

## Verbs

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The earliest known Greek grammar by Dionysius Thrax distinguishes eight parts of speech: noun, verb, participle, interjection, pronoun, preposition, adverb, and conjunction. The list looks largely familiar to the modern eye, though there are certain surprises. A number of categories that play a role in modern taxonomies— article, classifier, complementizer, determiner, etc. – are missing. And by contemporary lights, some of the traditional categories appear too narrow: participles, prepositions, and pronouns are typically viewed by contemporary linguists as subcategories of adjectives, adpositions, and nouns, respectively. When it comes to interjections, there is a serious question whether they should count as genuine words at all: greetings, expletives, fillers, and the like are at best loosely integrated into larger expressions. But in the larger scheme, these are quibbles: we continue to classify words roughly the same way as we did around 100 B.C. Given that, it is striking that there is no agreement about the underlying principles of classification.

Among the usual categories, it's verbs that probably have the best chance of being instantiated in all human languages.<sup>1</sup> Dionysius identifies verbs by a morphological and a semantic criterion: they are words inflected for person, number, and tense that signify actions or passions. This definition has been reprinted thousands of times with slight variations. It works remarkably well in practice – as generations of schoolchildren can attest. But if we are interested in what verbs are – as opposed to how to spot most of them in Ancient Greek – the traditional criteria won't do. Vietnamese, Thai, Mandarin Chinese, and a number of other languages have no system of verbal inflections. And no matter how far one stretches the meanings of “action” and “passion” there are plenty of counterexamples to the claim that all verbs signify one or the other: the Latin verbs *existit* [exist], *quiescit* [rest], *friget* [show cold], *albet* [show white], or *claret* [show bright] are but a few mentioned already in the 1662 *Port-Royal Logic*<sup>2</sup>.

The problems with the traditional definition can perhaps be fixed. We can move from the purely morphological criterion to a more syntactic one and say that verbs are the only predicates in the lexicon. We can also sharpen the semantic criterion and say that verbs are true of events, processes and states but never of other sorts of entities. A defense of these characterizations is presented in sections 1 and 2 below. The proposed definition – verb is a lexical category whose members can be predicated of events, broadly construed – remains silent on the two features that have been widely regarded as constituting the very essence of the verb. Aristotle says that “a verb is what additionally signifies time” (*De*

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<sup>1</sup> For a survey of some of the debates surrounding the universality of lexical categories see Baker (2003), especially sections 2.20, 3.9 and 4.6.

<sup>2</sup> Arnauld and Nicole (1662): 80. English lacks a morpheme like *-et* but such morphemes do exist in other languages besides Latin; cf. the German *grün+en* and the Hungarian *zöld+ell* [show green].

*Interpretatione* 16b6) and that “every statement-making sentence must contain a verb” (*De Interpretatione* 17a9). Though neither of these claims is strictly true, they contain important insights; these will be examined in sections 3 and 4.

## 1. Verbs are predicates

Officially, expressions belong to the same syntactic category just in case they can be interchanged within other expressions *salva beneformatione* (without loss of well-formedness) and they belong to the same semantic category just in case they can be interchanged within other expressions *salva significatione* (without loss of meaningfulness); cf. Bar-Hillel 1953. But the official line is routinely ignored because it leads to excessively fine-grained categories. Consider the bound morpheme *-ly*. It can be added to *hour*, *day*, *month*, and *year* but not to *second*, *minute*, *decade*, and *century*. But few would be willing to make a grammatical distinction on such feeble grounds. (It seems that *-ly* can combine with nouns denoting medium-length intervals only.) Linguistics is committed to the unity of the category of nouns not only in the face of minor differences in what morphemes they combine with, but despite massive differences in syntactic between count nouns and mass nouns, common nouns and proper nouns, relational and non-relational nouns, etc. The consensus is that words do different kinds of things in language and we regard distribution as a mere clue for discovering what these job-descriptions really are.

The prime division among words is between *lexical* and *functional* categories. The latter were traditionally seen as contributing to the form, rather than the content of sentences. Paradigmatic examples of functional words are the determiner *every*, the conjunction *or*, and the complementizer *that*. Functional words tend to be short, functional categories tend to be small and closed. In addition, lexical categories do and functional categories don't participate in derivational morphology. For example, nouns, verbs, adjectives can be transformed into each other in variety of ways but not to adpositions. And there are no morphemes that can attach to adpositions that would turn them into a noun, a verb or an adjective.<sup>3</sup> This arguably shows that adposition is a functional category despite the clear spatial meaning many of its members have.<sup>4</sup>

*Verb* is clearly a lexical category; the question is what distinguishes it from other lexical categories. My suggestion is simple: verbs, unlike other lexical categories, are predicates – expressions used to say

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<sup>3</sup> There is an apparent exception to the claim that prepositions don't participate in derivational morphology: many of them can combine with *-ness*; cf. *betweenness*, *aboveness*, *beforeness*. I think the exception is illusory: these prepositions appear to have adjectival variants as well and perhaps only those combine with *-ness*. There is a similar difficulty when it comes to auxiliaries. By and large they don't seem to participate in derivational morphology but of course we do have words such as *undo*, *redo*, *overdo*, and *outdo*. *Have* and *be* permit fewer of these combinations but *unhave* and *unbe* are attested. Still, none of the derived forms appear in auxiliary positions within sentences. Thus it seems reasonable to postulate ambiguity: perhaps there are both verbs and auxiliaries pronounced as /du/, /hæv/, and /bi/.

<sup>4</sup> This is not universally accepted: both Chomsky (1970) and Jackendoff (1977) count adposition as a lexical category. The Appendix of Baker (2003) gives a detailed argument against their view.

something *of* something. Their predicative nature is reflected in the fact that they are associated with a set of argument positions. When these are all saturated a verb yields a clause.<sup>5</sup>

Being a predicate is widely accepted as a necessary condition for being a verb but it is equally widely rejected as a sufficient condition. The near-consensus is that great many other expressions – in particular, common nouns and intersective adjectives – are also predicates. Such expressions can certainly be used predicatively, but they clearly have other uses as well. Common nouns can be used to refer (cf. *dog* in *Dogs are animals*) and intersective adjectives can be used to modify (cf. *large* in *Large dogs bark*). In principle, we could see either the predicative or the non-predicative use as primary. By contrast, verbs have *only* predicative uses. A verb can come to refer only if it is transformed into a noun (e.g. a gerund) and it can come to modify only if it is transformed into an adjective (e.g. a participle). Thus, verbs *must* be counted as predicates but nouns and adjectives *needn't* be. We get the tidiest picture if we assume that nouns and adjectives get to be predicates only as a result of a syntactic transformation.

There is evidence that predicative occurrences of nouns and adjectives contain extra structure. The first thing that comes to mind in this connection is that simple declarative sentences involving nominal and adjectival predicates require (at least in most languages) a verbal copula. But this is not conclusive: in small clauses (e.g. the embedded clauses of *I regard the senator a crook* and *You consider the senator lucky*) there is no overt verb linking the subject with a nominal or adjectival predicate. A better reason to believe that non-verbal predicates are more complex than verbal ones comes from coordination:

- (1) We consider the senator lucky and a crook.  
(1') We consider the senator [<sub>PREDP</sub> [<sub>PR</sub>∅][<sub>AP</sub> lucky]] and [<sub>PREDP</sub> [<sub>PR</sub>∅][<sub>NP</sub> a crook]]

Since the adjectival and nominal predicates can be conjoined they must be of matching categories. This is guaranteed if we assume that when adjectival or nominal phrases are used predicatively they are embedded into a predicate phrase. The idea can be implemented by positing an empty predication head PR taking an AP or NP as complement.<sup>6</sup> The fact that verbs do not coordinate with non-verbal predicates suggests that they do not need such an empty element to become predicates:<sup>7</sup>

- (2) \*His advisors made the senator win and lucky.  
(2') \*His advisors made the senator [<sub>VP</sub> win]] and [<sub>PREDP</sub> [<sub>PR</sub>∅][<sub>AP</sub> lucky]]  
(3) \*His advisors made the senator win and a crook.  
(3') \*His advisors made the senator [<sub>VP</sub> win]] and [<sub>PREDP</sub> [<sub>PR</sub>∅][<sub>NP</sub> a crook]]

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<sup>5</sup> Nouns or adjectives can have argument positions: *mother* and *proud* both have one marked by the preposition *of*. But when those arguments are saturated we do not get a clause.

<sup>6</sup> The subject of predication may start in the specifier position and be subsequently raised out of the PREDP; cf. Bowers (1993). Bowers (2001) summarizes the evidence for predicative heads in logical form.

<sup>7</sup> Bowers argues that all predicates, including verbal ones, contain a PRED head. Examples like (2) and (3) are from Baker (2003): 78. Chapter 2 of Baker's book argues in detail for the view advocated here.

Bowers (1993) has suggested that PR is lexically realized in English by the *as* particle in *We regard the senator as lucky* and *We regard the senator as a crook*. Many other languages have particles that arguably realize PR: *za* in Russian, *som* in Norwegian, *als* in German, *yn* in Welsh, *ina* in Irish, *-kye* in Korean, etc. Some of these particles take only AP's or NP's. Edo apparently has distinct particles for constructing nominal and adverbial predicates: *yé* performs the former function, *rè* the latter.<sup>8</sup> If nominal and adjectival phrases are of different semantic type, this is certainly not unexpected.

The evidence for the claim that unlike nouns and adjectives, verbs are lexical predicates is substantial. But it is important to keep in mind that this thesis does not automatically yield a semantic characterization of verbs. *Predicate* is the syntactic category of expressions that have a number of arguments whose joint saturation yields a clause. If we assume that all predicates have the same sort of semantic value – e.g. that they all denote functions to truth-values – we have something that all verbs have in common semantically.<sup>9</sup> But the assumption is far from innocent. Raising verbs (e.g. *seem*) and weather verbs (e.g. *rain*) take expletive subjects as arguments. If we commit ourselves to the idea that these denote functions we have to say what their domains are, which in turn requires assignment of semantic value to the expletive. Perhaps when it seems to Jill that Jack left then *that he left* seems to Jill and perhaps when it rains then *the rain* rains, but these proposals are rather fanciful. The typical assumption is that expletives are semantically vacuous. Based on these sorts of considerations one may be tempted to draw the conclusion that “being a verb is fundamentally a syntactic matter”<sup>10</sup> – *seem* and *rain* require a syntactic argument but not a semantic one. In the next section we will see whether the conclusion can be resisted.

## 2. Verbs denote properties of events

Since the seminal work of Davidson (1967) many have argued that at least some verbs are predicates of events. Motivated primarily by the inferential behavior of manner adverbs, for (4) Davison proposed the logical form (4'):

- (4) Jill greeted Jack.  
(4')  $\exists e$ . greeted (Jill, Jack, e)

Followers of Davidson have extended the proposal in two ways. First, they have argued that it would be implausible to think that action sentences differ fundamentally from the rest. A sentence like (5) can

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<sup>8</sup> Baker (2003): 40. Baker cites Stassen's (1997: 77-91) 410 language survey, according to which overt PR is the norm for languages throughout Africa and is also present in many languages in North and South America, Asia, and Oceania. Many of these are pronounced even when nominal or adjectival predication occurs unembedded.

<sup>9</sup> Bowers (1993) does make this assumption. Following Chierchia and Turner (1988) he interprets PR as a type-shifter mapping properties (which he considers as individuals) to propositional functions.

<sup>10</sup> Baker (2003): 27. Baker thesis is that X is a verb if and only if X is a lexical category and X has a specifier.

also been seen as expressing quantification over underlying entities, except that those entities are states, rather than events.

- (5) Jill slept at home.  
(5')  $\exists s$  (slept (Jill, s)  $\wedge$  at home(s))

Bach (1986) introduced the term *eventuality* for events, processes, and states. To avoid the slightly awkward term semanticists tend to use the term *event* in such extended sense. I will follow this practice. Second, neo-Davidsonians have emphasized that the arguments of the three-place predicate in (6') are not on a par. *Jill* and *Jack* are assigned appropriate thematic roles by the verb but the event-argument is non-thematic. We can think of the thematic roles as specifying ways in which Jill and Jack participate in the underlying event –the former as its Agent, the latter as its Theme.

- (4'')  $\exists e$  (greet (e)  $\wedge$  Agent(e, Jill)  $\wedge$  Theme(e, Jack)  $\wedge$  Past (e))

The extensions have real advantages. In Montague semantics verbs are scattered all over the type-theoretic hierarchy: *play* would be of type  $\langle e, t \rangle$ , *write* of type  $\langle e, \langle e, t \rangle \rangle$ , *give* of type  $\langle e, \langle e, \langle e, t \rangle \rangle \rangle$ , etc. In a neo-Davidsonian semantics all verbs have the same type: they are one-place predicates of events. Of course, verbs can be subcategorized by the number of arguments they take. But the linguistically natural way to subcategorize them is more fine-grained than that. For example, among intransitive verbs one may distinguish between *unergative* verbs (e.g. *run*, *speak*, *laugh*) whose subject is external to the VP and *unaccusative* verbs (e.g. *arrive*, *collapse*, *rust*) whose subject is not. This syntactic difference corresponds to a difference in the sorts of thematic roles assigned (e.g. the Agent role is always assigned to an external argument while the Theme role is always internal; cf. Gruber (1965), Chomsky (1981), Grimshaw (1990)). The distinction is captured in a theory that incorporates thematic relations into logical form.

The neo-Davidsonian approach draws clear distinctions among different aspects of verb meaning. First, there is the core content of the verb, which characterizes an underlying event. In the case of (4''), this is the predicate *greet*, true of greeting events and nothing else. Second, there is the argument structure of the verb, which determines the number and type of participants in the event. In (4''), this is represented by the second and third conjuncts. Finally, there is the content contributed by the inflection on the verb. Here this is the past tense morpheme represented in (4'') by the last conjunct. Separating the three components has been the chief reason Neo-Davidsonian theories have been successful in dealing with difficult phenomena, such as perception reports, aspect, plurals, causatives, focus, secondary predication, and qualification.<sup>11</sup>

Once the different ways verbs contribute to logical form are distinguished, it is possible to capture cases where one or another of these three aspects of verb meaning is vacuous or missing. Thus, representing non-finite occurrences of verbs is unproblematic:

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<sup>11</sup> See Higginbotham (1983), Parsons (1990), Schein (1993), Pietroski (2000), Herburger (2000), Rothstein (2001), and Szabó (2003), respectively.

(6) Jill saw Jack run.  
(6')  $\exists e \exists e' (\text{see}(e) \wedge \text{Experiencer}(e, \text{Jill}) \wedge \text{Theme}(e, e') \wedge \text{run}(e') \wedge \text{Theme}(e', \text{Jack})) \wedge \text{Past}(e)$

(7) Jack went to run.<sup>12</sup>  
(7')  $\exists e \exists e' (\text{go}(e) \wedge \text{Theme}(e, \text{Jack}) \wedge \text{Goal}(e, e') \wedge \text{run}(e') \wedge \text{Theme}(e', \text{Jack}) \wedge \text{Past}(e))$

In (6) and (7) the seeing and going events are in the past but the time of the running events is unspecified. This is how the sentences manage to leave it open whether the events they mention are simultaneous. Light verbs pose no problem either:

(8) Jill took a nap.  
(8')  $\exists e (\text{Agent}(e, \text{Jill}) \wedge \text{Theme}(e, \text{a walk}) \wedge \text{Past}(e))$

(9) Jill had a nap.  
(9')  $\exists e (\text{Experiencer}(e, \text{Jill}) \wedge \text{Theme}(e, \text{a walk}) \wedge \text{Past}(e))$

*Take* and *have* do not contribute a core component to the logical form of (8) and (9): all these sentences say is that there is a past event whose Agent is Jill and whose Theme is a nap. There is no need to think that this event is some sort of taking or having. Presumably, it is a nap.

In the same vein, if – as seems plausible – *rain* or *seem* fail to assign thematic roles to their subjects, the logical form of (10) and (11) can simply be as follows:

(10) It rained.  
(10')  $\exists e (\text{raining}(e) \wedge \text{Past}(e))$

(11) It seems to Jack that Jill left.  
(11')  $\exists e (\text{seeming}(e) \wedge \text{Experiencer}(e, \text{Jack}) \wedge \text{Theme}(e, \text{that Jill left}) \wedge \text{Present}(e))$

This removes the obstacle for a purely semantic characterization of verbs mentioned at the end of the previous section. All verbs – including weather verbs and raising verbs – are one-place predicates of events. What verbs denote then depends on the semantics of predication one adopts. The simplest view is that verbs plurally denote events, e.g. that *run* denotes each running event and *sleep* denotes each state of sleeping. Those who are less concerned about positing entities in the semantics can assign a single type of denotation to all verbs. This could be a function from events to truth-values, a set of events, a kind of events, or a property of events. For convenience, I will adopt the last alternative.<sup>13</sup>

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<sup>12</sup> I am ignoring the complication that (9) does not entail that Jack actually ran. Note that the position occupied by *run* is not intensional in the usual sense: one can substitute an extensionally equivalent predicate in this position *salva veritate*.

<sup>13</sup> The semantic value of light verbs would thus be the property of being an event. As (10) and (11) illustrate, the light verbs *take* and *have* differ semantically only in the thematic roles they assign to their subject. Note also that both *take* and *have* non-light verb homonyms, which occur in sentences like *Jill took Jack to the doctor* and *Jill has a coat*.

Just because verbs describe events we cannot conclude that other words don't do the same. We certainly seem to be able to talk about events using nouns like *kick*, *freeze*, or *war*. The suggestion that certain entities can only be denoted through certain types of expressions isn't well-motivated. Frege thought predicate denotations (he called them *concepts*) cannot be denoted by non-predicates, which led him to the conclusion that the concept *horse* is not a concept; cf. Frege (1892): 182 – 5. It is best to avoid such paradoxes by acknowledging that nominal expressions are referentially unconstrained: anything can (in principle) be referred to by some suitable noun in some suitable language.

What then distinguishes semantic ally a verb from the corresponding gerund? I suggest that the distinction lies not in *what* they denote but in *how* they denote; cf. Furth (1968) and Burge (2007). Verbs, being predicates, are predicated of things; nouns, being referring expressions, refer to them. What *greeting* refers to are greetings and they are precisely what *greet* is predicated of. This does not quite make *greeting* and *greet* synonyms – there is more to meaning than denotation.<sup>14</sup> But *greet* and [<sub>PREDP</sub> [<sub>PR</sub>∅] [<sub>NP</sub> *greeting*]] probably do mean the same. Thus the sentence *Jill greeted Jack* can be correctly paraphrased as *some past greeting of Jack is by Jill*.

### 3. Verbs and times

The definition of a verb advocated here establishes no link between verbs and time. On the one hand, this is a good thing. There are languages where tense can associate with nouns and adjectives (e.g. Turkish, Halkomelem) and languages where it cannot associate with verbs (e.g. Yoruba, Nupe). On the other hand, these languages are the exception; cf. Stassen (1997). Moreover, the auxiliaries often used to express temporal reference (such as the English *will*) typically modify a verb. So while temporality is not essential to being a verb, the correlation is clearly more than accidental.

Givón (1984) argues that verbs typically denote transitory states of affairs, whereas nouns and adjectives pick out more permanent ones. How one locates transitory states of affairs in the flow of time makes a difference, which in turn explains the association of verbs and times. The obvious problem with this proposal is that verbs correlate with transience much less than they do with temporality in general. In addition, the explanation presupposes that *all* lexical categories denote states of affairs – a rather tendentious claim. *Prima facie*, neither *blue* nor *dog* picks out a state of affairs.

According to the event-based view advocated here, the association of verbs with times is less direct than on Givón's account. Verbs denote properties of events and events are temporally structured. Thus the lexical meaning of a verb already contains some temporal information. This is what makes it the natural locus for temporal reference in general. Nouns (and perhaps other words as well) can denote events and their properties, but they don't have to.

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<sup>14</sup> Baker (2003): 15 – 6 complains that functionalist approaches to lexical categories postulate bogus ambiguities. He points out that the sentences *Chris hungers*, *Chris has hunger*, and *Chris is hungry* are near synonyms, which is not what one would expect if verbs, nouns and adjectives denote different sorts of things. Abandoning the idea that meaning is determined by denotation helps with this concern.

*Lexical aspect* (or *Aktionsart*) is a property of verbs whereby they represent the way the eventualities they describe unfold in time. Lexical aspect gives rise to a natural and cross-linguistically valid classification of verbs; the classic proposal about this goes back to Vendler (1957). He distinguishes four categories: *states*, *activities*, *achievements* and *accomplishments*. States (e.g. *knowing*) are extended eventualities whose temporal parts could be (and are typically seen as) homogeneous. Activities (e.g. *walking*) are also temporally extended but they must have some discernible temporal parts. Unlike states and activities, achievements (e.g. *finding*) can be instantaneous and are seen as culminations of processes. Accomplishments (e.g. *building*) are complex events made up of an activity leading to some resultant state. Vendler presented a number of linguistic tests that classify verbs depending on which of these event types they are true of; Rothstein (2004) has updated the tests and proposed to organize the system according to the distribution of two lexical features. Some eventualities are *telic* (in the sense of having a natural culmination), others are not; some eventualities have *stages* (in the sense of having discernible temporal parts), others do not:

EVENTUALITIES	+STAGE	-STAGE
+TELIC	accomplishment	achievement
-TELIC	activity	State

While there is no consensus about the types of lexical aspect (for a different, equally influential classification see Steedman (1997)) it does seem that verbs and only verbs have this sort of property. This fact is explained by the view that verbs obligatorily denote events, and that we naturally see events as temporally structured. It also explains why verbs are natural loci for temporal reference.

#### 4. Verbs and statements

The idea that verbs signify affirmation has a long history. Here is how *Port Royal Logic* sums up the view and its prime motivation:<sup>15</sup>

“Why is *Petrus vivit* [Peter lives] a proposition, and *Petrus vivens* [Peter living] not one if you do not add “is” to it as in *Petrus est vivens* [Peter is living]? Only because the affirmation contained in *vivit* was removed from it to make it the participle *vivens*. From this it appears that the affirmation that does or does not exist in a word is what makes it a verb or not.”

The obvious objection is that embedded clauses contain verbs but are often not affirmed. The point did not entirely escape the attention of the authors of the *Port-Royal Logic*; they say that in *All philosophers assure us that heavy things fall to earth of their own accord*, the speaker’s affirmation is signified only

<sup>15</sup> Arnauld and Nicole (1662): 81.

by the verb in the main clause.<sup>16</sup> Here one could say that the verb of the subordinate clause signifies the affirmation of all philosophers, but this won't help the view in general. The embedded verb *fly* in *Nobody assures us that heavy objects fly away of their own accord* certainly does not signify anybody's affirmation.

Since Frege, we have learned to distinguish between the *force* of an utterance from the *meaning* of the expression uttered. The suggestion that some element within a sentence encodes the speech act the sentence is used to perform ignores this distinction. In principle we could perform all sorts of speech-acts uttering the very same sentence. And one could even perform illocutionary acts uttering non-sentences. Just imagine a case when it is in dispute whether Peter is alive and suddenly he enters the room and one utters *Peter living* pointing at him. It is a bit quaint, but it does seem like a *bona fide* statement.<sup>17</sup>

So, perhaps we should not say that verbs signify affirmation, but rather that they signify what makes a linguistic expression capable of being true or false. The idea is that without a verb, nothing can express a proposition. This was Russell's view at one time:<sup>18</sup>

“A proposition, in fact, is essentially a unity, and when analysis has destroyed the unity, no enumeration of constituents will restore the proposition. The verb, when used as a verb, embodies the unity of the proposition, and is thus distinguishable from the verb considered as a term, though I do not know how to give a clear account of the precise nature of the distinction.”

Russell says that *difference* is a “verb considered as a term”, not a “verb used as a verb”, and this is why the constituents of the proposition *A differs from B* – which would be *A*, *difference*, and *B* – placed side by side do not reconstitute the proposition. But the real issue is not unity – after all *the difference of A from B* is not a mere list, but an expression exhibiting genuine syntactic unity. It's the kind of unity that matters: without a verb, Russell contends, we cannot get anything that *says* something. Alas, some of the examples mentioned before create a problem for this claim. The embedded clause in *I consider Jill happy* manages to be truth-evaluable without containing a verb.<sup>19</sup> The embedded clause contains the predicate [<sub>PREDP</sub> ∅ [<sub>AP</sub> *happy*]], and this appears to be enough for being true or false.

What distinguishes the verb *live* from the participle *living* and the verb *differ* from the noun *difference* is that verbs are predicates while participles and nouns are not. The syntactic difference presumably corresponds to a semantic one. As Russell correctly suggests, the difference should not be thought of as a difference in denotation, but rather as a difference in the manner in which these words denote. Predicates say something of what they denote, other expressions don't.

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<sup>16</sup> Arnould and Nicole (1662): 95. One might hope that discussion of disjunction and conditionals clears up what Arnould and Nicole think about the signification of embedded verbs. Alas, it does not.

<sup>17</sup> For many more examples of arguably non-sentential assertions see Stainton (2005).

<sup>18</sup> Russell (1903): 50.

<sup>19</sup> If you think that without time determination no proposition can be expressed, take the embedded clause of *I consider Jill happy now*.

It is not clear why expression of a proposition requires a predicate – to say that only predicates can *say* something is not much more than a restatement of the problem. But the connection of verbs to this deep and perplexing issue is at best indirect – verbs are the only lexical predicates in natural languages, so the syntactically simplest sentences in these languages can contain predicates only if they contain verbs.

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