JENNIFER DRASKAU: A VALENCY-TYPE ANALYSIS OF FOUR MONOLEXICAL VERBS AND TWO POLYLEXICAL VERBS IN ENGLISH LSP TEXTS FROM TWO SUBJECT FIELDS; MARINE ENGINEERING AND VETERINARY SCIENCE:

(part of a paper presented at the BAAL seminar on Translation held at the University of Surrey, July, 3-5, 1986).

Reason for selection of corpora - the areas and the objects of study

The subject fields were selected because in both of them knowledge and information, at both first and second hand, were readily available. The verbs were: ATTACK - EXCITE - DETERMINE - LAY (LAY DOWN) (LAY UP). The verbs were selected, firstly, because they occurred with sufficient frequency in the corpora (in both subject fields) and, secondly, because they were of the appropriate type for study: Verbs in LSP may be roughly classified as follows:

- those with little or no specifically LSP content, which do not appear to be subject to change or to processes of terminologization, e.g. "is" (content-empty copula): "occur" invariable:
or which are of themselves terms e.g. "weld", "sinter" (less interesting for this study)

or which exist in the twilight zone. These verbs sometimes undergo appreciable changes through collocation with a verb, but sometimes they do not.

The two polylexical verbs compounded from LAY plus preposition, were selected because phrasal verbs in English constitute a special group. In (otherwise interesting) work on LSP collocations, some linguists have fallen into the trap of describing English phrasal verbs as collocations (Faber, 1983). In reality a phrasal verb must be thought of as a single lexical unit, in that:

- it can enter into collocations with another item (in LSP, a term)
- its meaning may be different from the sum of the meanings of its morphological components in isolation (e.g. "turn out" + "light" = extinguish) permitting it to be replaced by a mono-lexical synonym or translated by a single item in another language
- e.g. turn out + light = (FR)éteindre + lumière, (DA) slukke + lys;

The parts of a polylexical verb may combine to create compound adjectives, etc., e.g. sit-down strike, landing and take-off techniques, etc., or nouns: hoe-down, fry-up, etc.

Most of the particles are, or may function as, place adjuncts.

Syntagmatic relationships were treated by the generative transformational grammarians as helping to form selectivity restrictions which predict the potential collocability of lexemes. This rigid and rather artificial theorising has in its most extreme form fallen into disrepute - understandably, since it is not a question of whether you CAN say "Green dreams sleep furiously" - clearly, since the language is capable of generating a grammatically understandable string, such strange desires on the part of
language users can be catered to; the question is, why anyone should want to, and whether understanding receptors would be found. It is not the "potential collocability of lexemes" that is under fire, but the sender's message and communicative intention.

We can, however, go so far as to agree, with Faber, that collocability, or, as we prefer to put it, the observed collocational tendencies, differ for LSP and LGP, and with Cowie (1981:232) that "lexical units are complexes of various kinds more often than the traditional organization of the dictionary has prepared us to believe or reductionist images of the lexicon encouraged us to suppose".

Method and procedure of analysis:
For the analysis an adapted Valency method was employed. Discourse-level phenomena such as "fuzzy" lexical sets, polyptoton, Widdowson's "signification" and "value" meanings, were taken into account.

Monolexical verbs: Excite: Definitions:

**EXCITE**: Of the definitions in the dictionaries consulted, Webster 4 and 5 ("electricity" and "physiology") and Wyld, 2,a and b, are patently LSP explanations, with indications of the appropriate subject fields and suggestions of slight or considerable variations in meaning connected with occurrence within the subject fields.

Of the examples studied, 80% of the occurrences of "excite" were of the type shown in Appendix Nos. 1 and 2, etc. Passive voice, impersonal subject, therefore monovalent (one single "Mitspieler" or actant. Despite the patently LSP nature of the macro-context, and the presence of terms - "adrenalin", etc., - in the immediate environment, Webster's example under definition 1, "the injections of adrenalin excited the rats", and example 5 "it excited her", are automatically classified by the Receptor as belonging to LGP usage.

The value meaning (i.e., meaning in the context, in Widdowson's terminology) may be expressed in the situational synonyms with the actants:
1. + "blade" = "energized"
2. + "mode of vibration" = "produced"
3. + "critical mode" = "produced"
4. + "vibration" = "produce stressing" + gear casing (+ negative, intrinsic)
5. Not LSP
   Kernel LGP signification = cause to feel emotion of excitement
6. Participial adjective.
   Exists as a verbal form but not in the limited corpus studied
7. heart muscle + "stimulate"
8. Voluntary movements + "produce" + distress

Abstraction level of actants:

In all LSP examples, at least one of the "actants" or "Mitspieler" are concrete, whereas LSP phrases of the type:

- Her flirtations excited his jealousy
- Her beauty excited comment, admiration, etc.
- Tyranny excites revolts

are current. However "Deep" structure reveals a human actant, i.e. "jealousy", "comment", "admiration", are not "recipients" of the action: -

Her flirtation caused (him (to be) jealous
Her beauty made (people) (to) comment
Tyranny makes (people) (to) revolt

Conclusion:
The "deep structure" of LGP sentences including "excite" contains, implicitly or explicitly, an animate subject capable of experiencing the sense of excitement; this subject is the "goal" of the action.
In LSP environments "excite" occurs both in an LGP sense e.g.- "the adrenalin injections excited the rats -" with (explicit) animate actant as "goal of action and in LSP senses:

- Vibrations will excite the gear casing - "cause stresses in".

"Excite" as an LSP verb has undergone changes through the nature of its actants, one of which is required to be concrete.

**DETERMINE:** Special fields of law and logic are referred to in the Definition. In 50% of the examples studied, "determine" occurred in the infinitive; in every case but one, an active infinitive. In finite occurrences, the voice was active in 21% of instances, 79% passive.

A more pronounced tendency towards divalence was observed in the Marine Engineering Corpus, with statement of agent even in passive constructions.

In some 80% of cases, "determine" might have been replaced by "ascertain" without distortion of value or seepage of meaning. In the cases where it was not synonymous with "ascertain", "determine" had the sense of "governed" (ex. 10), "reached" or "fixed as". The elements of decision-making and resolve are markedly absent; none of the actants - except for "personnel" (ex.2) - was human. Elsewhere, an implicit human agent is understood from the context. The uses of determine - an extremely frequent verb in LSP environments - exhibit a remarkable increase in semantic stability in LSP usage.

**ATTACK:** Of the definitions, Webster's 4 and Wyld's 4 are classifiable as LSP meanings.

Specific subject actants suggested are disease, the elements, chemicals.
The LGP uses of "attack" (meanings 1-3 incl.) require:

a) an **animate subject** capable of (or, by anthropomorphic extension, supposedly capable of) animosity, vindictiveness, laudable or nefarious intention, etc., viz.: Webster, 1. "in order to harm" - 2. "unfriendly words" - "attempt to bring into disrepute" - etc. (subject capable of rational and constructive thought processes, e.g. homo sapiens). 3. To begin to perform energetically - (Typically, human subject): Wyld, 1. "With intent to cause injury to", 2. "hostile speech", etc., 3. To set to work, etc.

b) an object or recipient of the action (Webster defines the notion of transitivity in terms of explicit, surface level syntactic criteria. From the semantic point of view, attack (v.i.) is a sentence-level variant of "attack vb trans" with unstated subject e.g. "the troops were ready to attack" (understood "the foe", etc.).

In LGP uses of "attack", the direction of the action is potentially chiasmic - i.e., lends itself to logical reversal in meanings where both the actants are animate and therefore capable of retaliation.

e.g. The Leftists attacked the Prime Minister, the Prime Minister attacked the Leftists.

But not: John attacked his lunch with gusto
John attacked his maths homework
? John was attacked by a qualm of conscience
? His lunch attacked John with gusto

or even
? John’s maths homework attacked him
? A qualm of conscience attacked John

(with operation of cohesion-promoting pronominal-nominal reversal to increase comprehensibility).

"Attack" in LGP appears to require an animate actant. But in some LSP’s, both actants are typically inanimate. Why is it, then, not possible to interchange them (i.e. to reverse direction of action) as was possible with actants from similar categories in LGP
(e.g. Dog attacks man - man attacks dog)? In LSP's with one animate, one inanimate actant, the positions may be reversed:

Variola attacks man

Man attacks variola (by means of extensive vaccination programmes)

Webster submits "assail" as a synonym for "attack"

Substitution experiments immediately indicate the limitations of this synonymy and that of the other synonyms: invade-attack-encountercharge-fall upon-

assailed

A smell of cooking invaded our nostrils.

? A smell of cooking attacked our nostrils

? A smell of cooking encountered our nostrils

Role-reversal ? A smell of cooking charged, fell upon our nostrils with 2 inanimate actants

Fatty acids will also attack this coating

? This coating will also attack fatty acids
Attempts to role-reverse some examples (1-45 in the corpus) bears this out:

<table>
<thead>
<tr>
<th>Inan. Subjects of ATTACK ± role reversal</th>
<th>Inan. Objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvents</td>
<td>Epoxy coatings</td>
</tr>
<tr>
<td>Context: Nap. Acid</td>
<td>Zinc</td>
</tr>
<tr>
<td>Fatty Acid</td>
<td>Coating</td>
</tr>
<tr>
<td>Sulf. acid</td>
<td>Pumprooms</td>
</tr>
<tr>
<td>Vapours</td>
<td>Ventilation systems</td>
</tr>
<tr>
<td>Environment</td>
<td>Metal</td>
</tr>
<tr>
<td>Condition</td>
<td>Pericardium</td>
</tr>
<tr>
<td>Condition</td>
<td>Muscles</td>
</tr>
<tr>
<td>Inflammation</td>
<td>Mucous membrane</td>
</tr>
<tr>
<td>Inan. Sbj. Epizootic diseases</td>
<td>An. Obj.:</td>
</tr>
<tr>
<td>Variola equina</td>
<td>Animals</td>
</tr>
<tr>
<td>Disease</td>
<td>Horses</td>
</tr>
<tr>
<td>TRIBISSEN</td>
<td>Cattle</td>
</tr>
<tr>
<td>An. Subj. Larvae</td>
<td>Bacteria</td>
</tr>
<tr>
<td>An. subj. - an. obj.</td>
<td>Carcasses</td>
</tr>
<tr>
<td>Tick</td>
<td>Animals</td>
</tr>
<tr>
<td>D. reticulatus</td>
<td>Ruminants</td>
</tr>
<tr>
<td>Bedbugs</td>
<td>Chicken</td>
</tr>
</tbody>
</table>

Syntactically there seems to be no reason for the different characteristics of subject and object.

It appears that "attack", in both LSP and LGP, may have

- An. subj. - an. obj. 
  - Tick attacks pigs

- Inan. subj. - an. obj. 
  - Restlessness attacks John
  (here restlessness is analogous to a disease!)
An. subj. - inan. obj. Larvae attack carcases, trees, etc.

Inan. subj. - inan. obj. Acid attacks zinc.

Intuitively it appears that a wider spectrum of nouns, terms and other nominal forms, are possible objects than subjects, e.g.

- inflammation
- bedbugs
- larvae
- carcases
- John

An examination of the context of the examples is revealing:

1) In veterinary medicine, especially, but also in marine engineering (corrosion, hull maintenance, etc.) ATTACK has the value of a quasi-synonym for "af-fect". On a time continuum, "attack" precedes "af-fect", e.g. (typically "Large numbers of animals in a herd may be attacked. Animals may be affected in various ways ..."

But: "The disease affects large areas of Africa"? "The disease attacks large areas of Africa"

Here an obvious object-constraint operates.

2) Polyptoton occurs frequently, e.g. JAVMA p. 183 "at-tack" (n) - many examples.

3) The remarkable frequency with which the adjective "aggressive" figures in the co-text, has been briefly examined in this analysis of "attack":
Only two areas remain:

- Aggressive acids and the coating of stainless steel in ballast space (MER 1985 Jan p. 27) (ibid p. 26) - offers several instances of "attack".


- Limbal melanomas are less aggressive

- mixed-cell type melanomas were equally aggressive

- Decreased survival time ... is related to the aggressive behaviour of the tumours

(Same page): Ocular melanomas are malignant neoplasms that are locally invasive and can result in extensive local tissue destruction.

Relationship between "aggress" and "attack":

AGGRESSIVE

LGP def. (Webster): Aggress (vb) to attack; to set upon

I Aggressive

1. Tending to aggress; starting fights or quarrels


II Aggress

(Wyld) vb.i. To become an aggressor

Aggressive (chiefly of persons). Having quarrelsome manner and disposition, fond of and prone to start controversy, and to attack in words, cantankerous.
CONCLUSION

The pattern that emerges for attack in two LSPs studied is as follows: Attack and aggress share certain characteristics in a fuzzy lexical set:

1) Initiative, dynamism, incipient hostile or defensive counter action

2) Arguably, animate or animized subject

3) In British usage, frequent negative connotations
   In US usage, if the result of the attack is desirable in the context, e.g., the combatting of disease, subject of verb = + "desirable"
   object of verb = - "desirable"

Tribissen (good) attacks
   }

   is aggressive to
   }

Infection (bad)

Melanoma (bad) is aggressive (bad).

In US usage particularly, whether attack is loaded one way or the other. (± "Desirable") is dependent on viewpoint.

This explains why only some objects collocate meaningfully with "ATTACK" in LSP. An LSP is involved with the maintenance or improvement of the status quo.

- Acids attack coatings (= leads to deterioration; = bad
  Acid = "aggressor",
  Coating = "victim")

- Tribissen attacks infection (= leads to improved health.
  Tribissen = redeeming force
  Infection = outsmarted villain)

   hence: acid is aggressive (bad)

Tribissen is aggressive (good)
In an LSP context, the relationship between the actants reflects the overall preoccupations of the special field:

e.g. Veterinary medicine aims at the prevention and cure of disease; hull maintenance aims at the eradication of corrosive influences, etc.

Hence there is an array of predictable actants, stable within the subject field, and largely non-reversible, idiomatic and predictable.

The limited range of possible subjects corresponds to an enlarged LSP collocation, e.g. A + B constitute an LSP phraseolexeme,

A
C
D + B are quasiphraseolexemes, designated by E

contextual predictability, collocation at contextual or discourse level, e.g. attack/affect/aggressive. "Attack" has thus acquired a different meaning in LSP in that it may be positive in implication, its actants are constrained, its subject may be inanimate, the process it designates is largely non-reversible.

The LSP use of "attack" requires terms in the environment:

<table>
<thead>
<tr>
<th>e.g. (usually specific)</th>
<th>Subject</th>
<th>v.</th>
<th>Object (usually specific)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease</td>
<td>&quot;attack&quot;</td>
<td>organism</td>
<td>metal</td>
</tr>
<tr>
<td>Virus</td>
<td></td>
<td></td>
<td>animal</td>
</tr>
<tr>
<td>Bacteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parasite</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
<td>disease</td>
</tr>
<tr>
<td>Vaccine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td></td>
<td></td>
<td>virus</td>
</tr>
<tr>
<td>Therapy</td>
<td></td>
<td></td>
<td>bacteria</td>
</tr>
<tr>
<td>Chemical (acid)</td>
<td></td>
<td></td>
<td>etc.</td>
</tr>
<tr>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It is by entering a relationship with an appropriate term that "attack" acquires an LSP value and becomes part of an LSP phraseolexeme. Predictably, LSP "attack" evidences different characteristics from LGP "attack". + can be virtually regarded as a "different" verb in that over and above its LGP "signification" meanings it acquires new values in the LSP context.

**LAY**

LAY in ME environments including actants from the semantic set "cable", "pipe", is a term in a system of terms relating to the special field of cable-laying or pipe-laying. It is stable, unambiguous and capable of compounding. It may be monovalent on the surface (at syntactic level) but is implicitly divalent.

"Lay" in VET environments collocates typically with "egg". When the egg is laid by a non-domesticated creature, a wild bird or an insect, etc., the term appears as part of a virtually inevitable LSP phraseolexeme.

When the (bird, usually) is domesticated or wild or semiwild but exploited for sporting or commercial reasons, the term "lay" frequently appears in isolation, and is productive of other word-classes, e.g. "Pheasants begin laying in October or November if hatched in good time".

Polylexical terms are formed by LAY + UP, LAY + DOWN, in ME ("lay up" and "lay down" are poly-lexical items in LGP also, but the meanings are quite different. These, like many others, are lexical items, not collocations, and fill one sentence slot. "Lay-up" especially lends itself to the generation of other word classes. Laid-up, the layup, etc.
Definitions

Webster: 

\textbf{to lay down} v.t.
\begin{itemize}
  \item a) to resign, as an office
  \item b) to deposit, as a pledge
  \item c) to offer, assert, or declare, as a principle, or a command
  \item d) to preserve, to lay by, as salt meats or provisions
  \item e) to draft as a plan or diagram
  \item f) to sacrifice or give up (one's life)
  \item g) to bet, wager
\end{itemize}

\textbf{to lay up} v.t.
\begin{itemize}
  \item a) to store for future use
  \item b) to confine to a bed or room
  \item c) to dismantle and put out of use, as a ship
\end{itemize}

Conclusion: Changes observed

"Attack" is not encountered in LSP in the central sense of "attack with words, criticize", (as in the press or on the platform).

"Determine" is not encountered in the central LGP sense of "resolve".

"Excite" is not encountered in the central LGP sense of "cause (Animate Noun Actant) to experience emotion or excitement".

That is to say: When we encounter in a veterinary context "the presence of the mare excites the stallion", the animate actants convince us that "excites" is here used in an LGP sense, not an LSP sense.

When we read "The heifers were determined to be non-pregnant", we know that this is LSP, on semantic grounds, because otherwise the sentence would be semantically obscure or eccentric. Again, this is not to say it would be an impossible or defective LGP utterance. It would be possible to devise a context for it - the Bo-
vine Planned Parenthood Society, for example. The LSP meaning is more probable because of the actants, and the semantic value of "determine" is changed accordingly.

The fact that these and other verbs in LSP lose many polysemous properties, gaining in stability in their application, engineers a rapprochement with terminology (Hoffmann: 19838, 225) by approaching terminological monosemisation. The distribution of all the verbs studied is greatly reduced. So is the Valency and the form in which the verb occurs – the preponderance of infinitives is striking, for instance, with "determine".

The changes observed may in each case be traced to collocation with a term; this term is the nucleus of the LSP phrase. This is to proceed beyond Faber's (1983) claim that "mutual attraction predicts 'expected' collocates in the environment". Like Hoffmann, we find the relationship between the terminologized verb and its environment – i.e. other terms – to be of supreme relevance. At times this relationship will be so intimate as to be implicit, unexpressed at surface level in the syntagma or phrase e.g. "The hens are laying [eggs]".

Valency analysis, combining both the syntactic and the semantic levels, proves valuable for the study of LSP phraseology and the evaluation of LSP phraseolexemes. Valency theory assumes the verb to occupy a central position in the phrase. Since LSP phrases have a terminological centre, this will be either

- a term-verb (sinter, weld)
- or a verb like "attack" which occurs as part of a powerfully controlled, syntactically and collocationally constrained, sense-reduced, stable and specific unit which constitutes the compound centre of the LSP phrase. The terminological centre focus is then TERM + (terminologized verb = TERM)

There is evidently valid grounds for considering LSP phraseology part of terminology and the study of it by means of the application of terminological method has proved valuable. Its importance and implication for every branch of LSP study and its practical applications – lexicography and termbanks, machine and human
translation and translation teaching, LSP semantic theory, etc., can hardly be overestimated.

A definition of the nature of LSP must focus on frequency as a function of communicative intent—information transfer, requiring precision and the elimination of all factors which confuse the issue—circumlocutions, overtly loaded language, synonyms, archaisms, etc. Terminologization, semantic reduction and stable predictability in collocation are devices which make LSPs more suited to their task. Only by a study of LSP phraseology will it be possible to determine the nature of the mechanisms which are called into operation when the purpose for which language is employed becomes "special", and only by interlinguistic contrastive studies of LSP phraseology will it be possible to translate LSP texts efficiently.

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APPENDIX

Dictionaries consulted for Definitions:


Sources of Corpus:

- Marine Engineering Review 1985
- Journal of the American Veterinary Medical Association, 1983 and 1984
- McGraw-Hill Encyclopaedia of Science and Technology, New York 1982