

László Kálmán

What can constructions do?

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1 Introduction

The fundamental distinction that Müller and Wechsler’s paper addresses is one between **lexical** and **phrasal** approaches to argument structure. The former posits rich lexical entries encoding the possible complements of a lexical item, whereas the latter assumes the independent existence of a rich stock of phrase types that lexical entries get incorporated in under certain conditions. In this way, phrasal approaches need less lexical information stored in lexical entries, namely, those that are not idiosyncratic for a given lexical entry do not have to be stored with it.

I believe that both approaches face important difficulties. The lexical approach has to provide some extra mechanism (e.g., **lexical rules**) in order not to miss wider and narrower generalizations that apply to groups of lexical entries that behave in similar ways in various respects. The phrasal approach, on the other hand, needs an elaborated theory of semantics that makes it possible to explain how it is decided which lexical entries are compatible with which phrase types.¹

In sum, I do not think that Müller and Wechsler successfully make the case for lexical approaches. In what follows, I will only comment on those parts of their paper that allegedly challenge what they call “phrasal approaches”. I will keep using their term, but I will understand it in the broadest possible sense, which I believe encompasses most members of this rather amorphous family of theories, as I will explain in section 2 below.

In these comments, I will first sketch (in section 2) what I believe the main differences are between “lexical” and “phrasal” theories as I conceive of them.

¹ It is also unclear whether semantic information alone is sufficient to decide in all cases, but this issue will not be addressed in what follows.

Then, in section 3, I will elaborate on some of Müller and Wechsler's arguments, namely, those targeting the main tenets of phrasal approaches, rather than the technicalities of one concrete theory or another. In particular, I will dwell upon the interaction of argument structure with co-ordination (section 3.1), with morphologically (and/or syntactically) "derived" (section 3.2) and elliptical (section 3.3) uses of verbs. In each case, I will argue that a phrasal approach is perfectly compatible with the data they quote. Finally, in section 3.4, I will address the issue of the relationship of surface distribution to learnability. I will argue that, in a truly phrasal approach, by its very nature, the data concerning the distribution of linguistic entities that drive language acquisition must involve extra-linguistic context (i.e., information on the use of those entities), so the mere surface distribution of linguistic forms clearly cannot provide enough evidence for the acquisition of a language. In the conclusion (section 4) I will claim that, looking from a wider perspective, Müller and Wechsler's criticism is misguided, because they do not focus on what really should make a difference between the two families of theories, namely, on the categorical versus gradient character of grammatical regularities.

2 Comparison of the two approaches

It is not my aim or duty to reproduce here Müller and Wechsler's characterization of the two families of theories, the lexical and the phrasal one. Let me just concentrate on the main consequences of the points that they mention.

In lexical theories, phrase structures are meaningless in the sense that they specify at most a semantic combination operation accounting for how the semantics of their components are combined. However, the lexical rules they posit often contain information on how different uses of the same lexical item semantically differ. In addition, they also allow for meaningful phrasal constructions in order to deal with certain types of **idioms**, i.e., expressions the semantics of which is not predictable from the semantics of their components (including both lexical information and the effect of the eventual application of lexical rules).

Unfortunately, there is no canonical phrasal approach, whereas lexical theories at least converge in their main traits. Let me emphasise only one feature that I believe phrasal approaches share, and which I find most important. They aim at a maximum level of **uniformity** of all types of expressions in natural language. They conceive of all of them as the embodiments of **constructions**, i.e., of empirical generalizations about forms and meanings. More precisely, they are memorized patterns that encode formal and functional information about linguistic entities; the more frequently one has encountered a pattern, the easier it will be

accessible as a memorized construction.² A lexical item is a construction, and so is a particular type of formal arrangement of expression types. Crucially, in what follows, I will not assume that a phrasal approach must needs posit full-fledged phrasal “patterns” or “skeletons” with fully specified syntactic (e.g., word-order) information.³ In what follows, I will only deal with those arguments put forth by Müller and Wechsler that concern phrasal theories in this very general sense.

On purely theoretical grounds, I am inclined to consider phrasal approaches superior to lexical ones for the following reason. Take the “meaningful phrasal constructions” of a lexical approach. What these entities do could as well be done using *ad hoc* phrase structure rules and/or (the output of) *ad hoc* lexical rules. There is no uniform mechanism that should decide which solution to use in what cases. This problem is not as peripheral as it might seem. It shows that the borderline between “idioms” and “regular patterns” may be fuzzy, or the distinction may be **gradient**, and a theoretical framework that forces it to be **categorical** may turn out entirely misguided. Also, there is no consensual **simplicity metric** that should help us decide which mechanism to use in what type of cases. The inherently uniform way in which phrasal approaches treat expression types guarantees that phrasal approaches do not have to take such decisions at all.

3 Arguments against the phrasal approach

3.1 Valence and co-ordination

Müller and Wechsler’s argument (in their section 6.1) goes like this. In a sentence like

(1) *She then offered and made me a wonderful espresso,*

the two verb forms *offered* and *made* are co-ordinated. It is a well-established fact that only expressions with (quasi-)identical selection properties can be

² Here I am conflating constructionist approaches with so-called **memory-based, exemplar-based** or **analogical** approaches, although there is not much overlap between them in current studies. Constructionist theories have been developed mainly in the area of syntax, whereas most analogical ones deal with (morpho-)phonology (e.g., Skousen, 1989, Eddington, 2006), although there are formally less elaborated approaches that address both (e.g., Blevins and Blevins, 2009).

³ Some of Müller and Wechsler’s criticism, which I will not dwell upon here, are addressed to theories that do posit such patterns, in particular, to Marantz (1997).

co-ordinated, and the co-ordinated structure will have those selection properties, too. Therefore, we must recognize that both *offer* and *make* select a subject, an indirect object and a direct object (or at least this is one of their possible argument frames). That is, in the example under scrutiny, the expressions *she* (the subject), *me* (the indirect object) and *a wonderful espresso* (the direct object) are selected by the co-ordinated structure *offered and made*.

This line of reasoning, however, presupposes that co-ordination consists of taking two expressions with (quasi-)identical selection properties, and combining them according to a syntactic rule of co-ordination. Under this view, the surface observation about the (quasi-)identical selection properties of co-ordinated expressions must originate from inherent properties of lexical items or outputs of lexical rules. But a phrasal approach, in the general sense as I outlined in section 2, may follow an entirely different route. In a phrasal approach, all features of all expressions must be licensed by constructions, and so are the various types of co-ordination.

The very nature of co-ordinated structures, namely, that they serve the purpose of incorporating two or more **similar** expressions (i.e., containing an overlap) in a more concise manner, suggests that they must be licensed by several overlapping constructions. What exactly can be co-ordinated varies from language to language, in terms of what the overlap (and the difference) between the licensing constructions can consist of. The example at hand, (1), must be licensed by whatever constructions license the following two sentences:

- (2) a. *She then offered me a wonderful espresso.*
 b. *She then made me a wonderful espresso.*

In addition, one English co-ordination construction licenses a more compact, co-ordinated expression in cases when everything but the finite verb overlaps in the two (or more) sets of licensing constructions.

To be sure, this is not the whole truth about the conditions on co-ordination. There are severe and subtle restrictions on the similarities of the semantics of the two or more components, which also accounts for the fact that the condition of (quasi-)identical selection criteria is not a purely formal one. Even all the non-overlapping segments must be contentfully related to each other. See, e.g., Prüst (1993); Prüst et al. (1994); Kehler (1994) for details.

As a consequence, a phrasal approach may derive the (quasi-)identity of the selection properties of co-ordinated expressions from the properties of the licensing constructions (namely, their overlap in both formal and functional terms) rather than the properties of the non-overlapping parts. As a matter of fact, I believe this type of explanation is superior to a mere stipulation on what prop-

erties the non-overlapping expressions must share, because it establishes a link between syntactic co-ordination and very general principles of discourse organization. For example, as Prüst (1993) points out, constructing a list-type co-ordination in discourse requires for the members of the list to have a non-trivial “characteristic generalization” that fits the previous discourse topic. Another limitation is that, in the case of true co-ordination, no overlap is allowed in the semantics of the conjuncts. The same applies to syntactic co-ordination: if you say *Hungarians and Gypsies*, you suggest (quite wrongly) that Hungarians and Gypsies are disjunct sets.

Roughly the same comments can be made about Müller and Wechsler’s criticism in their section 9.2. There they argue that the adjacency requirement on English verbs and their arguments can be violated in co-ordinated structures like the following:

(3) *Mary tossed me a juice and Peter a drink.*

However, this type of discontinuity does not make it possible to insert, say, an adverbial in front of the arguments. So the sentence in (4b) below is as bad as the one in (4a):

- (4) a. **Mary tossed happily Peter a drink.*
 b. **Mary tossed me a juice and happily Peter a drink.*

In the same vein as I argued in connection with (1), the ungrammaticality of the sentences in (4) follows from the absence of the appropriate constructions that should license them.

3.2 Valence and derivational morphology

This argument, explained in section 6.2 of Müller and Wechsler, comes from cases when usually intransitive verbs are used transitively in particular cases, due to the presence of a “secondary predicate” (e.g., a resultative one). For example, German *tanzen* ‘dance’, an intransitive verb, can be used transitively in *die Schuhe blutig tanzen* ‘dance one’s shoes bloody’. Now, the participles of such intransitive verbs (e.g., the participle *getanzt* ‘danced’ of *tanzen* ‘dance’) normally cannot be used as modifiers (thus **die getanzten Schuhe* ‘the danced shoes’ is not used), because the head that a participle modifies must correspond to its direct object. Nevertheless, non-finite versions of resultative constructions such as *die Schuhe blutig tanzen* ‘dance one’s shoes bloody’ do exist, and in such cases the participle

can be used as (the head of) a modifier: *die blutig getanzten Schuhe* ‘the shoes danced bloody’.

Why is this a problem for phrasal approaches? According to Müller and Wechsler, “morphological processes have to be able to see the valence of the element they attach to. This is not the case if arguments are introduced by phrasal configurations after the morphology level.” If I understand the argument correctly, the claim is that a phrasal approach cannot prevent the grammar from producing **die getanzten Schuhe* ‘the danced shoes’, because if the morphological process of participle formation was blind to the valence of the verb *tanzen* ‘dance’, then it would produce the participle *getanzt* ‘danced’ without scruples, and the grammar can use this form in the phrasal pattern responsible for participles as modifiers, thereby producing **die getanzten Schuhe*.

This line of argumentation, however, ignores an important feature of phrasal approaches (in the broad sense, as I have used this term throughout these comments): the fact that all properties of an expression must be licensed by constructions in those theories.⁴ This includes their functional properties (including the semantic ones). One such functional property of participial modification is that the head to be modified must play a “theme” role, which is incompatible with the interpretation of the participle *getanzt* ‘danced’.⁵ It looks like the shoes are treated as a “theme” in the resultative construction in which they come bloody through dancing and, by the same token, in its non-finite counterpart containing the participle form of the verb.

In a phrasal approach, the resultative construction need not only license the finite (transitive) use of an intransitive verb with the “theme” expressed as a direct object (plus the resultative complement), but also the non-finite version of such expressions, in which the participle of the same verb is used as a modifier, while the head noun expresses the “theme”, as it usually does when the modifier is a participle (phrase). The key element of this type of treatments is the fact which Müller and Wechsler themselves emphasise in their section 2.3, namely, that phrasal constructions need not correspond to purely formal combinatory operations, but can have semantic import.⁶ In this particular case, the semantic

⁴ Usually the exact mechanisms of licensing are not spelled out in all their details. For an exception see Sag’s (2012) Sign-Based Construction Grammar.

⁵ Note that the existence of a transitive version is not a necessary condition. For example, the participles of intransitive verbs like *vanish*, *grow*, *fall* can be used as modifiers, as long as the head plays a “theme” role: *the vanished prisoner*; *a grown man*; *the fallen leaves*. As a matter of course, there can be cross-linguistic or even intra-linguistic variation in both the potential uses of participles and the concept of a “theme”.

⁶ According to Müller and Wechsler, phrasal constructions actually *have to* be meaningful, but, as I have mentioned earlier, I try to interpret the term *phrasal approach* as broadly as possible.

contribution of the resultative construction is that it involves a component that plays the role of a “theme”, which undergoes a change of state, location etc. corresponding to the interpretation of the secondary (resultative) predicate, by virtue of an eventuality expressed by the main verb.

3.3 Unexpressed complements

Whatever (even imaginary) version of phrasal approaches we think of, it is clear that the compatibility of a lexical item and a construction involving it must be decided mainly on semantical grounds. As a consequence, the fact that a certain lexical item may occur in a number of different constructions with roughly the same interpretation calls for an explanation. Müller and Wechsler’s examples are control structures, passivization and nominalization. In all these expression types, verbs can or must appear without an explicit subject and/or object, but their interpretation is not significantly different from that of their finite or active uses. Moreover, if resultative complements may appear with their finite versions, it can often appear with the non-finite versions as well:

- (5) a. *John is sleeping.*
 b. *John tried to sleep.*
- (6) a. *They shot John dead.*
 b. *John wanted to be shot dead.*

In (5b), the verb *sleep* appears without an overt subject complement; this is a control structure, i.e., John is understood as the subject of sleeping, just like in the finite version (5a). In (6b), the agent of shooting can be left unexpressed because the verb occurs in a passive construct (*be shot*); the patient is unexpressed because this is also a control structure (i.e., John is understood as the patient of shooting). And the resultative complement *dead* is licensed although, in principle, it is only licensed when a patient is present, as in (6a).

Although their argumentation is not very detailed, it seems that Müller and Wechsler consider this a challenge to phrasal approaches because the interpretation of *sleep* is constant across its finite and non-finite uses (cf. (5)) and, similarly, the presence of a resultative complement is allowed across the finite and non-finite uses of *shoot* (cf. (6)).

Now, this is a good occasion for turning back to the issue of how exactly lexical and phrasal approaches differ. To put it in simple terms: whatever output is produced by lexical rules according to lexical approaches (or posited as a

“meaningful phrasal construction”) corresponds to, in a phrasal approach, a memorized generalization of formal and functional properties of surface patterns (just like lexical entries themselves). This does not entail that surface phrasal patterns must be fully specified for all syntactic properties (such as word order). Lexical approaches claim that it is more economical to associate a rich morphological, syntactic and semantic characterization with each lexical entry, and let lexical rules operate on it, whereas phrasal approaches are more pessimistic about economy (given that, as I have mentioned in section 2, we know of no accepted simplicity metric), and emphasise uniformity.

Thus, in a phrasal approach, a non-finite construct, e.g., a control structure must be licensed by constructions explicitly present in grammar, it is not to be derived from lexical or syntactic assumptions and/or from general principles. For example, the construction licensing infinitive control is characterized by the presence of a main verb like *try* plus a *to*-infinitive complement. From the semantic point of view, both the choice of the main verb and the interpretation of the *to*-complement are severely constrained in an obvious manner. The main verb must express an attitude, activity etc. that targets another attitude, activity etc. with an identical main protagonist. So ‘trying’ is something targeting an attitude or activity of the same entity as the one who tries to do it. The lack of an overt expression of the subject of the infinitive is part of the formal characteristics of the construction; the control interpretation is part of its semantic characterization. The acquisition of this construction involves the understanding of these semantic, functional characteristics and associating them with these formal characteristics. I believe this task does not constitute a significantly greater challenge than, say, acquiring the forms and uses of relative clauses.

Roughly the same story can be told about passivization and various types of nominalization. Under the phrasal view, the corresponding constructions determine which possible complement can or need to be expressed explicitly, and this seems reasonable given the fact that it varies from one language to the other (although there are universal tendencies). For example, a resultative complement can be incorporated in the nominalized form of ‘shoot’ in German (cf. *Totschießen* ‘dead-shooting’ in Müller and Wechsler’s example (72)), whereas this is not possible in English (cf. the non-existence of **Shooting dead is not a solution* as opposed to, say, *Arrest/death sentence/execution is not a solution*).

Consider the dependency of the resultative complement on the presence of a theme complement. Clearly, this dependency is a conceptual rather than linguistic one: the resultative complement is a “secondary predicate” about the theme (which holds true if and when the event in question comes to completion), and such a predicate simply does not make sense, it cannot be coherently incorpo-

rated into the meaning unless the theme in question can be reconstructed. But there is no *a priori* constraint to the effect that the theme should be explicitly expressed in linguistic terms. From the perspective of the phrasal view, an expression must embody some construction licensing the presence of such complements in order for their linguistic realization to be feasible.

As a matter of fact, it seems that different ways in which a complement can be expressed explicitly are characterized by different degrees of autonomy or independence, which may be related to the level of multi-functionality of the expression type in question. For example, instrument complements are conceptually motivated by the presence of a purposeful agent (because the concept of an instrument only makes sense if there is such an agent to use it for some purpose). And since, at least in English, instrument complements can be expressed in quasi-canonical ways (through the preposition *with*, for example), with a relatively low functional ambiguity, the conceptual presence of an agent is almost a sufficient condition for an instrument complement to appear, e.g., by employing the *with*-construction. Some secondary predicates, among them some of the resultative type, are similar (e.g., *into pieces* is such a rather independent expression, specialized for a resultative use). Others, like a bare adjectival-adverbial expression, are not this specialized, so they must be embedded into a phrasal construction in order to fulfil a resultative role.

Now, clearly, the patient of the verb *shoot* in the example (6b) can be reconstructed conceptually (owing to the semantics of the control structure), therefore the interpretation of the resultative complement *dead* can be incorporated into the meaning of the sentence successfully. This is a necessary, although not sufficient, condition for the resultative complement to appear at all. But it takes a particular phrasal resultative construction (licensing *shoot somebody dead*) for it to be incorporated into the syntactic structure of an utterance.

3.4 Processing, acquisition and distribution

Müller and Wechsler quote one piece of psycholinguistic evidence aiming at justifying lexical approaches against phrasal ones, namely, Wittenberg and Piñango (2011), who present data indicating that expressions consisting of a light verb plus a noun are not stored in memory. However, in my understanding of their paper, this only shows that such expressions (or at least most of the ones that Müller and Wechsler included in their survey) are not fully lexicalized “idioms”. I know of no phrasal approach that should claim that all expressions embodying a construction like the one consisting of a light verb plus a noun must be assumed to be memorized by the speakers of a language.

As a matter of fact, I believe most versions of the phrasal approach consider light verb plus noun constructions essentially on a par with full verb plus complement constructions, because they tend to emphasise the uniformity of linguistic expression types. The distributional differences of these two construction types are well known (e.g., the co-occurrence of a given light verb with a given noun is much more frequent than that of a given full verb with a nominal head of its complement). But the hypothesis that Wittenberg and Piñango (2011) tested does not follow, as far as I can see, from these differences or from any theoretical assumptions of phrasal theories as I have characterized them in section 2 earlier.

In general, data concerning the distribution (frequency of co-occurrence) of linguistic expressions is a joint effect of many different factors, including the frequency of the component lexical units, the frequency of phrasal constructions embodied by the expression and, of course, the semantic relationship between the lexical and phrasal components. It is common in computational linguistics to use distribution as the only source of information for discovering such underlying factors. The reason is obvious: this is the only type of information available in a corpus. But it would be simply absurd to assume that anything similar to this happens in actual language acquisition. Hence, I agree with Müller and Wechsler's criticism of Bod (2009) in this respect. The child has a vast range of additional data at its disposal, namely semantic and pragmatic data, of a real-world relevance equal to or even greater than linguistic input, which make it possible to directly access most of the actual causes that are somewhat poorly and unreliably reflected by the surface distribution of spoken material.

4 Conclusion

It might seem from what I have explained so far that the difference between lexical and phrasal approaches is limited to a certain division of labour between various components of the grammar, in particular, in the distribution of linguistic information between lexical entries, eventual lexical rules and phrasal (or other) patterns. Lexical approaches put a heavy load on entries and rules, whereas phrasal approaches on memorized patterns. Is this difference more than a mere technicality?

I believe it is. As I have emphasised in section 2, the most important feature of phrasal approaches is the assumption of homogeneity of linguistic expressions in terms of their formal and functional characteristics as well as their grammatical status. As a consequence, there can be no distinction between entities directly stipulated by the grammar, on the one hand, and other entities produced by grammatical rules, on the other. For example, under truly phrasal approaches,

there can be no sharp boundary between “productive” possibilities of combination and “frozen” complex expressions. So these approaches predict that all linguistic regularities are of a gradient character. If we intend to compare them with lexical approaches, what we should examine is whether this type of uniformity and graduality is supported by the data. I believe Müller and Wechsler do not even attempt to carry out such an analysis.

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