

## THE CLASSIFICATION OF ENGLISH VERBS BY

### OBJECT TYPES\*

by

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ONE of the problems in programming English is the interpretation of verbs with various sorts of noun-objects following them. If, for purposes of information retrieval or discourse analysis, it becomes useful for a machine to be able to distinguish what sorts of transformations can be applied to verbs plus objects or to know how to interpret the syntactic function of these objects (insofar as a machine can make such a determination), verbs must be classified in greater detail and with greater structural accuracy than one can find in traditional English grammar. A machine can be taught, for example, that with some verbs, multiple nouns in object position can only be interpreted as a single noun-phrase consisting of a head noun plus adjuncts (NPhrase). Thus, the verb communicate cannot be an indirect-object verb, and in any occurrence of communicate, the machine dictionary should give instructions to interpret  $N_1 V N_2 N_3$  as  $N_1 V$  NPhrase, rather than as  $N_1 V N_3 P(\text{to or for}) N_2$ ; that is, in the sentence

The corporation communicated the agency demands, agency demands is to be taken as a single object, rather than an indirect plus direct object (The corporation communicated them, not The corporation communicated demands to (or for) the agency).<sup>1</sup> At the same time, the dictionary should provide a statement of the range of classes to which a given verb may belong. This statement will not in itself resolve ambiguities, but it may, by providing a clear statement of possibilities, allow the machine to make a higher order decision. Thus,

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1 Symbols mean as follows: N = noun, V = verb, A = adjective, D = adverb, P = preposition, Ven = past participle, Ving = present participle; subscript numbers are used to distinguish occurrences of forms.

The corporation sent the agency reports is radically ambiguous in English, so that send should be entered in the dictionary as belonging to both the plain transitive (one-object class) of verbs and to the indirect-object class. However, the instruction may further be provided to scan the immediate left-hand environment of  $N_3$ ; if an article is found between  $N_2$  and  $N_3$  the instruction may be given to interpret the verb as an indirect-object verb,

The corporation sent the agency the reports being clearly a transformation of The corporation sent the reports to the agency.

Thus, the value of the statement of class memberships of verbs is manifest. The following is a classification of verbs by object types where the objects themselves are transformationally simple, i.e., are not transforms of sentences.<sup>2</sup>

THE CLASSIFICATION OF ENGLISH VERBS BY  
(NON-SENTENTIAL) OBJECT TYPES

1. INTRANSITIVE VERBS ( $V_i$ ):

This is defined as the class of verbs which can stand alone without objects. Any words which follow a verb of this class are non-relevant modifiers, since they can always be deleted without affecting the structure of the verb.

A. One-word forms.

1. V: He died.

2. V (D): He died violently. He died there.

3. V (PN): Here we must distinguish two sub-types of forms. The first can be called (for lack of a better name) PN of "attendant circumstances"; the second, "directional" PN.

a. V † PN of attendant circumstances. These are characterized by 1) comparative ease of omission of PN, and 2) mobility of PN. The PN can usually be placed in any position in the sentence: He'll pass by Thursday implies By Thursday, he'll pass. The question-word of the question to which the utterance is an implicit response is always adverbial (where, when, why, how, how much), although in a few instances pronominal wh-plus PN (who, what) which are adverbial substitutes may also be implied (e.g., She slept in her bed implies Where did she sleep? but also What did she sleep in?) Any occurrence of verb plus prepositional phrase implying an adverbial question-word, regardless of what-

2 For a statement of verbs whose object-types are sentence transforms, see the paper by Miss Ruth Zeitlin in the University of Pennsylvania Transformations and Discourse Analysis Project series.

ever **other** forms it may imply, will be defined as an intransitive.

b. V † PN of direction. Some PN show motion with respect to some goal and imply the question word where not in its place but rather in its two directional senses, "whither" and "whence". This suggests a similarity to "prepositional-verbs" (see below, p.1); but the difference is that intransitive V † PN always implies an adverbial question-word (or at least one is never totally inappropriate), while prepositional-verbs can only imply pronominal question-words. Thus directional-intransitive He ran into the car implies Where (whither) did he run? whereas prepositional He ran into the car implies What did he run into?

Some examples of directional-intransitives are as follows:

It rose above the mountain ("surmounted")

It floated abreast of the other ship

She looked in the cellar (Whither?)

She dived into the water.

4. N (=PN) =D: There are nouns which function as adverbials. He stayed home. He slept Tuesday. He walked ten miles. (He stayed at home. He slept on Tuesday.)

B. Two-word forms.

These are verbs which do not take objects but which need some sort of completive form to follow them.

1. Adverb-completives.

This sub-class is established by isolating VD's which stand alone where the V separately could not: he cut in (in the sense of "intervene"), but not he cut. (He cut is said "not to stand alone" in the sense that it always presumes an object and therefore is to be taken as an instance of a transitive with object deletion.)

2. Adjective-completives

There are a few combinations of verb plus adjective which have the same structure as the VD types described above. For example, he went hungry, he went mad, the candidate ran scared, etc.

3. Noun-completives.

Clearly, in respect to expressions like he took part, it took place, the fact that passives are impossible and that part and place cannot be replaced by pronouns (nor are the questions What did he take? and What did it take? implied) suggests that the nouns in these expressions can in no way be considered objects.

4. "Cognate" nouns.

A few intransitives allow a noun which is derivationally related to the verb but no other: he slept a deep sleep, he dreamed bad dreams, he thought deep thoughts, etc.

5. It pseudo-objects.

These consist of intransitive verbs which occur with it, where it is

clearly not a substitute for any noun but merely a verb-completive; for example, he footed it, he hoofed it, he beat it, he roughed it, that's going it. etc.

6. Reflexive pseudo-objects.

These are self-pronouns, agreeing with the subject in number and gender, which (a) are semantically, empty, (b) cannot be passive, (c) cannot be replaced by any other object (hence must be completive parts of the verb), (d) are not zero-causatives (see below):

He perjured himself.

He bethought himself.

He absented himself.

2. TRANSITIVE VERBS ( $V_t$ ):

This is defined as the class of verbs necessarily followed by a single N or N-phrase which is not included in any other class. Most transitive verbs allow the passive transformation  $N_1VN_2 \rightarrow N_2$  be V-en by  $N_1$  (whence the "short" transform  $N_2$  be  $V_t$ -en), but with some verbs it is lexically awkward and with others impossible. Thus passivability cannot be held as a necessary criterion for transitivity.

A. Passivability.

Most transitives are passivable. Two kinds of non-passivable transitives can be distinguished.

1. Those taking nouns from broad sub-classes of nouns: become (Blue becomes you), fail (He failed us in our need), last (This will last you a long time), resemble, suffice, suit, make (This book makes good reading), cost, etc.

2. Those taking lexically restricted but non-cognate nouns: he lived the part, he looked daggers, he ran a race (as opposed to the passivable he ran the race, meaning "he conducted the race"), etc. Although the objects are lexically restricted, these are taken as transitives rather than noun-completive intransitives, because the nouns are more like normal objects: they take articles and can be replaced by pronouns.

B. Object Deletion.

It is characteristic of transitives that in certain contexts the object may be deleted. These contexts are very rare for some verbs but quite common for others. We distinguish deleted-object transitives from intransitives by virtue of the fact that implicit questions are not adverbial - for example, "Where (or when) did  $N_1 V_1$ ?" - but always pronominal: "What (or whom) did  $N_1 V_t$ ?" Here are some examples of deleted objects:

He investigated [e.g., the case]

He breathed freely [e.g., air]

Verbs can occur, in class cleavage, of course, as both intransitive and transitive:

He ran: He ran the store

He advanced by slow steps: He advanced his reasons.

C. Transitives with Prepositional Phrases.

There are two kinds of transitive-prepositional, phrase combinations, according to whether the PN modifies the  $N_2$  or the whole verb phrase.

1.  $N_1 V_t \uparrow N_2 PN_3$  :

He watched the woman from City Hall =  
 He watched the woman  $\uparrow$  The woman was  
 from City Hall.

2.  $N_1 V_t N_2 \uparrow PN_3$  ( $\leftrightarrow PN_3, N_1 V_t N_2 \leftrightarrow N_1 V_t, PN_3, N_2$ ):

He watched the woman from City Hall (= From City Hall  
 he watched the woman = He watched, from City Hall,  
 the woman).

D. Zero-Causatives.

These are a sub-class of transitives which participate in the following transformation:  $N_1 V_t N_2 \rightarrow N_2 V$ , He walked the dog  $\rightarrow$  The dog walked, The sun brightened the house  $\rightarrow$  The house brightened, The man rang the bell  $\rightarrow$  The bell rang. (Note the difference between zero-causatives and transitives with object-deletion: The bell rang vs. The man rang.) Other zero-causatives are:

sail	work	stand up	rest	swear in
pass	brighten	fill	retire	boil
fly	darken	open	roll	broil
run	[other A-en]	close	bounce	cook
shrink	grow	burst	stand along	burn
start	sweat	smash	stand next	soak
stop	cool	curdle	tumble	bathe
moderate	warm	dance	tilt	melt
quicken	heat up	float	bleed	freeze
slow down	heal	gallop	marry	thaw
speed up	ring	balance	return	wine and dine
sink	fit	hurry	begin	feed
graze	weary	Jump	end	lead
stick	tire	march		

E. Reflexives.

Most transitives will take a reflexive as a normal object, for example, He hit himself. But a special class of transitives, when the object is omitted, implies not any unspecified object, but specifically the reflexive object ( $N_1 V_t N_1$ -self  $\rightarrow N_1 V_t$ ). These shall be

called reflexive transitives; for example, John dressed himself → John dressed, The girls washed themselves → The girls washed. This can be referred to as an Instance of object-zeroing, rather than object-deletion, since the pronoun is always determinable, whereas in deletion one can never predict which specific noun has been omitted.

F. Reciprocals.

Almost every transitive construction with a plural or compound subject and the object each other will allow the following transformation:

$N_1 \neq N_2 \ V_t \ \text{each other} \rightarrow N_2 \ V_t \ N_1$

$N_1 \neq N_2 \ V_t \ \text{each other} \rightarrow N_1 \ V_t \ N_2$

$\left\{ \begin{array}{l} \text{He and I} \\ \text{We} \end{array} \right\} \text{greeted each other} \rightarrow$

He greeted me. I greeted him.

I greeted you. You greeted me.

But note that the transformation is not reversible:

$*N_2 \ V_t \ N_1 \rightarrow N_1 \neq N_2 \ V_t \ \underline{\text{each other}}$

$*N_1 \ V_t \ N_2 \rightarrow N_1 \neq N_2 \ V_t \ \underline{\text{each other}}$

\*He greeted me → He and I greeted each other.

G. Two-word Verbs.

This subclass consists of verb-adverb combinations taking objects. The characteristic transformation is as follows:

$N_1 \ V_t \ D \ N_2 \rightarrow N_1 \ V \ N_2 \ D$

He ran up a large bill ↔ He ran a large bill up

He ran down the motor ↔ He ran the motor down

Two-word verbs need to be seen in clear contrast with intransitives with prepositional phrases of the two types mentioned above which, of course, do not participate in either of the above two transformations. Compare the following:

*Directional-intransitives*

("Whither")

He ran up the stairs

He ran down the hill

*Place-intransitives*

("Where?")

He ran, up the stairs

He ran, down the hill

3. COPULA VERBS ( $V_c$ ):

This is defined as the class of verbs which take an adjective as "predicate"; the construction  $NV_cA$  implies the possibility of or transformation to an appositive construction, namely  $N,A...$  The A-phrase may consist of A alone,  $A \neq V_t$  in past participial form, or, with

inversion, A-Ving N:

1. The man is wicked → The man, wicked ...
2. He grew hostile → He, grown hostile ...
3. The material feels rough → The rough-feeling material ...

The copula can usually be distinguished from the Intransitive plus predicate appositive on the following basis:

$$N V_i A \rightarrow \begin{cases} N V_i \text{ in an A manner (etc.)} \\ N's \text{ Ving be A} \end{cases}$$

Thus He arose angry → He arose in an angry manner → His arising was angry. But copulas cannot do this: He grew angry → \*He grew in an angry manner → \*His growing was angry. A following N need not take an article, even in the singular, although one may occur: The man is President; The man is a president.

There are two subclasses, as follows: a. Verbs which take both A and N as predicate; and b. Verbs which take only A.

Subclass 1: be, stay, become, remain, etc.

Subclass 1 can occur before the following forms as predicates:

N, A, PN, D, Ven, Ving:

1. A: He is angry.
2. N: He is president.
3. PN: He is in agony.  
She is with child.
4. D: He is up.
5. Ven: He is gone

It is necessary to show contrasts here with passived transitives but it is not clear if there is a general rule. Many transitives seem to operate usually as pure adjectivals in predicate position with no verbal force at all. These are called by Curme "statal" (vs. "actional") forms. In some cases the subject seems to be informative:

V<sub>t</sub> The money was dissipated.

V<sub>c</sub> The man was dissipated.

One way to distinguish Ven-as-V from Ven-as-A is to check adverbs. Very cannot occur with Ven-as-V, nor can many other D's. Perhaps a list of participles which are never or hardly ever A could be compiled on a purely pragmatic basis, and the machine so instructed, for example:

Ven-as-V: The fortress was ruthlessly stormed.

violently

partly

Ven-as-A: The man was very frightened.

completely

hardly

rather

Ving implies the same problem as Ven.

Ving-as-A: She was very entertaining.  
enlightening  
discriminating  
moving

Ving-as-V: \*She was very dancing.  
flying  
walking

Subclass 2: these occur only with A which are in the lexical co-occurrence range for the V and which seem to be more or less idiom-like.

Three types can be distinguished:

1. "Sense" verbs with "middling" properties: feel, smell, sound, taste (but not look which can take an N). These all participate in a Ving-A transformation: It smells good → It is good-smelling, It feels smooth → It is smooth-feeling, etc.

2. Idioms: these are lexically more restricted; they can occur only with a limited list of A, sometimes with only one particular A. For example, The door flew open, They made merry, He ranked second, It shone bright, etc.

3. Others: rest, sit, fall, spring, stand, etc. These can be distinguished from  $V_i$  plus A-appositive phrases because they consist of only one kernel.  $V_i$ 's on the other hand, consist of two kernels. Contrast:

$V_cA$  He fell ill (One may, for example, fall ill while lying down).

$V_i,A$  He fell, ill (He fell † he was ill)

$V_cA$  He stood opposed (He may have been a cripple)

$V_i,A$  He stood, opposed (He was standing; he was opposed).

#### 4. FACTITIVE VERBS ( $V_c$ )<sup>3</sup>:

This class consists of those instances of V in the construction  $N_1 V N_2 X$  where  $N_2$  has a copula relation with the X – the "object complement" or "predicate complement" – which is a nominal or adjectival. Thus, formulaically,  $N_1 V_f N_2 X \leftarrow N_1 V_f (N_2 \text{ be } X)$ , where parentheses indicate a kind of "factor", i.e., although  $N_2 \text{ be } X$  is a component of the construction, it occurs only implicitly in utterances, never actually.

Factitives can be divided into two sub-classes: 1. those which take both adjectives and nouns, and 2. those which take only adjectives.

1. A and N as X:

They made the { airplane ready  
                          { man an object lesson  
They called the { picture beautiful  
                          { man captain.

3. I take the term from James Sledd, A Short Introduction to English Grammar (N. Y., 1959), pp. 211-212.





He looked for his friends' sake: Why did he look?  
(Also, What did he look for?)

V<sub>p</sub> often has one-word synonyms and can occur in construction with an ordinary V<sub>t</sub>, for example, after a conjunction:

He looked for and found trouble  
(looked for = "sought")

In other Instances of displacement, the P will always go with the V:

Emphasis: Thy thoughts I cleave to (but never \*Her sake he looked for)

Interrogation: Whom did he go for? (in the sense of "attack". On the other hand, For whom did he go seems almost necessarily to Imply the V form: For whose sake did he go?)

Relative: I saw whom he went for (again in the sense of "attack". This is never said, I think, I saw for whom he went).

A. Prepositional verbs with Fixed Objects.

There are some V<sub>p</sub>'s with fixed noun-objects (or D) in which the fixed element is best considered as a part of a compound V because the whole phrase is preserved intact in passive transformations (while V<sub>t</sub> with N<sub>2</sub> ≠ PN<sub>3</sub> do not):

V<sub>p</sub> ≠ fixed object: He took care of the trouble ↔  
The trouble was taken care of by him (N<sub>1</sub> V<sub>p</sub>-N<sub>2</sub>-P N<sub>3</sub> ↔  
N<sub>3</sub> be V<sub>p</sub> en-N<sub>2</sub>-P by N<sub>1</sub>)

as opposed to:

V<sub>t</sub> ≠ object modified by a prepositional phrase: He took the car of the manager ↔ The car of the manager was taken by him (never \*The manager was taken the car of by him: N<sub>1</sub> V<sub>t</sub> N<sub>2</sub>PN<sub>3</sub> ↔ N<sub>2</sub> PN<sub>3</sub> be V<sub>t</sub>en by N<sub>1</sub>).

B. Some V<sub>p</sub> are reflexives, because like V<sub>t</sub> reflexives, they can always transform to a construction omitting N<sub>2</sub>:

He gorged himself on goodies ↔ He gorged on goodies.  
N<sub>1</sub> V<sub>p</sub> N<sub>1</sub>-self PN<sub>3</sub> ↔ N<sub>1</sub> V<sub>p</sub> PN<sub>3</sub>

C. V Reciprocals.

Like V<sub>t</sub> reciprocals, these are distinguished in terms of the following transformations:

N<sub>1</sub> V<sub>p</sub>PN<sub>2</sub> ↔ N<sub>2</sub> V<sub>p</sub> P N<sub>1</sub> ↔ N<sub>1</sub> C N<sub>2</sub> V<sub>p</sub> each other

Oxygen combines with hydrogen ↔ Hydrogen combines with oxygen ↔  
Oxygen and hydrogen combine with each other.

## 7. DOUBLE-OBJECT VERBS (V<sub>d</sub>):

These are verbs which necessarily combine two objects with P in the construction N<sub>1</sub> V<sub>d</sub> N<sub>2</sub> P N<sub>3</sub>.

With some V<sub>d</sub> – which we might call "pure" instances – the double-object is so necessary to the verb that neither N<sub>2</sub> nor N<sub>3</sub> may be deleted. Thus,

He based his conclusion on facts.

One cannot reduce this either to \*He based on facts or \*He based his conclusion.

There are, however, other verbs which must be classified as V<sub>d</sub> which seem to allow of PN<sub>3</sub> deletion (or at least their homonyms do). Contrast:

V <sub>t</sub> / PN	He beat the girl out of spite
	He drove the man into town
V <sub>d</sub>	He beat the girl out of her inheritance
	He drove the man into bankruptcy