PRODUCTIVE VOCABULARY IN ESP
(Predicative Adjectives)

Ilina Doykova
Objectives

• Identification of key patterns
• Retrieval of frequent two-place predicates
• Emphasis on recurrent language elements
• Uniformity of the special features of technical style
• Strengthening weak constructs (use of highly specific adjectives)
• Use of self-compiled specialized corpora for exploration
• Preparing teaching materials based on the idea of clusters, collocations and adjective argument structures
Attributive vs. predicative use

• **Attributive (not obligatory)**

  *The other is a** hard solder, which is an alloy of copper and zinc.*

  *Cast iron is a very** useful material, because in liquid form it is able to flow easily into moulds.*

• **Predicative (obligatory)**

  *Some plastics** become soft** when heated, and** hard** when cooled.*

  *Elastic and plastic deformations** are both** useful in** engineering applications.*
1. Cutting tools, razors, etc. which need to be hard but not so tough, are tempered at 200-250°C and acquire a pale yellow colour.

2. Thermoplastics soften when heated and **become hard on** cooling.

3. The surface of the component **becomes hard due to** the formation of hard nitrides on the surface.
The complexity of adjective patterns

*hard* - senses and respective patterns

Valency Dictionary of English (Herbst et al. 2004)

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**P5**

+ for N

A Life has been *hard* for them. Last night was *hard* for you, wasn’t it?

**P6**

+ on N

B She was *hard* on you, but fair. It must have been *hard* on him, having to come back to the same apartment years later, where the marriage had first started out.

**P7**

+ to N

C Cherries should be *hard* to the touch, and plump.

**P8**

[It] + for N + to-INF

A Her health isn’t too good, and it’s *hard* for her to come to this place. I know it’s *hard* for you to swallow, but I hate them.

**P9**

[It] + on N + to-INF

B I think it was *hard* on him to see him executed. Another woman remarked that it was very *hard* on her not to have a curfew, and she used to lie and tell boyfriends her parents were very rigid and insisted that she be in by 10 p.m.

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*A* Something or someone can be hard for a person to do or experience, i.e. difficult or strenuous.

→ P1 P2 P3 P4 P5 P8

*B* A person or a measure such as a punishment can be hard on a person, i.e. strict or severe.

→ P1 P2 P6 P9

*C* *Hard* can mean ‘solid, not soft’. → P1 P2 P7
Corpus-based Methods

- Key words in context/concordances
- Lemmatization
- PoS (part-of-speech) Tagging
- Frequency counts
- Collocations/lexical patterning
- Clusters
WordList Adjectives in Technical Corpus

elastic, reasonable, regular, reliable, similar, specific, spiral, structural, successive, sufficient, suitable, symmetrical, technical, theoretical, thermoplastic, typical, traditional, toxic, transverse, thermal, various, vertical, unilateral, unsuitable, unusual, universal, undue, unobtainable, useful, tensional, original, occasional, optical, nominal, normal, nuclear, numerical, rigorous, partial, perpendicular, popular, porous, pneumatic, physical, particular, predictable, rectangular, rotary, previous, principal, profitable, proportional, resistant, upper, upward, individual, internal, linear, outer, mechanical, noncorrosive, natural, numerous, movable, multiple, mutual, magnetic, manageable, massive, multipurpose, metric, modular, impossible, identical, independent, indirect, individual, industrial, initial, inner, interchangeable, intermediate, internal, forward, fuzzy, gaseous, economic, economical, effective, efficient, elastic, electric, electrical, electromechanical, electronic, gradual, hexagonal, hydrochloric, geometric, graphical, headless, helical, horizontal, hydraulic (104)
### Key Adjectives

Reference corpus BNC WordList

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Different, small, important, high, large, hard, similar, single, necessary, low, required, cold, useful, closed, complex, ordinary, internal, fixed, suitable, soft, thin, external, plastic, fitted, tight, accurate, strong, ultimate, raw, automatic, electrical, rolling, mechanical, vertical, skilled, desired, indirect, mild, rigid, solar, diesel, burnt, horizontal, compound, hollow, proportional, nominal, composite, unsuitable, connecting, coarse, elastic, forged, versatile, hardened, economical, brittle, compressed, longitudinal, rotary, rotatory, tempered, abrasive, sectional, perpendicular, deformed, dimensional, conical, cylindrical, axial, corrosive, clamping, hexagonal, movable, tapered, tensile, helical, annealing, soldered, extruded, ductile, reciprocating, tensional, thermosetting, thermoforming, degassed, nonferrous, plasticizing, semi-fabricated, superfinishing (90).
Concordance

keyword *necessary* in Technical English Corpus

1. hole in their heads? f) State one application in which the use of studs is absolutely necessary. g) What can happen if a bolt is tightened excessively into a cast iron are techniques which are widely used to optimize manufacturing processes. It is also necessary to consider the impact of manufacturing on the environment. Noise,
2. b) Small deviations in dimensions must be kept within strict limits. c) Limits are necessary to ensure that components are interchangeable. d) The dimensions of a to vibration, an additional component like a spring washer or a lock nut will be necessary to prevent the nut from coming loose. Fig 4.1 shows the use of a bolt and to be joined are accessible. An additional part like a washer could become necessary if the parts are subject to vibration. c) Bolts with normal heads can be than plain bearings, and they are also more easily replaced when renewal becomes necessary. A ball bearing consists of hardened steel spheres running between two cylinderblock damage encounter engine ensure excessive fasten gasket hexagonal necessary zugänglich adj. Flugzeugrupf m Anwendung/ Schraube/mit Mutter round its 12 Screws, keys, splines, and cotters TT i) A cotter is used to j) It is necessary to use3. Translate into English: rods which are devices to axial forces and the hole have high and low limits. If a clearance fit is to be ensured, then it is necessary that the high limit for the shaft, be smaller than the low limit for the hole. by screws) to the hub or the shaft. A working clearance at the top and sides is necessary. Spline shafts and hubs spline shafts and hubs are used for heavy duty of 300-350°C and acquire a deep blue colour. Case hardening Sometimes it is necessary to have a mild steel component which has a hard surface and a tough product design Once the general design of the product has been finalized, it is necessary to produce detailed drawings of the various components and of the The joint between the cylinder and the head must be a temporary one, because it is necessary to remove the head when the engine needs reconditioning. 4 The joining of
Collocate function

Collocates - words in the immediate context of the keyword according to frequency of appearance

*necessary*
Cluster function

Clusters - words found repeatedly together in sequence node **necessary**
Pattern function

Patterns - words adjacent to the search word, organized in terms of frequency in each column

Most typical items in the neighbourhood of the search word occupy top positions

node *required*

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<th>L4</th>
<th>L3</th>
<th>L2</th>
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<td>AND</td>
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<td>FORCE</td>
<td>LONG</td>
<td>IS</td>
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Predicative Adjective Patterns
in Valency Dictionary of English (Herbst 2004)

be able to + Inf.
be un/suitable for
be easy to + Inf.
be available with/in/to + Inf.
be important in
be useful in/for/when
be necessary for/to/when

be difficult to + Inf.
be accurate in
be essential in
be economical to + Inf/in
be different from
be possible to/by
Patterns in Technical Corpus

make free of                      be known as                      be strong
become hard due to               become hard on                     be hard to + Inf
become important with           be inclined at                      be similar to
be perpendicular to              be proportional to                  be parallel to
be composed of                   be equal to                         be true to
be permanent in                  be convenient to                    be smooth in
be unique in                     be dependent on                    be expensive to
be central to                    be equipped with                   be required for
be fitted with                   be fixed with/on                   be suited for
be softer/simpler/quicker/smooth/smaller/greater than
Exercises, based on corpus clusters, collocations and argument structures

I. Accurate use of keywords (near synonyms: required/necessary, general/unspecific adjectives and their combinability)

II. Identification of lexical collocations and grammatical patterns (it is necessary to, it is important to, it is clear that)

III. Highlighting important information

IV. Correcting errors in sentences

V. Marking ungrammatical sentences

VI. Consulting online corpora - comparison between BNC and specialized corpora

VII. Word class identification (adj. /adv.)

VIII. Translation
References


Laufer, B 1997, What’s in a word that makes it hard or easy: some intralexical factors that affect the learning of words. In: N. Schmitt, M. McCarthy (Eds.), Cambridge University Press.


Web resources:

• The British National Corpus <http://corpus.byu.edu/bnc>
• Erlangen Valency Patternbank <http://www.patternbank.uni-erlangen.de/cgi-bin/patternbank.cgi>

Dictionaries:

• Oxford Collocations Dictionary for Students, 2002, OUP
• Collins Cobuild Advanced Learner’s English Dictionary <http://www.mycobuild.com>
• The Wordsmyth English Dictionary-Thesaurus <http://www.wordsmyth.net>