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The Lexicon-Grammar of English: Support and Operator Verbs

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In the construction of a lexicon-grammar of French, Maurice Gross (1981) introduces the concept of "support" and "operator" verbs. Support verbs indicate tense, person, and number, and carry little semantic content, which is supplied by the following noun phrase or propositional phrase instead. These "light" or "empty" verbs lose something of their original meaning, and serve merely as syntactic support. For example, the following sentences contain support verbs:

(1) *The university (got + went + fell + ran) into the red.*

(2) *Max (got + went + flew) into a temper.*

Note how the verbs of movement, as well as *get*, indicate a change of state, rather than motion, and in the case of *fall* and *fly*, a metaphorical, rapid change of state. Operators are similar to supports in that they convey minimal semantic content. However, they are usually causative, and add an additional argument:

(3) *Overspending (got + put + forced) the university into the red.*

Supports and operators are not limited to verbs of movement (dynamic); they can be stative or durative, as well:

(4) *Annie (was + kept + stayed + remained) in shape.*

(5) *The officer (had + kept) Max under arrest.*

Note that *get* and *keep* are both support verbs (ex. 1, 2, 4) and operator verbs (ex. 3, 5). It should be pointed out that this class of verbs is not limited to BE + PREP + COMPLE-MENT expressions, as in the above examples. Some recent studies on English (Wierzbicka 1982, Staczek 1983, Cattell 1984) have concentrated on the supports *have, take, make, do, give*, etc. followed by a noun phrase (e.g., *have a bath, take a walk, do a dance, give a yell*). Support verbs might also be followed by an adjective (e.g., *go naked*).

The focus of this paper will be on the supports and operators associated with English idioms and semi-idioms of the format:

BE + PREP + C1, where C1 refers to a frozen complement

(e.g., *be in the red, be in a temper, be in shape, be on the ball, be off one's rocker*). In order to study this phenomenon closer, I decided to examine a corpus of 350 American English idioms and semi-idioms of this format. Decisions were made concerning the acceptability of each expression occurring with each possible support and operator, and this information was stored in a binary matrix. As can be seen in the sample table (cf. appendix), a total

of 12 supports and 13 operators were analyzed. If an expression could occur with a particular aspectual variant, a plus (+), indicating acceptability, was assigned. Otherwise, a minus (−) was assigned. The question mark (?) was excluded from the formal representation.

Of the 350 expressions examined, we found that no expression accepted all 25 of the variants tested. The maximum seems to be around 13:

(6) *Ana (was + kept + stayed + remained) in the lead.*
Ana (came + went + got + climbed + jumped) into the lead.
Max's dropping out (put + got + left + placed) Ana in the lead.
The situation kept Ana in the lead.

Some expressions, on the other hand, only occur with *be*:

(7) *John (was + *came + *went + *got + *kept, etc.) in for it.*
**That situation (had + put + got + kept, etc.) John in for it.*

It was also noted that verbs of lesser semantic content (e.g., *get, have, put*) are more productive as supports and operators than those that have more semantic content (e.g., *climb, jump, force*). Using a terminology developed by Ross in the early 1970's we can say that this first group is less choosy, and that the second group is more choosy with respect to the expressions they accept. Figure 1 represents a scale of choosiness for the verbs analyzed. One may perhaps ask if the semantic emptiness of certain verbs helps to make them more productive.

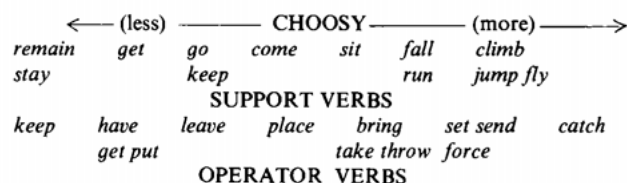| ← (less)		— CHOOSY—				(more) — →		
remain	get	go	come	sit	fall	climb		
stay		keep			run	jump fly		
		SUPPORT VERBS						
keep	have	leave	place	bring		set send		catch
	get put				take throw	force		
		OPERATOR VERBS						

Figure 1: Scale of Choosiness for support and operator verbs.

It has been argued that semantic reasons can explain the acceptance or rejection of particular support and operator verbs. For example, expressions meaning 'in some difficulty' (e.g., *behind the eight ball, in deep water, in hot water, in a bind*) usually use the dynamic support get, rather than go:

(8) *Fred (got + *went) (behind the eight ball + into deep water).*

This is perhaps on analogy with the non-idiomatic usage:

(9) *Mike (got + *went) into some difficulty.*

On the other hand, it can be shown that semantics does not play any categorical role in the distribution of these aspectual variants, and that the set of permissible variants depends on each expression. Consider the three expressions: *in a jam, in hot water,* and *up shit's creek,* which roughly mean 'in some difficulty.' Although none of the expressions allows *go* as a variant, each expression differs in its possible set of acceptable support and operator verbs. Compare:

(10) *Kathy (was + *stayed + remained + was sitting) in a jam.*
Kathy (got + ran) into a jam.
An unfortunate situation (had + put + kept + left) Kathy in a jam.
An unfortunate situation (got + forced) Kathy into a jam.
(11) *Phil (was + stayed + remained + *was sitting) in hot water.*
*Phil (got + *ran) into hot water.*

		SUPPORT VERBS												OPERATOR VERBS													
	ALTERNATE PREPOSITION	COME	GO	GET	KEEP	STAY	REMAIN	FALL	RUN	CLIMB	JUMP	FLY	SIT	HAVE	PUT	GET	KEEP	SET	BRING	TAKE	SEND	LEAVE	PLACE	FORCE	THROW	CATCH
IN THE DOGHOUSE		–	–	+	–	+	+	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–
IN THE DOLDRUMS		–	–	–	–	+	+	–	–	–	–	–	–	+	–	–	–	–	–	–	–	+	–	–	–	–
IN THE DUMPS	INTO	–	–	+	–	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE HOLE (1)	INTO	+	+	+	+	+	+	–	+	–	–	–	–	+	+	+	+	–	–	–	–	+	+	+	–	–
IN THE HOLE (2)		–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE KNOW		–	+	–	+	–	+	–	+	+	+	–	+	–	–	–	–	–	–	–	–	+	–	–	–	–
IN THE LEAD		–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE MONEY		+	+	–	+	–	–	–	–	+	–	–	+	–	–	–	–	–	–	–	–	+	–	+	–	–
IN THE PINK		–	–	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE RED	INTO	+	+	–	+	–	–	+	+	+	–	–	+	–	+	+	+	–	–	–	–	+	+	–	–	–
IN THE RIGHT	INTO	–	+	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE RUNNING		–	+	–	+	–	–	–	–	+	+	–	+	–	+	–	+	–	–	–	–	+	+	+	–	–
IN THE SADDLE		–	–	–	+	–	–	–	–	+	–	–	–	–	+	–	+	–	–	–	–	–	–	–	–	–
IN THE WRONG		–	+	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
IN THE WAY		+	+	–	+	–	–	+	–	–	–	–	–	–	+	–	–	–	–	–	–	+	–	–	–	–
IN AT THE KILL		–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	+	–	–	–	–
IN FOR IT		+	+	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–
OF AGE(1)		+	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
OF AGE(2)		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
OF NO AVAIL		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
OF SERVICE		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
OF SOUND MIND		+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
OF USE	TO	–	–	–	–	–	–	–	–	–	–	–	–	–	+	–	–	–	–	–	–	–	–	–	–	–

$N_0\ V_{sup}\ PREP\ C_1$

$X\ V_{op}\ N_0\ PREP\ C_1$

IN THE HOLE(1) = 'a score less than zero'
IN THE HOLE(2) = 'in debt'
OF AGE(1) = 'legal age'
OF AGE(2) = 'fully developed, mature'

APPENDIX: Sample from $BE + PREP + C_1$

Support & Operator Verbs

That situation (had + put + *kept + *left) Phil in hot water.
The situation (got + *forced) Phil into hot water.
(12) *Max (was + *got + *stayed + *remained + *ran + *was sitting) up shit's creek.*
*The situation (had + put + got + kept + left + forced) Max up shit's creek.

Since three semantically similar idioms each accept a different set of supports and operators, we have to conclude that semantics does not play a categorical role in their distribution.

Furthermore, the fact that these two groups of verbs, and no others, appear with these idiomatic expressions suggests that they must be related in some way. This can be formally expressed as:

$$^{N_0}V_{sup} \text{ PREP } C_1 \Leftrightarrow X \text{ } V_{op} \text{ }^{N_0}\text{PREP } C_1$$

where V_{sup} and V_{op} refer to the classes of support and operator verbs.

In conclusion, we note that some support and operator verbs can be used with a wider class of expressions than others, and that along with a sense of semantic well-formedness, is also found an unpredictable variation. Thus, the most reliable method of presenting such data would be in a lexicon-grammar (cf. Gross & Vivès 1986), where linguistic data are represented in the form of binary matrices, and where rules and conditions of application represent one notion, rather than two, as in many other theories of grammar.

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Zur logischen Explikation von Präsupposition und Negation mittels Funktorenvariablen
— Thesen —

Ingolf Max
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1. Präsuppositions- und Negationsphänomene der natürlichen Sprache und die Möglichkeiten ihrer theoretischen Darstellung sind ein heftig umstrittenes Thema von Linguisten, Logikern und Sprachphilosophen. Gewöhnlich wird davon ausgegangen, daß die klassische Aussagenlogik (zweiwertig und extensional) aufgegeben werden muß, um derartige Phänomene logisch darstellen zu können. Indem die Sprache der Aussagenlogik um Funktorenvariablen erweitert wird, gelingt es im Rahmen der klassischen Logik, plausible Resultate bezüglich der genannten Phänomene und darüber hinaus eine neue Sicht auf natürlichsprachliche Konnektive zu gewinnen (vgl. [1] S. 80ff. und [2]).

2. Die Sprache der klassischen Aussagenlogik läßt sich um Variablen für klassische Aussagefunktoren — kurz Funktorenvariablen (Abkürzung: FV) — als neue syntaktische Kategorie erweitern. Der Definitionsbereich dieser Variablen ist nicht nur auf Aus-