and what information is stored where.

If we give up lexical rules and only have a single syntactic rule component, as I am arguing for here, then all word formation has to be done by the same syntax that builds phrases. We need a way to capture idiosyncrasies and lack of full productivity. There are two obvious ways:

1. All specifications are stored in the lexical entries of roots. Suppose we have a root SOCI. In the entry for this root, it can be recorded that SOCI + *-al* = 'pertaining to society', while SOC + *-al* + *-ist* = 'follower of the doctrine of socialism', and so on.

2. Lexical entries include syntactic structure. There is a lexical entry for *socialist* that includes its structure and its meaning. There is another lexical entry for *social* that includes its structure and meaning (and its structure is probably a subset of the structure of *socialist*).

On both views, combinations are memorized as they are encountered. At the same time, language users will generalize to some extent and extract commonalities (different individuals may do this to different extents). This is not really different from most Lexicalist views; all that is different is the claim that the system that puts words together is the same as the system that puts phrases together.

There are also other possibilities besides the two listed, and I will not commit to any one here. It is an empirical question what the best account is. It seems to me, however, that a uniform account of idiosyncrasy at the word level and at the phrasal level would be desirable, and this is more likely to be successful in a theory that does not distinguish the two. (See Bruening 2010 on an approach to phrasal idioms where *selection* is crucial; selection operates uniformly throughout the system.)

3.6   Internal Structure

Another of Chomsky's (1970) arguments for a split between a word system and a phrase system is the claim that derived words have the phrasal structure of their derived category, and do not have the phrasal structure of the category they are derived from. For instance, a deverbal nominalization has exactly the same phrasal syntax as an underived noun, and does not have the phrasal structure of a verb or a sentence. Newmeyer (2009) illustrates this with the following examples:

(51)   (Newmeyer 2009, 95, (9))

    a.   the stupid refusal of the offer

    b.   * the refusal stupidly of the offer

    c.   * the not refusal of the offer

    d.   * the have refusal of the offer

(52)   a.   * She stupid refused the offer.

    b.   She refused the offer stupidly.

    c.   She did not refuse the offer.

    d.   She has refused the offer.

A derived N takes adjectives, not adverbs, and may not have sentential negation or auxiliary verbs that are possible with the verb it is derived from. According to Chomsky and Newmeyer, these facts only follow if derived Ns enter the syntax as unanalyzable Ns.

The claim that Ns derived from Vs do not have phrasal properties of Vs has been argued to be false. For instance, Fu, Roeper, and Borer (2001) argue that Ns derived from Vs may have adverbs, while underived ones may not:

(53)   (Fu, Roeper, and Borer 2001, 549, (2))

    a.   The occurrence of the accident suddenly disqualified her.

    b.   * Kim's accident suddenly on the track disqualified her.

This has been contested by Newmeyer (2009), but all of his examples of putatively underived nouns (p.109, examples 47a–c) are either zero-related to verbs (*use*, *release*) or can plausibly be analyzed as derived from a verbal source that is not actually used (*recourse*, which is used in the "light verb" construction *take recourse*). The matter requires more research to be settled. (Newmeyer's skepticism of the *do so* data also offered by Fu, Roeper, and Borer 2001 does appear to be warranted.)

Other facts have been suggested to distinguish derived from underived Ns. For example, Bruening (2013) argues that certain PP adjuncts require verbal structure, and so they are only permitted with Ns that include verbal structure. Instrumentals are one such. They are allowed with VPs and with derived nouns, but not with (at least some) underived nouns (Bruening 2013, 12, (48–52)):

(54)   a.   The inspector saw the blood with a microscope.

     b.   The sample was smelled with an electronic nose.

     c.   The danger was sensed by Peter with his spider-sense.

(55)   a.   the perception of light with a photosensor

     b.   the detection of the sound with an amplifier

     c.   the discernment of God's will with various omens

(56)   a.   * the sight of the blood with a microscope

     b.   * the smell of the sample with an electronic nose

   c.   * Peter's sense of danger with his spider-sense

Additionally, it is generally true that verbs that select a particular preposition continue to select that same preposition when they are turned into derived nouns:

(57)   a.   depend on, dependence on; rely on, reliance on

     b.   apply for, application for; prepare for, preparation for

     c.   believe in, belief in; specialize in, specialization in; succeed in, success in

     d.   commit to, commitment to; refer to, reference to; respond to, response to

     e.   approve of, approval of; acquit of, acquittal of

     f.   agree with, agreement with; collide with, collision with

While this is not inconsistent with the Lexicalist Hypothesis, it is not expected by it either. On the Lexicalist position, we ought to expect more idiosyncratic variation from verb to derived noun.

Now, it is true that, by and large, derived nouns have the phrasal syntax of nouns. However, this follows on any theory that treats them as nouns, even a theory that derives them from verbs in the phrasal syntax. The verbs have been turned into nouns, in every theory, and as such, they are expected to behave as nouns. There is no need to appeal to the Lexicalist Hypothesis to explain this.

It does appear that many of the criticisms that have been voiced concerning syntactic analyses of nominalizations arise from those analyses treating the nominalizing morphemes as attaching to phrases, something like the following:[5]

(58)
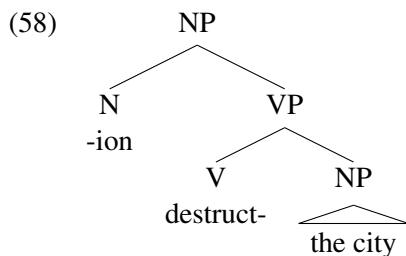
In this type of analysis, the nominalizing head selects a phrase as its complement, but combines with the head of that phrase morphologically, usually by head movement (see, e.g., Marantz 1997, Alexiadou 2001, Borer 2003, Roeper 2005).

Note, however, that it is also possible to analyze nominalization as a nominalizing head attaching directly to the verbal stem, *before* it projects any phrasal structure:

(59)

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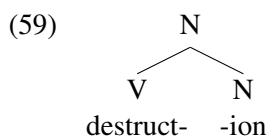
[5]These criticisms include Williams (2007), Wechsler (2008), Newmeyer (2009), Müller (2013), Müller and Wechsler (2014). See more on this in the conclusion.

Both options are available in a purely syntactic approach to word formation. Which is correct is an empirical question. If the bulk of the evidence suggests that nominalizations do indeed include verb phrase structure, then perhaps the phrasal approach is correct. If the evidence indicates that they do not, then the pure head approach might be called for.

There are also other possibilities. In any case, a theory that does without the Lexicalist Hypothesis is perfectly capable of capturing the facts. This means, again, that the Lexicalist Hypothesis is superfluous.[6]

3.7 Frozen Structure

The last argument offered by Chomsky (1970) and repeated by Newmeyer (2009) is the claim that we do not see transformational syntax inside of derived words. This was already discussed above and shown to be false (section 2.1). As was shown above, two of the phrasal phenomena discussed by Chomsky, raising to subject and raising to object, *do* occur inside derived nominals. Others do, as well, like "particle shift"; the very examples that Chomsky cited as ungrammatical are accepted by numerous speakers as at least marginally acceptable (Larsen 2014):

(60) a. ? his looking of the information up (cited as ungrammatical in Chomsky 1970, 193, (14a))

      b. ? his defining of the problem away (cited as ungrammatical in Chomsky 1970, 193, (14b))

Similarly, Bruening (2014) showed that some instances of "dative shift" occur inside adjectival passives, contra Wasow (1977) and much other work:

(61) (Bruening 2014, 401, (102a), (103a))

      a. The Victoria was unspared the horrors of World War II. . .

      b. . . . he struggled with his identity, cast as a sex symbol for 1950s America but unafforded a private life outside the limelight.

Bruening (2014) shows that this is allowed just with certain double object verbs like *deny*, *spare*, *afford*. It is not allowed with alternating verbs like *give*, *send*, etc. Bruening (2014) explains this difference in terms of phrasal syntax, and suggests that the phrasal syntax is the right place to look for constraints on what may appear in phrases headed by derived words (pp411–412).

This means, again, that the Lexicalist Hypothesis is not only wrong, but it is also unhelpful in explaining what restrictions do exist. The phrasal syntax can explain these restrictions better than the Lexicalist Hypothesis can, since the Lexicalist Hypothesis has nothing specific to say about different classes of double object verbs. It also has nothing to say about the difference between adjectival passives, which allow double object verbs of the *deny* and *spare* class, and agentive *-er* nominalizations, which do not (Bruening 2014, 412). Not only is the Lexicalist Hypothesis superfluous, it is useless in helping us to understand why some syntactic phenomena can appear in some derived words but others cannot.

3.8 "Lexical Integrity": Extraction

I turn now to the arguments that Bresnan and Mchombo (1995) give for their Principle of Lexical Integrity. This principle says that word parts are inaccessible to the syntax, as would follow from the Lexicalist Hypothesis. We saw in section 2 that this is incorrect in many instances, but in others it does seem to be true.

The first argument involves extraction. According to Bresnan and Mchombo (1995), word parts are inaccessible to extraction:

(62) * It's American history that they've been [— teachers] for years. (modified from Bresnan and Mchombo 1995, 187, (3b))

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[6]One argument presented against syntactic accounts of nominalizations is that they can be coordinated with underived nouns and share arguments (Wechsler 2008, Müller and Wechsler 2014). In section 3.9 I suggest that all apparent coordination of heads is actually coordination of phrases. If this is correct, the possibility of coordination of derived and underived nouns is not problematic for any theory.

As we did above regarding adverbs, we should ask whether the phrasal syntax independently rules out such attempts at extraction. It does, in numerous ways. The most important is that this sort of extraction (A-bar extraction) may only target phrases, and not heads:

(63) a. It's [a dedicated teacher] that she's been — for years.

 b. * It's teacher that she's been [a dedicated —] for years.

(64) a. As [justifiably proud of your daughter] as you've been — over the years,. . .

 b. * As proud as you've been [justifiably — of your daughter] over the years,. . .

Neither of these illicit instances of extraction is ruled out by the Principle of Lexical Integrity. Obviously, we need some constraints in the phrasal syntax. The most important one is that A-bar extraction only targets phrases, and not heads. Once we have this constraint, however, the inability of A-bar extraction to target sub-word units follows: they are not phrases.[7] There is no need to have a Principle of Lexical Integrity in addition. It is entirely superfluous.

The same constraint operates on A-extraction, too. Raising to subject and passivization may not target a head, even in a case like the pseudopassive where a subpart of the argument of the verb—the complement of the P complement of the V—can be extracted:

(65) a. The wealthiest candidate is likely — to win.

 b. * Candidate is likely [the wealthiest —] to win.

(66) a. Only the softest bed will be slept [in —].

 b. * Bed will be slept [in [only the softest —]].

Both A- and A-bar extraction are constrained to operate on phrases, not heads; and it therefore follows that they cannot target sub-parts of words, because those are not phrases.

Some Lexicalist theories treat raising and passive as lexical rules (e.g., Bresnan 1982, Müller 2006). As such, they should in principle be able to target sub-parts of words, yet they cannot:

(67) a. * American history is likely [a(n) — teacher] to win Teacher of the Year.

 b. * American history was hired [a(n) — teacher].

Some other principle must block this. Whatever that principle is makes the Principle of Lexical Integrity superfluous even within a Lexicalist theory. The Principle of Lexical Integrity does no work whatsoever, even in a theory that assumes its correctness.

Extraction, then, does not require the Lexicalist Hypothesis or the Principle of Lexical Integrity. The fact that extraction cannot target sub-parts of words follows from independent principles. The Lexicalist Hypothesis is superfluous.

3.9 "Lexical Integrity": Conjunction and Ellipsis

According to Bresnan and Mchombo (1995), conjunction and ellipsis are phrasal processes and so cannot target parts of words. We saw above that this is false. Word parts can be conjoined and elided. Above we saw that all instances of conjunction of word parts might actually be ellipsis, however, so it may well be that conjunction cannot target word parts. If this is correct, do we need a Principle of Lexical Integrity to explain it?

The answer is no. Again, all we need is the recognition that some syntactic processes may only target phrases and not heads. Conjunction may be such a process. Of course, conjunction does seem to be able to operate on heads, as in the following examples:

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[7]We saw above that the first member of a compound *can* be a syntactic phrase. Such phrases still cannot be extracted by A-bar movement processes, however. This is because, as also shown above, these phrases when combined with the second member of the compound form a noun as far as the phrasal syntax they are embedded within is concerned. Extraction processes operating on larger phrases will treat the entire compound as a single noun, that is, as a head.

(68) a. They can and will arrest you.

b. They shot and killed the suspect.

There are some indications that coordination of heads is illusory, however, and is probably always phrasal coordination. For instance, coordination of modals can include phrasal elements like adverbs:

(69) They can and probably will arrest you.

Similarly, coordination of verbal heads (here nominalized) acts like coordination of word parts in permitting plural agreement and antecedence of reciprocals (see above and Chaves 2008):

(70) a. Their shooting and killing (of) the suspect were unrelated to each other. (the suspect was wounded by the shooting last year, and then they killed him with a knife this year)

b. Her offering and making me an espresso usually take place on different days.

It is plausible, then, that all instances of apparent head coordination are actually all phrasal coordination with ellipsis.

If apparent coordination of heads is always coordination of phrases, then coordination is just one of many processes (like extraction above) that only targets phrases, and not heads. This is a restriction in the phrasal syntax, but it has the result that the coordination of word parts is banned, with no reference to the Lexicalist Hypothesis or the Principle of Lexical Integrity. Once again, all the work of the Lexicalist Hypothesis is already done by the phrasal syntax.

3.10 "Lexical Integrity": Inbound Anaphoric Islands

Bresnan and Mchombo (1995) also cite "inbound anaphoric islands" as evidence for their Principle of Lexical Integrity. Following Postal (1969, 213-214), they note that words may be formed from referential nouns, but not from pronouns:[8]

(71) McCarthyite, *himite

Other types of pro-forms also cannot appear inside words:

(72) a. * People who *smoke* like other *do-so*-ers. (Postal 1969, 217, (69a))

b. * We need a *truck* but not a *one*-driver. (cf. We need a truck but not a driver of one.)

It is not exactly clear how this would follow from the Principle of Lexical Integrity. According to Simpson (1983), coreference is part of the sentence grammar (the phrasal system), so a pronoun could not receive its reference within a word, since the sentence grammar has no access to sub-words parts. As Ward, Sproat, and McKoon (1991) note, this would then have nothing to say about cross-sentential anaphora, which is also ruled out. Bresnan and Mchombo (1995) themselves explain the facts in a way that makes no reference to Lexical Integrity: "indexical pronouns, though they do have intrinsic lexical content and can appear word-internally, lack the appropriate lexical content to serve as morphological bases for semantic derivatives" (p192). In other words, pronouns have very little semantic content, and that is what stops them from forming words like *himite* and *do-so-er*. In attested words with pronouns like *he-man* and *she-male*, the pronouns are used just for their gender features, which is the only real semantic content that they do have. If this is correct, then inbound anaphoric islands have nothing to do with the Principle of Lexical Integrity and everything to do with the paucity of content in pro-forms.

A different explanation is offered by Sproat (1988). According to Sproat, pro-forms are always maximal projections. Pronouns are actually NPs, *do so* is a full VP, and so on. Word formation processes never operate on maximal projections. As discussed above, suffixes like *-ite* and agentive *-er* strictly select heads, and may not combine with phrases. This rules out formations like *himite* and *do-so-er*. It does not rule out pro-forms in

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[8]Postal (1969) also discusses "outbound anaphoric islands," but these are not considered by Bresnan and Mchombo (1995) to be evidence for Lexical Integrity, since they were shown by Ward, Sproat, and McKoon (1991) to be regulated by pragmatics.

compounds, since, as we saw above, the first member of a compound can actually be phrasal. As we would then expect, phrasal compounds actually can include pro-forms, including fully referential ones:

(73) a. The dog gave me an accusing you-like-**her**-better-than-me look.

   b. She gave me her easily recognizable I-love-flowers-but-you-always-buy-me-ugly-**ones** look.

   c. She gave him her patented I-love-to-dance-but-I-won't-**do-so**-alone look and he dutifully stood and accompanied her to the dance floor.

These examples are not expected by Bresnan and Mchombo (1995), who claim that phrases in compounds are "lexicalized" (see above). If they are lexicalized then they would be expected to behave like words, and be inbound anaphoric islands.

Additionally, Bresnan and Mchombo (1995) themselves cite numerous counterexamples to the inbound anaphoric island constraint, where in some languages a derived word form can include pronominal agreement affixes. Harris (2006) similarly shows that Georgian word-formation processes can include fully referential pronouns. This means that inbound anaphoric islands are not observed in some languages (or in compounds in English), a state of affairs that should be impossible if they really follow from the putatively universal Principle of Lexical Integrity.

Inbound anaphoric islands, then, follow the pattern we have seen throughout this paper: there are numerous counterexamples to what the Lexicalist Hypothesis requires, and where there are restrictions, they follow from other considerations.

3.11   Summary

This section has gone through numerous cases from the literature where some phenomenon has been claimed to require the Lexicalist Hypothesis and/or the Principle of Lexical Integrity. In every case, the Lexicalist Hypothesis is superfluous: all of the data are already accounted for by any adequate theory of phrasal syntax. All we have to recognize is that some elements are limited to operating on phrases while others are limited to operating on heads. Additionally, we need a strict principle of locality, such that elements combine semantically only with the node that they combine with syntactically. All of this is routine in theories of phrasal syntax, even theories that also have a separate component of lexical rules.

4   Conclusion

The Lexicalist Hypothesis was a reasonable hypothesis about the organization of the human language faculty. It could have been correct that the human grammar has distinct word formation and phrasal syntax components. However, all of the evidence reviewed here indicates that it does not. The first part of this paper showed that there are numerous phenomena where phrasal syntax provides the input to word formation, and numerous phenomena where phrasal operations have access to sub-word units. The second part of the paper showed that where there are facts to be explained, they follow from any adequate theory of phrasal syntax, without the need to refer to the Lexicalist Hypothesis. The Lexicalist Hypothesis is entirely redundant and superfluous. More generally, all we need is a single combinatorial component for both words and phrases.

If some hypothesis is both incorrect and does no work, the obvious action to take is to discard it. In this case, doing so leads to the kind of theory that considerations of parsimony would also prefer: a theory where there is only one combinatorial system putting together both words and phrases, not two distinct systems. As noted in the introduction, a theory with only one component is simpler than and therefore preferable to a theory with two components, all other things being equal. This paper has shown that all other things *are* equal: the Lexicalist Hypothesis does no work, and so has no empirical advantage to outweigh the parsimony consideration. In fact, it seems to be at a disadvantage, since it gets numerous empirical facts wrong.

I conclude that theories with the Lexicalist Hypothesis as an inextricable part are inadequate theories and should be abandoned immediately (for instance, LFG and HPSG). The kind of theory we need is one with only a single combinatorial system for both words and phrases. In fact, this type of approach has been shown to have numerous advantages. For examples, see Bruening (2014) on novel and correct predictions regarding adjectival

passives; Bruening (2013) on verbal passives; Bruening (2010) on double object constructions (or "applicatives") and correct predictions regarding possible and impossible idioms, possible and impossible readings with adverbs like *again* and *too*, and facts about the *deny* class of double object verbs; and Bosse, Bruening, and Yamada (2012) on various valence-changing operations that add arguments not selected by the main verb.

One last point that should be made concerns the numerous criticisms that have been offered of particular analyses within the general syntactic approach to word formation. For example, Williams (2007), Wechsler (2008), Newmeyer (2009), Müller (2013), and Müller and Wechsler (2014) heavily criticize the syntactic accounts of nominalizations in Marantz (1997), Alexiadou (2001), Borer (2003), Roeper (2005), and others. Many of these criticisms are quite valid. However, none of them invalidate the syntactic approach in general. Showing that a specific analysis encounters problems does not invalidate the general approach that that specific analysis is couched within. To draw an analogy with the theory that Müller (2013) thinks the entire field has converged on, namely HPSG, no one would think that a later HPSG analysis that argued against an earlier HPSG analysis of the same facts invalidated HPSG in general.

Put differently, it is almost certainly true that we do not yet have fully adequate analyses of every particular phenomenon, or even any of them. Showing that a particular analysis is inadequate means that we are making progress, by having ruled out some analysis that will not work. I believe that the discussion of this paper has contributed a giant step forward in this vein: we now know that entire classes of theories can be ruled out, because they assume an incorrect and superfluous hypothesis (the Lexicalist Hypothesis). We can now concentrate our efforts on developing better analyses within the most parsimonious class of theories, namely, the ones that assume only a single combinatorial system for both words and phrases.

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