Verbs of Flying in Pilots' Language:

A lexico- Semantic Study

Assisst. Prof. Khalil Ismail Rijiya (PH.D)

Instructor. Amthal Mohammed Abbas **(**PH.D)

College of Education-Al-Assamee/ Diyala University

الملخص

في هذا البحث، يتم تحليل عدد من الافعال التي يستخدمها الطيارون بشكل قصدي . وسيتم ايضاح ان التراكيب المفرداتية لهذه الافعال تتغير بطريقة ما بحيث ان بعض الصفات الخاصة، مثل + - امتلاك القوة وكذلك + - تماس بالارض ، تصبح ذا أهمية . و هذا يعطي هذه الافعال معنى خاصا قريبا من المعنى العام المستخدم يوميا وبنفس الطريقة التي يتم السيطرة على حركة الطائرة والتي له علاقة بالحركة الطبيعية للاشياء والناس . هذا التحليل يبين أن اللغة التي تستخدم لاغراض خاصة إنما تستند الى رؤية علمية للواقع مثلما تستند اللغة بشكل عام الى الفرضيات والمعرفة الموسوعية لمستخدميها .

Abstract

In this paper a number of verbs used internationally by pilots are analyzed. It is shown that their lexical composition is changed in such a way that special features (like+/ - own power, +/- contact to the ground) become important. This gives the verbs a special meaning which is related to the general meaning of every day usage in the same way in which scientifically planned and controlled movements (of a plane) are related to natural movements (of people and things). The analysis is to show that language for special purposes rests on a scientific view of reality in the same way as general language rests on every day assumptions and encyclopedic knowledge of its users.

Introduction

The following account is intended as a contribution to the discussion on special language. For this purpose it deals with a variety of English generally employed today in commercial flying; it also provides a particularly clear example of English used as a world wide lingua franca. Thus, the language of pilots presents the case of "English for a special purpose in universal use". It is from this variety that certain verbs of movement have been selected for closer study.

Componential analysis serves as the linguistic method or model chosen to follow the detachment of a specialists vocabulary of ordinary usage. However, prior to the analysis, a brief discussion of the methods to be applied is necessary.

From what has so far been said it should be obvious that the following account centers around the fields of semantics and lexicography. Obviously, it can be no more than a contribution to the phenomenon of special language.

For a start, special language is understood to be a "variety" to which differentiating criteria are applicable, such as those developed by Gregory (1967). According to these it is a diatypical variety with the "purposive role" specific and "the toner of discourse expository" or functional. Among the "users" medium relationship to be concerned are: conversing, monologing, speaking of what is written to be spoken and speaking of what is written to be read, and therefore also writing for reading. Special languages can be captured by diachronic, diatopic and diastratic models. In other words, special languages can be found at

varying phases of linguistic history (e.g., special languages), as regionally diverse dialects (e.g., the specific employment of language by airlines in Europe and the USA), and as socially determined linguistic usage (e.g., as is the case for theoretical and workshop languages).

A further distinction between ordinary language and special language is that the latter refers to details and formulates propositions which not every user of a language can be expected to understand (Hullen, 1992).

1.Word meanings: componential analysis

The method of componential analysis, or the construction of a configuration of features for the presentation of the meaning (s) contained in a word, is generally accepted today within the field of structural lexicosemantics. This requires emphasizing for two reasons: first of all, componential analysis was introduced in 1963, by Katz and Fodor in a highly important article which set out to fill the semantic gap in the descriptive model of transformational grammar (at that particular moment). Its affinity to methods of lexicographical definition and proof, already noted by Bolinger (1965), resulted in the maintenance of componential analysis even outside of the generative transformational model, within whose framework it had originally been placed. The second point is that, although from early on criticisms have been made of it (Bolinger 1965) which have up to now remained unrefuted, the vitality of the model has not suffered fundamentally. On the contrary, it has been extended to further areas originally outside its scope, e.g., the description of historical language change, the problems of language

acquisition, and foreign language teaching methodology (Clark 1973, Noth 1979).

One of the most frequently leveled criticisms concerns the number of features necessary for the definition of a word's meaning (s). If componential analysis is to be considered as a transference to semantics of the conception of distinctive features as developed by Jacobson, Halle and others for phonetic / phonology- which is justifiable from a historical perspective of linguistics- then it has to be noted that componential analysis has not achieved what it has in phonemic analysis, i.e., a description of a diversity of phenomena through the combination of a self-contained, limited and fixed stock of features which conforms to the postulate of simplicity upheld by scientific theory.

A great number of features are required in order to describe the meaning (s) of a word, no matter whether it is concrete or abstract, simple or complex. A part from a few sub categorical terms (like "+/_ count", +/_ human," " +/_", etc) there exists unified stock of features applicable to all lexical meaning. Thus, it has become common practice in analyses to present those subcategories which are always valid and leave possible further features to the imagination of the reader. However, it is precisely these further features which are of interest to the lexicologist.

Another problem of defining the meaning (s) of a word by means of configuration of its features results from the fact that words are defined to a great extend by the meaning of other neighboring words. Thus, what is needed to define the meaning of a word is the total addition of these features- a process which can be continuous because of the

general, netlike links within the vocabulary of a language. In fact, the meaning of every single word in a language in other words; the possibilities for its use are to a certain degree codetermined by all the other words of the language.

Linguistic research employing componential analysis has in most cases tried to bypass this problem by investigating either lexical fields which are related to a strictly systematized sphere of reality (kinship terms, hierarchic terms of authority, personal pronouns) or polysemic words (bachelor, chair) (Nida 1963, Katz and Fodor 1963). In both cases, the number of necessary features have been limited, either by means of a present onomasiological order or a rigorous limitation of the words to be described to just one lexeme.

This clearly points out the area where componential analysis is actually practicable and its method least open to attack: when the meaning of words are compared. Here it is not a case of the description of a meaning via a hierarchical configuration of features; it is much more the case of comparing two or several meaning contained in a word by means of opposing features. This procedure is as with minimal pairing in phonology, clearest of all where the meanings of a word differ by only one feature.

Of course, a comparison of the meanings of words by means of componential analysis is based on the reduction of the features considered to those which stand in opposition to each other in different lexemes or in different reading of a polysemic lexeme. Since these can still be frequent in many instances, a second methodological reduction is conceivable according to which only those for the comparative

description of lexical meaning are selected which are significant in a particular aspect.

What now follows is an investigation of certain verbs of movement occurring in the English of pilots according to the method just described. The scope of their meaning is given in dictionary definitions and contrasted with the scope of meaning of the same word in ordinary usage. Certain features will be isolated which clarify important oppositions between the use of words in ordinary and special language.

2.The Verbs

In the following presentation of definitions, G indicates the meaning in common language use as given in the Oxford Advanced Learners Dictionary of Current English; P indicates the meaning in pilots' language, according to Weidmann (1975).

To taxi

G: ride in a taxi.

P: movement of an aircraft under its own power in contact with the earth, than when taking off or landing (Weidmann 1975: 11).

(References to Weidmann will hereafter be indicated by W, followed by the page number, thus: W:11).

To roll

G: move along on wheels or by turning over and over, frequently without a fixed direction or aim.

P: movement of an aircraft under its own power of contact with the earth, either with increasing speed for take off or with decreasing speed after touchdown (W: 10).

To take off

G: (lift and) remove to another position.

P: upward movement of an aircraft under its own power by which it Loses contact with the earth (W: 53).

To climb

G: go or get up.

P: upward movement of an aircraft under its own power in the air at an angle which is determined by technical limitations and safely regulations (W: 11).

To cruise

G: sail about for pleasure; (of cars) travel at the most economical speed.

P: level movement of an aircraft under its own power in the air (W: 11).

To drift

G: to be carried along by some external force (like a current of air or water) and thus move without aim or self control.

P: level movement of an aircraft in the air sideways away from its course under the force of wind (W: 28).

To crab

G: catch crabs

P: level movement of an aircraft under its own power in the air sideways in order to neutralize drift and stay on course (W: 28).

To descend

G: go or get down.

P: downward movement of an aircraft in the air at an angle which is determined by technical and safely regulations, either under its own power or under the external forces of gravity and inertia (W: 13).

To dive

G: go head first into (under) water.

P: downward movement of an aircraft under its own power or under the external force of gravity, with increasing speed (W: 13).

To sink

G: move down (below the horizon or the surface of liquid).

P: downward movement of an aircraft in the air under its own power or under an external force with the risk of dangerous results (like crashing into other planes, touching the ground, etc.) (W: 15).

To let down

G: put or take down, lower.

P: downward movement of an aircraft in the air under its own power by which it descends from its initial approach altitude to the final approach altitude. (W: 17).

To touch down

G: touch the ball on the ground (in Rugby football).

P: downward movement of an aircraft by which it establishes contact with the earth, either under its own power or under the external forces of gravity and inertia (W: 10).

3.Comparative Componential analysis

3.1 Opposition +/_ own energy

All the verbs listed contain the feature "movement with one's own/ without one's own energy":

Table (1) Verbs with and without own energy

+ own energy	_ own energy
taxi	
roll	
take off	
climb	
	drift
crab	(descend)
descend	sink
dive	dive

let down touch down	(touch down)

Cruise / drift , crab / drift and descend / sink constitute a contrast with regard to this feature for they demonstrate plane movements which can be differentiated by the opposition " with own / without own energy" but which otherwise share the same fundamental characteristics. In a comparison with the ordinary verbal meaning three semantic relations are discernible: correspondence, relflexible marking and reshifting.

3.1.1Correspondence

With regard to the opposition feature considered here, the meanings of cruise, drift, dive, let down, and touch down occurring in the language of pilots and in general usage correspond to each other.

What is interesting here is the fact that the first three verbs have been taken from the language of sailors, in other words another special language which like that of pilots has to describe types of movements not found in natural circumstances, that is to say, on land.

The common element for let down is " cause to [come down / sink]". For example:

(1)He let the flag down.

(2)When approaching a strange field, enter the airport zone throttled back to slow speed and letting down in a gradual descent.

The same common element " cause to [touch the ground]" also links both meanings of touch down, which itself does not exist in colloquial speech but is only used in Rugby football.

3.1.2Reflexive marking

In ordinary language, a number of verbs can be constructed with a subject either as a gentile / instrument or as dative / objective.

Roll: (3) The man rolled the barrel into the yard.

(4) The coin fell and rolled under the table.

Climb: (5) The boys climbed (up) the maypole.

(6) The flag climbed up the mast.

Descend: (7) He descended the stairs.

(8) The road descended steeply.

Sink: (9) They tried to sink the post one foot deep in the ground.

(10) The sun was sinking in the west.

In the two types of usage the verbs mark (in the first example of each pair) a movement caused by energy (person), and (in second example of each pair) a movement experienced by an object (person) without the cause being stated or even considered at the time.

In the language of pilots, the first of these two ordinary types of usage is produced in a manner typical or technical machines, where the difference between a genitive / instrument and dative / objective is completely dissipated. The person who causes the movement is always

the pilot using the power unit longings as instruments in such a way that energy is produced, which in turn makes the plane perform (quite definite) movements.

(11) Under certain flight conditions it is true an airplane will climb when the elevator raised and dive when it is lowered.

With regard to the cause of plane movements the sentence could be reformulated as:

(12) Under certain flight conditions it is true the pilot will cause the airplane to climb when the elevator (as part of the steering system / instruments) is raised and he will cause it to dive when it is lowered.

Since, however, the plane and its driving or steering gear, including the pilot inside it, are identical in the sense that they are made to perform certain movements by the actions of the pilot and the functioning of the system itself, there arises a semantic relationship in which the self_ induced movement of a released / releasing force is expressed: the pilot causes the engine to move to plane with the engine and the pilot.

The distinction between verbs in the language of pilots which describe movements with or without intrinsic energy leads to such simple statements as:

(13) The plane took off ten minutes past schedule having to be understood as:

(14) The pilot caused the engine to take the plane (with the pilot and the engine) off….

even though this may not be conscious when it is actually uttered.

The semantic structure of sentences such as:

(15) The plane took off,

and

(16) The plane crashed

is exactly differentiated in this way. The second part of sentence (11) is open to several interpretations for this same reason. Since dive can describe the descent of a plane which is induced and steered but also a descent resulting from loss of control, it is not possible to recognize from a mere wording of the sentence whether it means "an airplane will be caused to dive" or " an airplane will dive".

The semantic structure of sentences with verbs containing the feature " + own energy" is called " marking" because it selects one possibility out of two in ordinary linguistic usage; it is called " reflexive" because with the marking an identity of a gentile / instrument and dative / objective is implied.

Take off can also be included in this group, although the verb can only be constructed in colloquial language with a subject as a gentile. For example:

(17) I took off my hat to the president. But not:

(18)* My hat took off.

On the other hand, the important identification of genitive and objective occurs in the language of pilots. This reflexive marking has already appeared in colloquial speech (or the special language of sport) in the particular sense of take off as " start running in order to jump".

3.1.3Reshifting

The verbs take off and touch down correspond to each other in both general usage and pilots usage in so far as they show the transition from one state to another. However, a reshifting of the distinguisher also occurs here. In ordinary language take off describes a movement from one place to another without the process of separation from the ground, which is an important factor for the language of pilots. Touch down describes the fall of a ball as a move in the game of Rugby football without the transition from air to ground being important, while in the language of pilots it is this transition that presents the decisive feature of the movement. (The ball in football, of course, immediately bounces back again).

3.3 Opposition + / - telic

Telic verbs (Garey 1957) describe procedures or actions which in their nature are directed towards an aim and thereby a new occurrence, a new action, or a state not yet existing. A crossover (of frontiers) takes place between the action described by the verb and its aims. For example, telic verbs are drown (vs. be dead), arrive (vs. be there), or travel (vs. arrive). They can be combined into action chains where every verb describes a phase of an entire occurrence

(leave → go → arrive be there). Atelic verbs are , for example ,know ,consist of , love, actually , it is frequently the surrounding construction, especially the associated nominal phrases, which determines whether a verb is telic or atelic in character, as in play the piano (atelic) vs. play a (certain) concerto, smoke (atelic) vs.

smoke this wonderful cigar, walk (atelic) vs. walk to the end of the road, etc.

for these reasons the acknowledged of the feature " + / - telic" is not abstractly determinable for many verbs. There is probably a significant frequency with which one or the other of the constructions appears.

In the language of pilots two groups of verbs can be found employed in a predominantly telic or atelic manner.Table (2) Verbs employed in a predominantly telic and atelic manner

+ telic	- telic
roll take off climb descend dive let down touch down	taxi cruise drift crab sink

In the language of pilots the

verbs roll → take off → climb → and descend → roll describe a characteristic formation of phases within the entire procedures start and landing. Dive also only appears as a phase (such as between cruise and rotate) which is directed towards an aim. In ordinary language roll, climb, descend are not made specific with regard to " + / - telic; in the language of pilots they are essentially employed in a telic manner. Take off and touch down are also generally telic.

Furthermore, the verbs occurring in the language of pilots which are used in a telic manner describe a function of phases which only make sense in this context. The sentences:

(19) The X rolled along all right, but did not take off.

(20) The X took off, but failed to climb.

(21) The X descended all right, but failed to touch down (= but crashed).

Only make sense when it is understood that X = plane.

In the same sense let down can only be employed as an exactly described phase of the landing maneuver between initial approach and final approach.

4.The opposition + / - normal

The verbs of movement under investigation lie in five semantic relations to each other in ordinary language and in the language of pilots with regard to the three oppositions " + / - own energy, " " + / - ground contact, " + / - telic.," these relations were called:

(1) correspondence (symbolized by " + " in the following table (3)).

(2) Reflexive marking (R)

(3) Reshifting (M)

(4) Telization (and phrasal inclusion) (T)

Depending on the number of the diverging items, that is all items without "correspondence", one can draw up three groups of verbs with one, two or three groups of verbs with one, two or three points in meaning where pilots' use of the verbs differs from ordinary language.

Table (3) Verbs with / without own energy, with / without ground and with / without telic.

+ / - own energy		+ / - ground contact	+ / - telic
Cruise	+	M	+
Drift	+	M	+
Dive	+	M	+
Let down	+	M	+
Touch down	+	S	+
Taxi	S	M	+
Take off	R	S	+
Crab	S	M	+
Sink	R	M	+
Roll	R	M	T
Climb	R	M	T

Descend R	M	T

More important than this quantitative analysis is the observation that the differences between special and ordinary language obviously have special and ordinary language have internal links in the observed semantic positions .They are determined by the reality of "movements before , during , after flying .Flying is determined by the forces of gravity vs –propelling power and through the events which are separately determined by technology of the machine ,as well as the illustration and organization of the total infrastructure (e.g airports).the special meanings of the verbs separate themselves semantically from their ordinary meanings where the events of flying differ from those of earthbound movements .

Furthermore , all verbs of movement in the language of pilots also take the additional feature " + / - normal " in so far as flying (+ normal) also always involves the risk of an (+ normal) also always involves the risk of an accident (-normal) .All the selected verbs describe "+ normal " that is to say , events which do not connote danger and are especially linked to the functioning of one's own propelling or steering power . This is also the case with verbs such as dive , drift and sink , which can , of course , develop in to something dangerous (- normal) .Expressions with the feature "-normal " (approach , near miss , overrun , side slip , crash , etc .

It is from the internal conditions of the reality of flying that there arises the great number of verbs which the language of pilots counties for

procedures such as steering , controlling , using (an instrument) , twining on (e.g. . actuate , check , control , engage , operate , select , set , steer , switch on / off , etc) .

Conclusions

There now exist numerous studies which analyse special languages in terms of all their sings (Sager , et al , 1980) . In this way differences from everyday language have been noted on every linguistic level , such studies are valuable and quite indispensable for practical study (specialist dictionaries , translations , terminological services) . Nevertheless , they are unable to capture the ultimately decisive linguistic difference between ordinary and special language , since no clear division between the two can be made in the linguistic system . The decisive difference is to be found rather in what has been called indexicality .

Every linguistic utterance depends on certain conditions of communication . These are established in our encyclopedic knowledge of the world , and they surface in individual utterances generally when the validity of his encyclopedic knowledge of the world has been supposed for a specific statement the understanding of an utterance rests at any given time on the listener / reader perceiving semantic hints and linking these together into a whole which makes sense when compared with everyday experience of reality .Such indexicality of language was already well known with regard to deistic word classes (pronouns , adverbs of time / place , special verbs) . Ethnomethadology and symbolic interactions (Garfinkel , 1967 ; Mehan and Wood , 1979)

have , however , demonstrated that this is , in fact , a universal characteristic of language .

Because of the nature of general encyclopedic knowledge of the world , it follows that linguistic communication contains semantically uncertain parts presupposed by the speaker / writer and supplied by the parts relate to the general experience of reality , culturally specific suppositions , the social background of those communicating , their biography , their mutual knowledge of each other the circumstances of communication , etc .

Special language requires indices to reality in the same way as ordinary language . The former only differs from the latter in as far a professional view and encoding of reality . General conceptions are replaced by a corpus of knowledge and skills which are accessible to exact definitions and objectives often constituting parts of a logically structured system . A special language is , a part from possible differences in the system , different from ordinary language in that it is linked to an experiencing of reality which it self is determined by scientific axioms , hypotheses and deductions .

This basic difference between ordinary language and special language becomes particularly transparent when special languages base themselves on a reality , the inner conditions of which differ from those of naturally experienced reality . This occurs , for example , in sea and air travel . Movements occur here which are not accessible to matter – of-course experience of the world but which have to be described exactly , and the extent to which they can be manipulated has to be fixed .

The analyses of the verbs occurring in the language of pilots can show with just a few semantic features of a selected group of movement verbs how the relation of a special language to the particular reality underlying it is encoded and how this relation can be described if the method is controlled .The decisive difference between ordinary language and special language is not whether one world or other is common or not , nor whether one particular grammatical construction is preferred , nor the occurrence of one particular stylistic level , but the decisive difference lies in the special indexicality which characterizes a specialist text .

Notes

(1) Thus milk is analyzed as [+ noun + common + concrete , -count , -animate , + fluid , -plural] e.g. . , in Lapalombara (1976 : 342) .B. But what about "white" , "untritious" , "food for babies " produced by human or animal females " , metaphoric for "kindness " , etc ? For a general discussion see Lyons (1977:317 -55) .

(2) The verbs descend and touchdown with "-own energy " will not be investigated further and have thus been enclosed in brackets. Indeed ,plans can descend and make a landing (touch down) with power off , but this is not the same feature as given in drift , sink and dive (without the plan's own energy) .The latter movements happen against the will of the steering pilot ; descending and touching down may be practiced without the plan's own energy , but not without the pilot steering and exploiting the forces of gravity and inertia .

(3) Many other verbs could have been chosen , like approach , head, pitch , roll (in the air) , rotate , slip ,yaw .

References

Bolinger , D.D (1965) "The atomization of Meaning". Language 41 :555-573.

Clark, E. V. (1973). "What's in a word: On the child's acquisition of semantics in hill first language." Cognitive Development and the Acquisition of Language, 56-110.

T.E. Moore (E.d). New York: Academic Press.

Garey, H.B (1957). " Verbal aspects in French." Language 33: 91-110.

Garfinkel, H. (1967). Studies in Ethno methodology. New Jersey: Prentice- Hall, Inc.

Gregory, M. (1967). "Aspects of varieties differentiation". Journal of Linguistics. 3: 177-198.

Hullen, W. (1992). "On and describing special language. Form and Function of Language: Festschrift fur Vilem Fried. J. Esser and A. Hubler (Eds) Tubingen: Narr.

Katz, J.J and A. Fodor (1963). " The structure of a semantic theory." Language 39. 170-210.

Lalombara, L. e (1978). An Introduction to Grammar: Traditional, Structural, Transformational. Cambridge, Mass: Winthrop publishers, Inc.

Lyons, J. (1977). Semantics I. Cambridge: Cambridge University Press.

Marchwardt H (Ed.) Ann Arbor, Michigan: English Language Institute, University of Michigan Press.

Mehan, H. Wood (1967). The Reality of Ethno methodology. New York: Wiley.

Nida, E. A. (1963). " Linguistic and semantic structure." Studies in language and Linguistics. In Honor of Charles C. Fries, 13-33. A.

Sager, J. C. et al. (1980). English Special Languafe: principles and practice in Science and Technology. Wiesbaden; Oscar Brandstetter.

Weidmann, U. (1975) Fliegersprache. Schweizeizeriche Anglistische Arbeiten, Vol-85 Bern: Francke.