

REPLIES

Brief response to Müller

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1. INTRODUCTION. Stefan Müller (2018) criticizes my article, ‘The lexicalist hypothesis: Both wrong and superfluous’ (Bruening 2018), on several grounds. I go through each of his criticisms here and show that none weaken the arguments I made. The point of the original paper is undiminished, and the LEXICALIST HYPOTHESIS should be rejected as empirically false and explanatorily inadequate.

2. PSYCHOLINGUISTICS AND PROCESSING. Müller (§2) criticizes a phrasal analysis of a nominalization like *God’s declaration of them to be wrong* on the grounds of directionality. Because many phrase structure analyses build syntactic structures from the bottom up, he says, we would be required to have the VP *declare them to be wrong* BEFORE we get the nominalization *declaration of them to be wrong*. Since humans process language incrementally from left to right, according to Müller this account is therefore unworkable.¹

However, the only justification that Müller gives for his claim is a reference to Fodor et al. 1974. This work is often cited for the conclusion that the derivational theory of complexity is incorrect and thus there is no evidence for a transformational approach to syntax. This is a mischaracterization of the psycholinguistics literature of the 1960s and 1970s. The literature of the time actually concluded very little, as did Fodor and colleagues (1974) themselves. For an in-depth discussion of that literature and what it did and did not show, see Phillips 1996:Ch. 5. Note also that there are many different views regarding possible connections between the grammar and the parser; in many of them, there is no contradiction at all between a model of syntax that builds structure bottom-to-top and a parser that parses structures left-to-right. See Phillips & Lewis 2013 for a detailed discussion of the different views and the issues (and evidence) involved.

Rather than discuss these issues, I would like to discuss a comparison case. Compare the nominalization at issue, *God’s declaration of them to be wrong*, with the corresponding gerund, *his declaring them to be wrong*. The syntactic literature has universally concluded that gerunds include a full VP structure, because they can have VP elements like negation, auxiliaries, accusative case, and adverbs, as in *his not having declared them so vehemently to be wrong (was viewed as a tacit endorsement)*. In a left-to-right processing model, the parser, upon encountering *declaring* in *his declaring them to be wrong*, will have to anticipate and begin building a full VP, even though *declaring* is category N.² This is simply going to be necessary, in any model, if parsing takes place left-to-right (as it clearly does). Now, if the noun *declaring* in *his declaring them to be wrong* can cause the parser to build a full VP structure, why can’t the noun *declaration* in *his declaration of them to be wrong*? If the syntactic facts justify VP structure in a nominalization like *declaration*, as I and others have argued (Bruening 2017b and ref-

¹ I should point out that in other work, I have argued that syntax actually builds structure left-to-right, not bottom-up. See, for example, Bruening 2010, 2014.

² Presumably, even Müller would agree that at a morphological level both *declaring* and *declaration* will also be broken down into a verb stem *declare* and a nominalizing affix; it is not clear to me why we should think that this would psycholinguistically be different from breaking it down syntactically.

erences there), then this is what the parser must do. Given that the parser must be able to do it for a gerund, there is no reason to think that it cannot do it for a nominalization. Whatever view one adopts on the relation between the grammar and the parser, the model one proposes is going to have to allow something of category N to trigger the construction of VP structure. While some models might be ruled out if they cannot do this, there are many more that are compatible with left-to-right processing, even if they have a bottom-up syntax (again, see Phillips & Lewis 2013).³

3. PHRASES INSIDE DERIVATION. In §2.1 of my article, I argued that the lexicalist hypothesis is incorrect in its assertion that phrases cannot form the input to derivational morphology. I gave several examples of such cases, including phrases occurring inside compounds. Müller (§3) asserts that these are not a problem for the lexicalist hypothesis, because they are quotations. He repeats the quotation analysis from Wiese (1996), which I addressed at length in my article. According to Müller, this does not violate the assumptions of the lexicalist hypothesis, because quotation can operate on anything, including nonlinguistic sounds and symbols and even ungrammatical utterances—so it is not operating on phrases. Phrases are treated as unanalyzed wholes, just like grunts and whistles.

The point I made in my article is that the lexicalist hypothesis plus the quotation analysis rules nothing out and thus is explanatorily inadequate. The lexicalist hypothesis says that phrases cannot form the input to derivation, but then the quotation analysis posits a mechanism—quotation—that provides phrases as the input to derivation. This is contradictory. It also allows anything at all to form the input to derivation, including phrases. So the lexicalist hypothesis's assertion that phrases cannot form the input to derivation has been circumvented and rendered contentless. No predictions are made about what should and should not be possible.

Regarding nonlinguistic sounds and symbols, these can also be used as phrases in phrasal syntax, for instance, as the complement of verbs of speech. They can even undergo syntactic processes like quotative inversion, as in '<sequence of signs>', signed the interpreter. Humans—for instance, linguists—can also produce ungrammatical strings, even though their grammar (by assumption) does not produce them. These ungrammatical strings can then be used as phrases in the syntax, as in '*the lists mast' is what she said. This means that the grammar includes operations for turning things—both linguistic things and nonlinguistic things—into linguistic categories that it can use, namely X⁰s and XPs. This is exactly like operations that turn one linguistic category into another linguistic category (e.g. verbs into nouns): something is turned into a linguistic category that can be used by the grammar in all of the ways that category can be used. The quotation analysis recognizes this operation and provides a formal model of it. The fact that it is identical for both subword structure building and phrasal structure building reinforces the claim of my original article: word grammar and phrase grammar are the same. Moreover, the operation that is necessary for word grammar violates the assumptions of the lexicalist hypothesis. It is irrelevant that the operation can target things besides phrases, because phrases, when they are used, are treated as phrases: they have a syntax and a semantics and cannot but be interpreted by the grammar. This is unlike nonlinguistic sounds and gestures like <sequence of signs> in the example above, which are not de-

³ For some reason Müller also addresses the theory of tense and agreement in Pollock 1989, and claims that psycholinguistics rules out that analysis, too. I have also argued against this particular analysis (see Bruening 2010, 2017a), but here Müller provides no justification for his claim that psycholinguistic facts are incompatible with Pollock's analysis.

composed and are not interpreted. Phrases that form the input to derivation are treated as phrases and interpreted as such. It does not matter that the operation that inputs them to derivation can operate on nonphrases, too. Phrases as phrases form the input to word formation, meaning that the lexicalist hypothesis is empirically false.

4. OBLIGATORY ARGUMENTS OF NOUNS. In §2.2 I gave an argument (based on Williams 2015) against lexical treatments of resultatives and raising. This argument relied on arguments of nouns always being optional. See especially Reuland 2011 and Adger 2013 for a defense of this optionality. Müller (§5.1) claims that there are cases of arguments of nominalizations being obligatory, citing German examples like *Bart-träger* ‘bearded man’ (lit. ‘beard-bearer’) and *Spassmacher* ‘jester’ (lit. ‘fun-maker’) (pp. e59–e60). All of Müller’s examples involve a particular verb stem with a particular object which, just when combined, have a conventionalized meaning. It is not that *träger* ‘bearer’ requires an object; rather, the meaning of ‘bearded man’ resides only in the particular combination *Bart-träger*. This is exactly like phrasal idioms like *eat crow* (‘be humiliated by having to admit being wrong’). But no one would say that *eat*’s inability to mean on its own what *eat crow* does as an idiom shows that the object of *eat* is obligatory. All it shows is that the conventionalized meaning resides in the combination of two particular lexical items. There are several different ways of capturing this in a model of grammar. For instance, one might store the phrase *eat crow* in the lexicon as a phrase, and when it is plugged into the phrasal syntax it can undergo all syntactic operations and even be separated. But the conventionalized, idiomatic meaning would be available only if the whole phrase is inserted from memory. Alternatively, the syntax simply puts *eat* and *crow* together as it normally would (allowed since *eat* is optionally transitive), and somewhere there is an indication that, just when *eat* occurs with *crow* as its object, this can trigger a nonliteral meaning.

Regardless, this is not what is going on in the case of resultatives and raising. The facts do not depend on the particular lexical items chosen, and they are not about the retrieval or triggering of conventionalized meaning. Rather, the facts are the same across the board, and the meanings involved are fully compositional. The syntactic analysis that I proposed EXPLAINS why the facts are the way they are and could not be otherwise: raising and resultatives are not possible without full syntactic structure. Of course, Müller can stipulate in his lexical analysis that with resultatives and raising the arguments are obligatory, but this is just a stipulation, not an explanation. The syntactic analysis is clearly more explanatory.

5. ‘BRACKETING PARADOXES’. I also concluded in §2.2 of my article that German *Leer-fischung* ‘empty-fishing’ has to be a nominalization of the phrase *leer fisch-* (a resultative adjective plus verb). Müller criticizes this on the basis of so-called ‘bracketing paradoxes’ (§5.2) that arise with such forms and other forms like particle verbs. The issue is that various affixes attach to just one part of this phrase, not to the whole thing. For instance, *Leer-ge-fisch-e* ‘repeatedly fishing empty’ has a discontinuous affix around the verb stem, and not around the whole phrase. To give an English example, with a particle verb like *look up*, all affixes attach just to *look*, and not to the whole phrase (*looked up*, *looking up*, etc.).

Note that I also claimed that *declaration of them to be wrong* is a nominalization of the phrase *declare them to be wrong* (see above), yet Müller does not seem to be worried about the nominalizing affix not coming all the way at the end (**declare them to be wrong-ation*). I assume that this is because I actually spelled out an analysis where just the verb moves and combines with the affix *-ation*. I did not spell out a complete analy-

sis of *Leer-fischung*, but it would be trivial to say the same thing: the verb head of the phrase moves and combines with any affixes (e.g. *-ung* or *ge-* *-e*). There is no issue here, and no paradox.

In fact, the phenomenon of elements attaching to things that are smaller than what they actually operate on is widespread. It is common, for instance, for question particles to be suffixes on the verb in head-final languages (e.g. Japanese, Korean). But the scope of the question particle is the entire clause, not just the verb. Negation often appears in a location that is unexpected given its scope (often on the verb again). Moreover, many syntactic processes, if not most, ‘reach into’ what they combine with and target just a subpart of it. For instance, a common analysis of WH-movement is that some complementizer-like element in C turns its sister into a question, but also reaches into that sister and extracts just a WH-phrase out of it. Similarly for raising: even in a lexical analysis, raising operates on something larger (a stem) and does something to just a subpart of that thing (one of its arguments). It would be very surprising if affixes could NOT target just a subpart of what they combine with, given that this is how syntax seems to work in general (and note that this is another way in which morphology and syntax are the same, and hence should be treated the same).

Consider also phrasal idioms like *spill the beans* (‘divulge a secret’), which most people conclude are stored as phrases (in fact, many things that must be stored with conventionalized meanings are not words but phrases; see Di Sciullo & Williams 1987, Jackendoff 1997, Sag et al. 2002). These show that even stored elements are not atomic: the subparts of *spill the beans* can undergo syntactic and morphological processes differentially, as in the passive *the beans were spilled*, with dislocation of the object and verbal morphology on just the verb. In the syntactic analysis of resultatives, *leer fisch* is not even stored as a phrase, but is constructed by the grammar;⁴ if subparts of even stored phrases can be targeted by various processes, why would anyone think that a phrase that is built on-line could not have its subparts targeted differentially?

6. PARTIAL FRONTING. I argued in my article that much of the work of the lexicalist hypothesis is already done by independent constraints, for instance, a constraint limiting most cases of extraction to phrases (in my §5.1). Subparts of words cannot be extracted because they are not phrases, not because they are inaccessible to the syntax. Müller (§6) asserts that this cannot be right, because when a single word fronts to first position in German, it must be an X^0 and not a phrase. The sort of example Müller has in mind is the following, where first position is occupied by the verb *gelungen*.

- (1) *Gelungen ist hier selten wem was auf Anhieb.*
 succeeded is here rarely someone something at first.attempt
 ‘It was rarely the case here that someone succeeded with something on the
 first attempt.’ (De Kuthy & Meurers 2001:156, ex. 31c)

According to De Kuthy and Meurers (2001), this could not be fronting of a remnant VP out of which things have moved, because indefinites like *wem* and *was* are not supposed to be able to move in German. If *gelungen* is not a remnant VP, then it must be an X^0 , according to Müller.

Two points are in order here. First, regardless of the exact syntactic account, we are not forced into an X^0 -movement analysis, because *gelungen* could be a single-word phrase. It clearly can be a phrase, because other material can appear in first position

⁴ Note that in the view I advocate, everything that is stored is also constructed by the grammar, unless it is atomic (the smallest morphemes).

along with the verb, even in examples like 1 with indefinite pronouns. Three German speakers I consulted say that the following variation on 1 is perfect.

- (2) [So gut gelungen] ist hier selten wem was auf Anhieb.
 [so well succeeded] is here rarely someone something at first.attempt
 ‘It was rarely the case here that someone succeeded with something so well on the first attempt.’

If I am correct that dislocation processes like fronting to first position in German can target only phrases and not heads, then *gelungen* in 1 must be a phrase that just happens to include only a single word. This is supported by 2, which shows that what is in first position in such examples clearly can be a phrase. There is therefore no reason to think that the verb has moved as an X^0 in 1 rather than as a phrase.

The second point is that it is incorrect to claim that indefinites like *wem* and *was* cannot move in German. In 1, they must have shifted to the left across the PP *auf Anhieb*, given the assumption of many phrase structure theories that arguments of the verb must form a constituent with the verb to the exclusion of any adjuncts. This means that a remnant-movement analysis of 1 and 2 is perfectly reasonable: the indefinite arguments have moved out of a constituent which then undergoes movement as a phrase. In fact, one proponent of a remnant-movement analysis, G. Müller (1998, 2014), has proposed exactly such an analysis and has addressed the issue of indefinite pronouns (1998:204–10, 2014:100–108). According to him, indefinite pronouns can move; some researchers incorrectly concluded that they could not, because they are not allowed to cross certain other elements in doing so. Since indefinite pronouns can move, they do not argue against remnant-movement accounts.

7. COORDINATION. I also suggested in my article (§3.1) that only phrases can be coordinated, not heads, and I provided evidence that the kinds of examples that have been presented in the literature as requiring head coordination in fact permit full phrases (and still have the properties that were claimed to make them require head coordination).

It is kind of strange for Müller to focus on this point, because it would actually be better for the argument against the lexicalist hypothesis if coordination COULD target heads. The phenomenon of subword coordination is well attested (e.g. *pre- and post-war France*) and on the face of it appears problematic for the lexicalist hypothesis. The reason I suggested that only phrases can be coordinated is that the empirical evidence indicates that all instances of head coordination, including subword coordination, are actually phrasal. If it turns out that Müller is right and head coordination is possible, it would not affect my argument against the lexicalist hypothesis in any way. All it would mean is that coordination can target both heads and phrases.

Nevertheless, let us examine Müller’s argument (§7). He produces yet another example that is supposed to require head coordination, this one from Heycock and Zamparelli (2005:253, ex. 120a).

- (3) the ill-matched man and woman

Since what is ill-matched is only the combination of the man and the woman, according to Müller we need head coordination.

This does not follow. All that such examples rule out is coordination of full NPs plus ellipsis: *the ill-matched man and ~~the ill-matched~~ woman*. The only thing this type of example necessitates is coordination below *ill-matched*. Head coordination specifically is not necessary. In fact, it is easy to show that coordination below *ill-matched* can include more than just heads.

- (4) a. the ill-matched man from Mars and woman from Venus
- b. the ill-matched man with a tuxedo and woman in jeans
- c. the ill-matched exceptionally short man and exceptionally tall woman
- d. the ill-matched star of *Bride Wars* and director of *Saturday Night*

In older X-bar-style analyses of NPs, what we would be coordinating below *ill-matched* is N-bar. In Müller's example, N-bar happens to include nothing besides N, but it clearly can include more.

Müller also gives a couple of German examples, but they are also plausibly analyzed as coordination of phrases. As I showed above, material can be phrasal even when it does not include an indefinite argument of the head (2). There is no reason to think that Müller's German examples could not be phrasal.

I contend that there is no example that requires head coordination, and every example of putative head coordination can in fact be augmented with phrasal material and still have all of the properties that were claimed to necessitate head coordination. But again, even if this turns out to be wrong, it does not affect the arguments against the lexicalist hypothesis in any way.

8. CONCLUSION. As I have shown here, none of Müller's (2018) counterarguments go through. The arguments given in Bruening 2018 have not lost any force. I conclude that the lexicalist hypothesis is indeed both wrong and superfluous. There is no need to have separate morphology and syntax components in a model of grammar, and the notion of 'word' has no special status.

Müller also refers in his conclusion to 'more interesting morphological phenomena that may indeed require tools different from what we use in syntax' (p. e64). He does not say what these might be. In other work (Bruening 2017a), I have explicitly argued for a theory of morphology that has no mechanisms other than those that are needed for phrasal syntax. The onus is on Müller to show that such a theory will not succeed.

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