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Terminology as a Specific Carrier of Information

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This paper deals with terminology as a characteristic feature of the language used in science and technology. The lexical units in question serve the communication needs and demands of particular discourse communities, i.e., experts in different branches of science and specializations. Terminology precisely describes reality, carries specific information on the phenomena and relationships between them and helps to avoid shifts in meaning during the process of communication. In comparison with other spheres of life where shifts in meaning are common, in science and technology, changes in the information transferred are unacceptable and may lead to serious consequences. This paper focuses on various aspects and approaches to this part of the lexical system. Examples from the English language for Electrical Engineering and Communication Technologies provide an insight into different criteria for classifying units as terms, lexical patterns and semantic relationships between the individual constituents. Other features, qualities and functions of terminology, such as the stabilizing reality, interconnection between explicitness and implicitness or description of progress reflecting a unique attitude to reality are also discussed.

Keywords
Terminology; science; technology; lexical system; communication

1. Terminology

The English language is widely used as a universal tool for communication in science, technology, business and many other areas of the interconnected and globalized world. It is used by both native and non-native speakers to capture and structure reality, to describe it and transfer new knowledge. Consequently, the English of science and technology has become a global phenomenon characterized by its specific features such as monoreferentiality,

lack of emotion, precision, transparency and conciseness (cf.: Gotti 33-66, Lankamp, Savory 120). In this variety, there is no space for ambiguity and shifts, which are typical of communication in other situations and contexts. The recipients' own shifts and changes of the reality in question are in this case unacceptable. The information transferred must be exactly the same for all participants of the communication process, usually specialists in a particular branch. What scientific and professional communication requires is precise segmentation, structuring and description of reality (i.e., clear identification of phenomena, entities, their features and relationships). Not only are any shifts undesirable, but they may also lead to misunderstandings resulting in serious consequences. For these purposes, the language of science and technology focuses on its referential function and uses specific strategies and means to remove undesirable differences, minimize their occurrence in the communication process and ensure that the information transferred remains the same for each participant. In other words, the information must remain the same for both the producer and the recipient.[1] All the linguistic means serve the purpose of giving concrete objective information about reality in the most formal way. Terminology, lexical units created by scientists to meet new needs in communication, referring to special objects of reality and their features, properties and relationships, is a specific tool used for this purpose. It represents a method of capturing a particular section of reality within a discourse community.[2]

Lexical units representing terms are usually based on written communication. They do not change their meaning and can be characterized by narrow specialization. In some cases, it is difficult even for experts to understand them if they do not specialize in the particular field of the scientific discipline.

Characteristic features signalling the situation and cases in which the lexical unit should or can be considered a term are presented by Cabré (137).[3] The guidelines and characteristic features represent a very useful tool for identifying terms. Classifying a lexical unit as a term will require further discussion and consideration. Not all the rules presented by Cabré (137) will be applied to all terms. The multi word terms are always lexically organized around a single base, such as in: *wind turbine generator, engineering tool software, automatic frequency control.* Other linguistic elements cannot be inserted into the terminological phrase (*home network systems* not *home and office network systems,* similarly: *static synchronous series compensator, time domain analysis).* The individual constituents cannot be modified individually (*SRAM Static Random*

Access Memory, not, for example, *Static Random and Stable Access Memory)*. Terms form a single lexemic unit in other languages, e.g., E.: *Universal Serial Bus* – Cz: *univerzální sériová sběrnice*, E.: *Advanced Encryption Standard* – Cz: *standard pokročilého šifrování*. We must consider the fact that in the language of science and technology, original English terms are used instead of equivalents in other languages (cf.: Krhutová 30). Very often the equivalents do not exist due to the rapid development of the scientific discipline. If the equivalent exists in the particular language, it is very often used more as an explanation than as a real equivalent.

Problems often arise with synonyms. They may cause a shift in meaning and thus do not serve the purpose of the language of science and technology properly. For some items, there will be antonyms in the subject field, as in: *low altitude platform, high altitude platform*. On the other hand, many terms denote elements which, by their nature, do not have opposite counterparts in reality: *signal flow graph, wind resource assessment*. One of the criteria stated by Cabré (137) is the fact that the meaning of the expression cannot be deduced from the separate meanings of the constituents. In the language of science and technology, the terms used are descriptive and transparent because they are created with the purpose of condensing the information in one concise unit and, therefore, the meaning is mostly transparent to, at least, the members of the particular discourse community, who are able to deduce the meaning from the individual parts of the unit. For example, *hydrogen-generation system* is a system for generating the substance mentioned*, circle loop antenna* is an antenna of the specific shape and *lead-free soldering* is a process characterized by not using the particular substance.

The structure of some units clearly shows that their origin is based on a rather freely combined sequence standing on a fuzzy borderline between such a free connection and a unit with inner cohesion: *electric/thermal performance*. In specific cases, we will also find versions of the same term: e*ngineering tool software/engineering tools software*.

As regards the characteristics and descriptions of a term, more features should be taken into account. One of them is the possible ambiguity of the lexical unit. Bauer states that "... the potential ambiguity is ignored, and only some of the possible meanings of the form are used (sometimes only one)" (48), which can be considered an essential feature of terminology. The status of the unit, based on context, professional knowledge and a kind of custom within the particular community of professionals, is very often

observed in cases in which more correct options exist, but only one is used as a conventional term, as in *power system stabilizer* not *energy system stabilizer*. This is accompanied by the extensive use of acronyms (cf.: Pawley 105-106).

2. Lexical patterns and semantic relations

It is the aim of this article to find which lexical patterns and semantic relationships participate in the creation of terms and function as linguistic means of the scientific description of reality. For the purpose of analysis, 430 complex lexical units from scientific texts in journals and from professional texts on Electrical Engineering were used.[4] For establishing the relationships between the individual constituents of the complex lexical unit and thus understanding the deep structure of the terms, it is essential to identify the parts of speech participating in creating the unit and to describe the lexical patterns of the terms (cf.: Botha). The parts of speech can be characterized as sets of units sharing morphological, semantic and syntactic properties (cf.: Anward 3, Crystal, Lipka 19). These sets of units carry the basic kind of information giving the first guideline and direction into further analysis of the relationships between the individual constituents. The following lexical patterns of terms used in the language of Electrical Engineering were found within the lexical units analysed.[5]

1) COMPOUND ADJECTIVE – NOUN
battery-charging products
2) NOUN1 – NOUN2 – NOUN3
electricity storage systems
3) ADJECTIVE – NOUN1 – NOUN2
digital signature algorithm
4) NOUN1 – ADJECTIVE – NOUN2
land mobile satellite
5) ADJECTIVE1 – ADJECTIVE2 – NOUN
static synchronous compensator
6) ADJECTIVE – NOUN1 – NOUN2 – NOUN3
trivial file transfer protocol
7) ADJECTIVE1 – ADJECTIVE2 – NOUN1 – NOUN2
differential electromagnetic emanation analysis

8) NOUN1 – NOUN2 – NOUN3 – NOUN4
computer simulation technology software
9) NOUN1 – ADJECTIVE – NOUN2 – NOUN3
field programmable gate area
10) PRESENT PARTICIPLE – NOUN1 – NOUN2
sliding mode control
11) PAST PARTICIPLE – NOUN1 – NOUN2
switched reluctance generator

The relationships between the constituents are based on binary structures (cf.: Warren 50). We can use the context or stress patterns to identify the binary structures of complex units. With terminology the situation is different and more complicated. Communication in science and technology is mostly based on the written form and the English language is often used by non-native speakers who create new terms according to immediate communication needs to describe new complex phenomena (cf.: Krhutová 179, Řeřicha 26). As a result, the information can be decoded only on the basis of shared professional knowledge, which can be seen in the following examples: *photonic band gap, digital signal processor.* For a person who is not versed in the subject in question, it would be difficult or even impossible to decide which of the following structures the terms represent, i.e., if they represent a left- or right-branching structure (cf.: Warren 17).

(A – B) – C	(photonic – band) – gap,	(digital – signal) – processor
or		
A – (B – C)	photonic – (band – gap),	digital – (signal – processor)

On the basis of professional knowledge of the subject matter of Electrical Engineering (or other branches of science), we can describe the semantic relationships between the individual constituents of complex lexical units used as terms and, in this way, analyse the deep structure and semantic pattern of the term:

1) COMPOUND ADJECTIVE – NOUN
(object – action) purpose/function – agent/instrument
The head constituent of the compound adjective (action) is modified by the object of the action. The action and the object of the action denote the

purpose/function of the modified noun (agent or instrument of the action).
data-gathering applications
energy-harvesting systems

(result – action) purpose/function – agent/instrument
The head constituent of the compound adjective (action) is modified by the result of the action. The action and the result of the action denote the purpose/function of the modified noun (agent or instrument of the action).
light-emitting diodes

(A – free) technical characteristic/composition/concomitant circumstances – X
A is not present in X / X does not contain A
The head constituent of the compound adjective (*free*) is modified by another element characterizing the technical characteristic, composition or concomitant circumstances. The structure describes the absence of the element or phenomenon denoted by the compound adjective's first constituent in the modified noun.
cable-free X-ray tube
lead-free soldering

(agent – action) – object
The head constituent of the compound adjective (action) is modified by the agent of the action. The modified noun denotes the object of the action.
heat-affected zone

(agent – action) – result
The head constituent of the compound adjective (action) is modified by the agent of the action. The modified noun denotes the result of the action.
computer-generated sequence
static-generated manufacturing problems

(instrument – action) – object
The head constituent of the compound adjective (action) is modified by the instrument of the action. The modified noun denotes the object of the action.
silicon-controlled rectifiers
software-controlled pulses

(degree of quality – quality) – object
The head constituent of the compound adjective denotes an action describing the quality of the modified noun (object of the action). It is modified by a kind or degree of quality.
fine-grained microstructure

2) NOUN1 – NOUN2 – NOUN3
(2a) (N1–N2)–N3
(object – action) – agent
electricity storage systems
(result – action) – agent
hydrogen-generation system
(object – tool) – agent
power system stabilizer
(2b) N1–(N2–N3)
instrument of the action – (manner of operation – action)
internet relay chat

3) ADJECTIVE – NOUN1 – NOUN2
(3a) (ADJ–N1)–N2
(ADJ–N1) denotes a composition/arrangement of N2
dielectric resonator antennas
N2 denotes the structure/content of (ADJ–N1)
electrical power system
(ADJ–N1) denotes the quality/manner of operation of N2
differential scanning calorimetry
(3b) ADJ–(N1–N2)
ADJ denotes the place of operation
geostationary earth orbit
ADJ denotes the manner of operation
optical character recognition

4) NOUN1 – ADJECTIVE – NOUN2
N1–(ADJ–N2) represents the pattern where N1 denotes
place of operation
land mobile satellite
arrangement/design
multilayer ceramic capacitor

5) ADJECTIVE1 – ADJECTIVE2 – NOUN
ADJ1–(ADJ2–N) pattern, where ADJ1 denotes
manner of operation/arrangement/design
broadband wireless application
amount/size
mean absolute error

6) ADJECTIVE – NOUN1 – NOUN2 – NOUN3
(6a) ADJ–[(N1–N2)–N3]
method of operation – [(object – action) – instrument]
trivial file transfer protocol
(6b) (ADJ–N1)–(N2–N3)
(result) – (action–agent)
infrared light emitting diodes
(ADJ–N1) is a method of operation (N2–N3)
switched mode power supply
(6c) [(ADJ–N1)–N2]–N3
[(object) – action] – agent
cross talk avoidance code
[(method) – object] – action
automatic test pattern generation

7) ADJECTIVE1 – ADJECTIVE2 – NOUN1 – NOUN2
(7a) [ADJ1–(ADJ2–N1)]–N2
[quality – (object/instrument)] – agent
artificial neural network controller
differential electromagnetic emanation analysis
(7b) ADJ1–ADJ2–(N1–N2)
quality1 – arrangement/method of operation – (phenomenon/component)
linear regulated power supply
static synchronous series compensator

8) NOUN1 – NOUN2 – NOUN3 – NOUN4
(8a) [(N1–N2)–N3]–N4
[(instrument1 – action) – instrument2] – agent
computer simulation technology software
(8b) (N1–N2)–(N3–N4)

(N1–N2) is a method of operation of (N3–N4)
current follower transconductance amplifier

9) NOUN1 – ADJECTIVE – NOUN2 – NOUN3
(9a) (N1–ADJ)–(N2–N3)
(N1–ADJ) is a method of operation of (N2–N3)
thyristor controlled series capacitor
field programmable gate area
(9b) N1–[(ADJ–N2)–N3]
method of operation – [(arrangement) – object]
microwave integrated circuit technology
quality – [(object/instrument) – agent/instrument]
correlation electromagnetic emanation analysis

10) PRESENT PARTICIPLE – NOUN1 – NOUN2
(PRES. PART.–N1) denotes the quality or manner of operation of N2 / N2 uses (PRES. PART.–N1) as a manner of operation.
sliding mode control

11) PAST PARTICIPLE – NOUN1 – NOUN2
N2 is caused by (PAST PART.–N1)
unbalanced load faults

In patterns 2-10, we could further analyse compounds as constituents of units in a detailed way, e.g., *hydrogen-generation system, power system stabilizer* representing a COMPOUND NOUN – NOUN structure or *trivial file transfer protocol* representing an ADJ – COMPOUND NOUN – NOUN structure.

Table 1 – Lexical patterns of terminology in English for Electrical Engineering (430 units in corpus, figures rounded)

TERM PATTERNS	SHARE IN CORPUS
COMP. ADJ. – NOUN	48%
ADJ – NOUN1 – NOUN2	22%
NOUN1 – NOUN2 – NOUN3	12%
ADJ – NOUN1 – NOUN2 – NOUN3	6%

ADJ1 – ADJ2 – NOUN	4%
NOUN1 – NOUN2 – NOUN3 – NOUN4	3%
ADJ1 – ADJ2 – NOUN1 – NOUN2	2%
NOUN1 – ADJ – NOUN2	1%
NOUN1 – ADJ – NOUN2 – NOUN3	1%
PRES./PAST PART. – NOUN1 – NOUN2	1%

As we can see from Table 1, a significant part of the material analysed is represented by the COMP. ADJ – NOUN structure. Compound adjectives form an important part of the linguistic framework of the variety discussed. Adjectives could be characterized as descriptive and delimiting units. Their main semantic function is connected with the description of properties of materials, components, devices, machines, i.e., providing additional information and details about the elements and entities (cf.: Tucker 57, O'Dwyer 66). In this way, adjectives delimit the scope of referents focusing on a specific narrow section of elements providing further detailed and precise classification and structuring of the particular part of reality. Compound adjectives represent a higher level and precision of the functions required by the communication needs in science and technology. The second significant group is formed by the ADJ – NOUN1 – NOUN2 structure. Most items within this group represent the (ADJ –N1)–N2 pattern describing the manner of operation as an essential kind of information necessary for the particular discourse community.

3. Information-condensation and stabilizing reality

From the above presented examples, we can see that terminology is a typical representative and carrier of the properties characteristic for the language variety. They represent **condensation of information and ideas**. Information-condensation is accompanied by the extensive use of **abbreviations, acronyms** and **blends,** which is so immense that they may not be known to all experts, and for the first occurrence in the particular scientific text, explanations are provided. Abbreviations, acronyms and blends represent a very effective method of condensation, as confirmed by Lipka who claims that "Acronyms and blends carry to an extreme the information-condensation of word-formation,

… (146). Meys emphasizes the "economical" aspect of compounding as condensation of longer phrases:

> …compounding is clearly a linguistic-economy mechanism allowing one to express in a concise way something which would otherwise have to be rendered by means of an – often much more elaborate – phrase. Compound adjectives can thus be regarded as (usually pre-modifying) replacements of, or substitutes for, lengthier (post-modifying) phrases. (Meys 84)

Terms are typical examples of modification sequences from right to left leading to semantic narrowing and thus towards a clear identification of the phenomenon or entity. Such sequences of independent lexical units are a substitute for longer descriptions by means of sentences and clauses. It is an economical method of a precise, clear and unambiguous description of phenomena and entities. In this way, they are clearly specified and identified by all participants in the process of communication, which can be considered an essential requirement of the language of science and technology. Premodification is more precise than postmodification: it is economical, consistent and helps avoid ambiguity (cf:. Feist 195-196, Ljung 205-216, Meys 85).[6] It thus represents a closer and straight connection between the thought, language and reality. Such a close connection is required by the language varieties in question, because it limits the possibility of undesirable shifts in meaning which occur in communication. The conversion of postmodification into premodification contains several processes. Sentences (clauses) are transformed into constituents of a sentence, and predicates into attributes. All the processes are, at the same time, linguistic means of transforming dynamicity into staticity. According to Radden and Dirven, "The positions of modifiers are connected with their structural meanings: **prenominal modifiers** typically describe permanent and characteristic qualities, while **postnominal modifiers** typically describe temporary or occasional qualities" (144). Through changing postmodification into premodification we get stable and permanent qualities of the nouns modified. The transition from verb into adjective (i.e., from a unit related to dynamic reality to a unit related to static reality) contributes to the stability of the phenomena denoted. Stability of entities, their stable and permanent features (even if created artificially for the purposes of the description of reality and the transfer of information) are necessary for effective reality segmentation and structuring. A precise

structure of reality is the basis for building up terminology, which could be characterized as a method of capturing a specific part of reality within a particular discourse community.

4. Explicitness and implicitness

Explicitness represents another essential and characteristic feature of the language variety discussed, because it aims the communication at the particular referent and limits the space for shifts occurring in the transfer and reception of information. However, premodification represents condensed information. The condensation necessarily brings a restriction of explicitness, a strengthened role of context and a move towards implicitness. The connection between premodification and implicitness is discussed by Góméz, who states that "…premodifiers are less explicit in meaning relations than postmodifiers, since some of the grammatical items that appear in postmodifying position are lost in premodification. This gives way to more restricted forms based on previous meaning or shared cultural background" (31).

In the language of science and technology, the role of context is much more emphasized in comparison with other types of communication because it consists in shared professional knowledge (cf.: Krhutová). The information carried by terms, however explicit it may be, cannot be decoded by recipients without the particular education and knowledge and standing outside the discourse community (*fuzzy logic controller*, *silicon-controlled rectifiers*, etc.). Consequently, the explicit information will always carry a high degree of implicitness referring to the knowledge shared by the specific discourse community. In other words, in the case of professional communication explicitness and implicitness are closely interconnected, establishing a unique quality of the discourse among the experts in a particular branch of science. As we could see in the examples from the language of Electrical Engineering, terminology gives a detailed specification of the properties of the elements of reality. At the same time, the lexical units used as terms constitute structures which cannot be understood without precise knowledge of the reality in question. These structures are representatives and carriers of the specific connection between explicitness and implicitness as a unique quality.

5. Description of progress

The language of science and technology, particularly the language of Electrical Engineering, deals with a rapidly developing and ever changing reality. Consequently, the language constantly responds to these changes and it has to reflect them appropriately. This progress is, of course, reflected at the textual level. It should be noted that the reflection of progress can be found in different aspects of the lexical units themselves. The idea of progress can be expressed explicitly by the words *new*, *new generation*, *advanced*, *best*, which indicate the fact that the object or phenomenon is new or is characterized by the qualities not present before (*new generation networks*, *new/better assessment*, *best-fitting tools*, *advanced encryption standards*, *advanced video coding*, *advanced metering infrastructure*).

In most cases, the idea of progress is not given explicitly but it is hidden in the combination of ideas in which the idea of progress and novelty is denoted by the combination itself. New devices or solutions are described as *smart* or *intelligent* (*smart homes*, *smart cities*, *intelligent transportation system*). They are given qualities usually connected with people. They are able to assess different situations and conditions of operation and perform complicated actions accordingly, i.e., behave like humans with human reasoning (*smart energy city*, *smart home systems*, *smart grid*, *intelligent load shedding*, *intelligent nuclear detection*). In other lexical units, the progress is described by qualities which are generally considered as (relatively) new phenomena, meaning a higher standard or level. The progress is then described by specific words like *digital*, *virtual*, *predictive*, *wireless*, *automated*, *automatic*, *networked*, *online*, as can be seen in the following examples: *digital signal processing*, *virtual reality*, *predictive torque control*, *wireless power transfer*, *automatic test equipment*, *networked control systems*, *online transaction processes*. The idea of progress and the advantage added in comparison with the traditional arrangement is also indicated by *-free* as the head constituent of compound adjectives (*maintenance-free solution*, *lead-free approach*, *lead-free soldering*, *cable-free X-ray tube*).

We can find units in which the phenomena or devices are given qualities traditionally not connected with them. The idea of progress is then delivered through this combination of unusual phenomena not known before, thus carrying the meaning of something new and progressive: *car-to-car communication systems* (cars usually do not communicate with each other, the idea of cars communicating in this way will constitute the meaning of something new and progressive). The same relationship between meanings can

be seen in *networked home appliances*. Similarly, the idea of cable is connected with metals not with optical phenomena, thus in *optical cable* the combination of the two ideas will constitute the information of progress. The same case can be found in *wireless power charge*, *wireless power transfer*. Charging and transfer of energy are traditionally connected with wires and cables as means/tools used for these actions and the idea of progress is delivered by the absence of wires.

It should be noted that in the case of implicit description of progress the idea of novelty and progress is strongly context dependent. It is given by the period of time in which communication is realized. We can see it in the example of *mobile phone*. A few years ago, the telephone was connected with landlines only and the idea of a device "independent" of these lines was a new and progressive phenomenon. At present, the word "mobile" is slightly losing its component of novelty and progress, because these technologies have become common in our everyday lives, and the idea of progress has been taken over by "smart" (*smartphones*). We can expect a similar development with *smartphones*, *smart homes*, *smart cities*, etc. as they are becoming more and more common and usual parts of our lives and the combination of ideas in question will not be perceived as new by speakers.

In most cases, the idea of progress is dependent on the particular discourse community of experts and their shared professional knowledge. Only the professional knowledge and knowledge structures make it possible to recognize the progress from the combination of the individual constituents of the lexical unit. It is not recognized by the general public (*thyristor controlled series capacitor*).

6. Conclusion

With the rapid development of scientific disciplines and progress in technology, the language varieties related to these spheres of human activities must reflect the changes that are not common and present in other spheres of life, at least not to the same extent and speed. The progress requires corresponding linguistic means describing the new reality on the basis of the system already existing and incorporating the new reality in it. The progress in science and technology (namely Electrical Engineering and Communication Technologies) is quickly introduced into practice, the inventions are used by a large number of people every day, they influence our everyday lives and, at the same time,

they influence the way we think about reality and the way we structure and describe it. Terminology carries the information in a highly condensed form. It is the basic means of precise segmentation and structuring of a particular section of reality by experts using specific knowledge structures shared within a particular discourse community. Terminology represents a unique attitude to reality through interconnection of explicit and implicit information reflecting the changes. It provides interesting material for linguistic analysis revealing the methods we perceive, structure and understand reality. Moreover, deep theoretical knowledge of various aspects of terminology will definitely contribute to a higher standard of teaching foreign languages at universities.

Notes

1. "There are logically at least three loci of meaning that we might be interested in. There is the meaning of the producer, the meaning of the text and the meaning of the recipient" (Jeffries).
2. "Medical language, as well as scientific or technical language, traditionally requires precise nonambiguous and preferably nonsynonymous language items to express relevant concepts, especially in the expert-to-expert tenor. Such language items are generally systematically organized in **terminologies**..." (Lankamp 22).
3. "• a phrase is lexically organized around a single base (random access memory, central processing unit, communication adaptor unit)
   - other linguistic elements cannot be inserted into the terminological phrase (*head of household but not head of the household)
   - none of the parts of the phrase can be modified individually (*power of attorney but not power of many attorneys)
   - the term can be replaced by the synonym (sonogram [sonograph, echogram, ultrasonogram])
   - an antonym exists in the same special subject field (even parity vs. odd parity, serial port vs. parallel port)
   - the frequency with which the same terminological phrase occurs in texts of a particular special field
   - the phrase is a single lexemic unit in other languages (Spanish 'tipo de letras' = font, Spanish 'portaaviones'=aircraft carrier)
   - the meaning of the expression as a whole cannot be deduced from the separate meanings of its parts, e.g. a 'slide rule' is not a rule; foxglove
   - the presence of certain linguistic units inside a phrase indicates that the phrase is most likely a freely combined string (The performance of this jazz *or* soul singer)" (Cabré 137).
4. *Advances in Electrical and Computer Engineering* (2011), www.aece.ro
   Canadian Journal of Electrical and Computer Engineering (2007) vol. 33 (4), (2009) vol. 34 (1,3,4), (2010) vol. 35 (1)

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5. The patterns serve as a basis for further analysis. They represent usual classification of words into parts of speech and do not reflect syntactic criteria (nouns functioning as syntactic adjectives).
6. "Semantically, the most forceful or informative word comes first; syntactically, the word making the crucial discrimination comes first; in discourse structure, the word with most information comes first" (Feist 254).

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