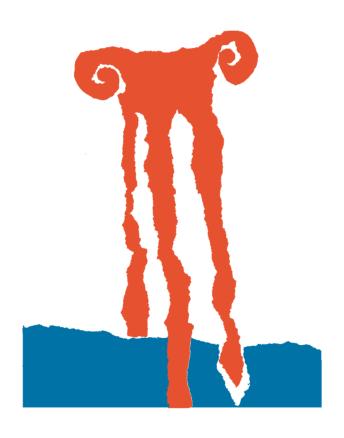
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Something Old and Something New. Techniques to improve the Lexical Inventory of EST Students: A Proposal

Antonio Miranda García, Javier Calle Martín

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Something Old and Something New. Techniques to improve the Lexical Inventory of EST Students: A Proposal

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Abstract

One of the main difficulties encountered by Spanish students of Engineering when they are confronted with a technical text in English lies more often than not in their poor command of the lexicon, both general and subtechnical. It seems obvious that the learning of lengthy wordlists by rote must be discarded as idle, since the students can usually only recall a few items once a few days have passed. This particular tedious learning task can be eased by favouring a set of associations within the learners' mental lexicon so as to relate a certain word with its designatum, or else to link mentally the word in English with its homologue (or near homologue) in the mother tongue. These associa-

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tions share the common objective of adding to the learners' vocabulary through the creation of word-links, both syntagmatically and paradigmatically. In this paper we present some techniques that have proved helpful to our students in building up both their active and passive vocabulary in quantitative and qualitative terms. On the one hand, procedural, word-formation and warm-up activities have been employed so far in the field of EST; etymology, on the other, is more innovative in foreign language teaching.

1. Introduction

uring the third quarter of the 20th century, when structuralism was at its height, English Language Teaching (ELT) was basically confined to the learning of the basic patterns and constituents of the language which, through continuous drills, would make the production of an infinite set of utterances feasible. According to this view, vocabulary was considered a must to generate as many correct productions as possible. However, the lexical inventory was not generally selected following valid criteria (Lavín and Miranda, 1993: 139-158), nor was it graded on grounds of frequency levels, taking into account coverage, learnability, etc.

With the appearance of the communicative approach, the lexicon became a matter of primary importance in language learning because, as Wilkins pointed out, "without grammar very little can be conveyed, without vocabulary nothing can be

conveyed" (1972: 111); in similar terms, "when our first goal is communication, when we have little of the new language at our command, it is the lexicon that is crucial" (Hatch, 1983: 74). Despite this advent of real communication in class, vocabulary is still a nightmare for foreign learners of English, its selection and gradation constituting an unmanageable task due to size, which is worsened if the potential syntagmatic and paradigmatic links of frequent words are considered, and even more if homonymy and polysemy are included.

The overwhelming importance of vocabulary in the receptive skills, especially reading, was empirically proven by Liu and Nation (1985: 33-42), who coined the term *frustration level*. Also along these lines, Laufer stated that the lexical threshold of learners when reading a text should not be less than 95%, otherwise comprehension would be unsatisfactory (1985: 285). These results have been corroborated by Carter (1987: 178-193) and Ward (1999: 309-323). See also Hirsh and Nation (1992: 689-696), Nation and Waring (1997: 8-10) for further discussion.

The lack of a basic vocabulary is widely acknowledged as one of the shortcomings of learners of English in Spain, and therefore a major cause of their learning failure (Miranda, 1991: 25-32). That picture does not change greatly in the case of EST

students, as they seem to lack the minimum core vocabulary to cope with general situations, but this is aggravated by the need to take into account subtechnical vocabulary. In the particular case of the School of Engineering at Malaga University, the students enrolled in Technical English I (a 4.5-credit optional subject) show an alarming shortage of general vocabulary both receptively and productively, even after having previously studied English for at least eight years. This statement is based on the results obtained from a series of questionnaires and tests used in the development of the needs analysis each year. The model used so far, partially based on the one proposed by Dudley-Evans and St. John (1998: 125). covers the analysis of the present and the target situations. The data for the present-situation analysis were gathered using a questionnaire and a set of tests administered at the beginning of the instruction. The former was especially designed to collect information about the students' background, a selfassessment of their level of English and other data (previous instruction of English, number of years, etc). The tests, on the other hand, prepared to measure their current level of English, contained half-dialogues, cloze tests, multiple-choice and vocabulary exercises (guessing word-meanings from the context, the form, etc.). From this survey we concluded that a) the students had a non-homogeneous level of English; b)

they were better skilled for reading and writing since most of them admitted having some previous grammar-based learning (as opposed to supposedly communicative trends); and c) their level of English was found to be beginner/intermediate. As for vocabulary, the tests showed that the students still had a poor command, lacking most of the strategies needed for the discovery of a word's meaning (*i.e.* analysis of parts of speech, affixes and roots, checking for L1 cognate, guessing from the context, etc.). In addition, other vocabulary-related features also proved to be unsatisfactory, such as spelling, pronunciation, lexical relations, collocations, etc.

This shortcoming especially affects core vocabulary (procedural words included) as well as (sub)technical terms. As for the latter, it is suggested elsewhere in the literature that technical vocabulary is not the responsibility of the ESP teacher since it does not "cause any understanding difficulty for the students with a grounding in this topic" (Laurén and Nordman, 1985: 64); the meaning can be worked out from a knowledge of the specialism or even resorting to word roots (Hutchinson and Waters, 1987: 166; see also Hoffman, 1985: 48; Dudley-Evans y St. John, 1998: 80; Jordan, 1997: 152). Only if the word is not a cognate, will it be the object of class treatment, either using translation or with a glossary containing expla-

nations of the terms involved (Dudley-Evans and St. John, 1998: 81-82). In this same fashion, no great effort is needed to understand the meaning of (sub)technical terms taking into account that English has been the lingua franca of Science and Tech-nology for more than fifty years and many of them have been borrowed into Spanish within this field. Often the loan has been included in the jargon of the specific linguistic community without its coinage into Spanish (airbag, backup, cashflow, PVC, CD, DVD, software, etc.) while, in the majority of cases, the cognates are easily recognizable (cation. carbide, diode, flux, pinion, turbine, etc.). In view of their high frequency and popular acceptance, a few of these borrowings have become main entries in the dictionary of the Royal Academy of the Spanish Language (e.g. 'estándar' < standard, 'item' < item, 'zapeo' < zapping, 'pin, patilla' < pin, 'hipertexto' < hyper-text, 'formatear' < format, etc.). At other times the loans have become barbarisms (e.g. 'randomizar' < randomize, 'customizar' < customize, '*spam' < spam, 'cliquear' < click, 'lincar' < link, etc.), sometimes even breaking firmlyestablished spelling rules (input, rather than *imput, as <m> should be expected before in Spanish, or spray, rather than *espray, since an initial cluster <sp-> is normally not allowed).

From all these data we were able to demonstrate that their present situation was far from that which is expected. The target situation can then be summarised as follows: the reading of scientific and technical literature in English, which is necessary because the students have to consult bibliography in their courses as well as throughout their future professional practice. Therefore, the teacher's effort will be devoted to developing the reading techniques (grammar included) by enlarging vocabulary, not only in terms of quantity, but also in quality.

2. Methodological techniques

Any lexical approach requires the design of a series of strategies, especially those aimed at creating links between words, syntagmatically as well as paradigmatically. See Schmitt (1997: 207-8) for a comprehensive taxonomy of vocabulary learning techniques, with significant figures about their usage and level of effectiveness. In the sections below, we review some techniques which contribute to the development of the students' active and passive vocabulary. First, we will deal with *procedural* and *highly indexical vocabulary* (Widdowson, 1983: 92); second, derivational and composition morphology will be developed as a means to enlarge the students' lexical inventory; third, we will favour the re-organisation of the stu-

dents' mental lexicon by using warm-up activities; and fourth, also from a qualitative viewpoint, we will attempt to further the students' knowledge about a word by making the most of its shape and by transcending to its lexical history, using philological techniques in order to establish boundaries and connections among words.

2.1. The procedural method

As its aim is directed to the study of procedural or highly indexical vocabulary (especially prepositions, discourse markers, etc.), the following micro-objectives are proposed, to wit, a) to increase their existing knowledge (e.g. CAUSE is exclusively conveyed by means of because); b) to distinguish between the different uses of the same connector (e.g. as is only associated with COMPARISON, whereas its use as a cause-marker or as a time-connector is almost universally unknown); c) to use the appropriate connector (e.g. because versus since); and d) to guess the meaning of a clause or sentence on the grounds of the connector(s) found. As the main goal is reading comprehension, we propose the following activities:

- 1. Identify connectors.
- 2. Relate connectors and linguistic functions (logical relations, suasion and intellectual attitudes; factual information, etc.).

- 3. Re-write sentences with equivalent connectors making the necessary changes.
- 4. Re-write sentences changing the linguistic function (e.g. PUR-POSE into MEANS; EFFECT into CAUSE; CAUSE into CONDITION, etc.).
- 5. Supply the missing connectors.
- 6. Re-arrange paragraphs according to the connectors used.

2.2. The word-formation method

2.2.1. Composition

It is almost unnecessary to highlight the importance of word composition and noun phrases in view of their occurrence in technical texts (be they books, manuals, journal articles or, especially, abstracts). However, more often than not these constructions pose problems to our students, who are usually at a loss as the lack of prepositions along with the left-to-right hierarchical word-order make them completely different from the Spanish homologues (where prepositions/connectors are employed and the right-to-left hierarchy is essential). This is clearly seen if we compare, for instance, E. a Taiwanese inexpensive digital pressure measuring device vs. Sp. un manómetro digital económico hecho en Taiwan (Alemán, 1997: 13-24).

Although multi-word (sub)technical terms follow the same mechanisms of word-formation as in general English, it is a

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fact that they have received but little attention in materials oriented to the teaching of these structures (Rudzka-Ostyn, 1985: 242). Accordingly, we present some activities to help learners understand compound structures by activating their potential vocabulary, to wit, a) to recognize compounds; b) to interpret them; c) to re-create or coin them. Some attention must also be paid to hyphenation. To this end, the following exercises are proposed (Miranda, 1994: 189):

- 1. Recognise compounds in a text.
- 2. Separate and classify the constituents in terms of class.
- 3. Distinguish between head and premodifiers.
- 4. Hyphenate the most related constituents.
- 5. Guess the meaning of a compound from its constituents. Paraphrase it and/or translate it into Spanish.
- 6. Notice the change of meaning taking into account the form of the constituents, as in *freezing medium* vs. *frozen medium*.
- 7. Notice the change of meaning in accordance with the relative position of constituents, as in *cutting-tip* vs. *tip-cutting*.
- 8. Re-order the following words into a compound making the necessary changes.
- 9. Build up a compound.

2.2.2. Derivation

Derivational morphology will also be dealt with as a way to help students guess word-meanings from the form (Mirhassani and Toosi, 2000: 301-311). Words like preionize are examples activating the students' potential vocabulary, on condition that they know the stem and are able to separate the existing affixes. As in the case of composition, we will not go into the details about affixation, focusing on the following micro-objectives instead: a) to emphasize the similarities between the derivation procedures of English and Spanish; b) to distinguish between Germanic and Classical affixes; c) to make students aware that a prefix does not change the class of word, barring en- which is used to derive verbs -as in encode (v) from code (n)-, while a suffix does often imply the change of class; d) to advise students that Germanic stems usually take a Germanic suffix, but not universally; and finally, e) to make them sensitive to the notion of *lexical density* (McCarthy and Carter, 1997: 32-33). In order to accomplish these tasks, the following activities are proposed:

- 1. Recognise derived words in a text.
- 2. Separate the affixes from the stem.
- 3. Paraphrase derived words.
- 4. Supply a derived form for a given definition.

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- 5. Fill in the blanks in a half-cloze choosing the right form.
- 6. Fill in the blanks in a half-cloze deriving the right form from the given stem.
- 7. Fill in the blanks in the table with the corresponding word or derived form.
- 8. Provide the antonyms using a suitable prefix.

2.3. The warm-up method

A warm-up is an appropriate activity to introduce a new topic in class, especially for further reading (or writing tasks) and, at the same time, constitutes a helpful technique for the presentation of new vocabulary. One of its advantages lies in its controlled time-span since, within a period of roughly five or ten minutes, the following micro-objectives can be achieved: a) to activate the students' background knowledge; b) to make them familiar with the topic involved; c) to present, at their request, the terms that will eventually be needed; d) to help them organise their mental lexicons; and e) to motivate them.

From a deductive methodological viewpoint, we take the warm-up metaphorically as the ship that goes from the known to the unknown in the attempt to activate the potential and passive vocabulary necessary for the journey (reading comprehension, basically). In the light of this, the teacher will have

to consider: a) the students' background knowledge in English; and b) the scope of the activity.

As for the first, the present situation analysis has revealed that most students are false beginners, vocabulary being one of their major shortcomings; they do not sufficiently know the (sub)technical terminology of their specialism, though they may be acquainted with it in their mother tongue. In such circumstances, the warm-up is started with a known hyperonym that serves as the umbrella term to develop the semantic sphere and build up a subsequent scheme. For instance, for a reading activity dealing with *flamecutting*, whose terminology in English is far from most students' command, to cut would act as the hyperonym from which to obtain the corresponding hyponyms. In doing so, the students would progressively provide the appropriate words (nouns, verbs and adjectives) depending on the material involved, its molecular structure, the type of cutting, the kind of finish, etc. Procedurally, materials such as paper, wood, stone, metal, concrete, copper, PVC, iron, steel will be suggested to elicit actions (such as tear, saw, cut, etc.), the type of cutting (whether gross or accurate), their qualities (e.g. flexible, light, heavy, resistant, hard, tough, conductor, etc.), along with the tools used (e.g. saw,

axe, chisel, etc.). As shown in TABLE 1 below, some words will inevitably lead to activate some others.

However, the selection of the hyperonym discussed so far takes us to the second issue, which is concerned with the time and scope of the activity. To control it, its coverage needs to be laid out in advance. In the EST context, it is helpful to shed light on the different word classes so as to enable learners to produce meaningful utterances on the topic. For example, using the example above, to cut iron could be used to introduce the qualities of iron (e.g. heat conductor, wear resistant, hard, heavy, machinable, etc.), the different types of iron (e.g. cast iron, corrugated iron, pig iron, etc.), the tools used for cutting it (e.g. a hacksaw, a cold cutter, a blacksmith's chisel, a cutting torch, a multi-torch automated machine, etc.) and the name of the action to cut it (e.g. flamecutting, oxygen cutting, oxygen burning, etc.). The blackboard also serves to perform these tasks as it allows us to arrange the terms in columns so that learners can grasp synoptically the classes to which they belong (whether nouns, adjectives, etc.).

To cut				
Materials	Shapes	Qualities	Tools	Actions
wood	beam	stiff/flexible		
metal	piece	(non)conductor	axe, carpenter saw, hacksaw, shears	saw
concrete	pillar	(non)resistant	air hammer, pneumatic drill	cut
PVC	pipe	smooth/tough	cold cutter, blacksmith's chisel, saw	flamecut
copper	wire	(non)ductile	wirecutter, nippers, pliers, wirerope cutter	shear
iron	plate	(un)machinable	handheld cutting torch, automated machines	
steel	bar	hard/soft		

TABLE 1: Synoptic (blackboard) presentation.

In a further stage, this lexical stock may be put into practice in such a way that learners combine the vocabulary just learnt to deal with rhetorical functions such as Definitions, Descriptions, Classifications, etc. For instance, a definition of a cutting torch would be a manual instrument which is meant to cut steel and metals by using a jet of oxygen. Furthermore, other linguistic functions (how to express logical relations, say, Cause, Effect, Condition, Contrast) can also be practised in this fashion.

The use of realia is recommended at this point as the teacher may show the students a specific item so that they can learn

the appropriate term in English. This technique is especially helpful when the term is difficult to ascertain even in the mother tongue; a visual aid is then needed. For instance, a piece of recently burned metal may be suitable to illustrate slag (i.e. the subproduct which remains after flamecutting). Similarly, a small torch may be shown to describe its parts (e.g. body, tip, nozzle, handle, rubber pipe, etc.).

All in all, the completion of this micro-activity has proved to bring forth great benefits for the students who, within a short time-span, feel themselves prepared to carry out not only specific readings on the subject but also to produce meaningful written sentences about it.

2.4. The etymological method

The etymological way constitutes the most daring technique in our attempt to expand the knowledge of words within an EST syllabus. The main objective behind this activity is to fix the sense boundaries of terms likely to be confused on account of their similar spelling (*i.e.* false friends, Hill 1982), and, conversely, to relate cognates in L1 and L2 (Martínez, 1994: 81-91). Procedurally, we have to search for the word's origin and, when possible, try to find parallel phenomena in the students' mother tongue as illustrations.

Although the meaning of smooth may be surrounded by darkness for most beginners, it is more than likely that the word smith will ring a bell for any learner of English, even if only as the surname of some historical figure, a comic character or an English-speaking politician or singer. Part of the classroom may associate it with the person who works iron, turning it into everyday objects (= Sp herrero), and there might be some who may put it in connection with compounds such as *goldsmith*. blacksmith, etc. Should the learner observe the similar consonantal structure (SM TH) in both words, the teacher will be able to confirm that they are in fact related, as they come from the same Gmc root: the *smith* works in the forge, beating red-hot iron on the anvil with the hammer until the material is *smooth*. that is, "[h]aving a surface free from projections, irregularities, or inequalities; presenting no roughness or unevenness to the touch or sight" (OED: s. v. smooth a.). Insistence on the consonantal similarity also allows us to make the student realise how Germanic languages use their vowel systems as a categorial mark: see how the very action of beating the iron even is called dialectally (Northern English) to smeeth, so that we get a three-way opposition noun <i>/i/ ~ adjective <oo> /u:/ ~ verb <ee> /i:/.

It does not seem advisable to over-emphasise this gradation since learners will readily come up with many others once they have assimilated the system and, in any case, this is only one of the several Ablaut processes possible in the Germanic languages. To consolidate *smooth* within the learners' lexicon, there are several well-known activities, especially by stressing its opposition with *rough*, Sp *áspero*. The teacher should stress here the metaphorical uses and collocations of this pair, with examples like *smooth sea* 'free from big waves, calm' vs. *rough sea* 'agitated, turbulent', *smooth wine/ale/cider* 'soft, pleasing to taste' vs. *rough wine/ale/cider* 'acid, harsh to the taste', or *smooth tongue* 'bland language (usu. with bad connotations)' vs. *rough tongue* 'rude, scolding or passionate language'.

This particular pair shows up with some frequency when dealing with metallurgical finish, referring to the quality and outward look of a given edge or cut. We can end this exposition on *smooth* and its relatives by mentioning that the adjective *rough* and the derived abstract noun *roughness* and adverb *roughly* are used in technical English to express 'without precision or accuracy, approximate'.

Note how a vocalic shift resembling that of *smooth* and *smith* appears in the group of words formed by *tap*, *top* and *tip*. The

three of them share the same idea of being the summit, apex or peak of some long object, as denoted by a structure {T P}. Still, each of them is specialized to designate a particular type of extreme point. The first one refers to the long peg used for closing and opening a hole in a cask or a pipe, and comes from the same root (Gmc (weak m.) *tappon- 'a tapering cylindrical stick or peg', cf. oe tæppa, oblique tæppan) as Sp tapa —the latter via an unrecorded Gothic *tappa (DRAE 1992: s.v.). The second term originally referred to a tuft hair on the head (OED: s.v. top n1, sense 1.), and is also recorded in Sp, this time via French (which in turn came from Gmc): tupé, originally a diminutive (Fr toup-et). This term was already used in oe times to refer to the highest or uppermost part of anything, just like in PDE (OED: s.v., sense 2) and, again, Spanish has borrowed this idea from Gmc (via Frankish) as seen from tope, which was used by Renaissance sailors (first recorded in 1587) to refer to the highest part of a mast (Corominas, 1973: s. v.). Tip, finally, has no etymological connection with top, as may be assumed, but it is undeniable that "the proximity of form and relative quality of sound in the two words have caused tip to be felt as denoting a thinner or more delicate top" (OED: s. v.). This particular vowel gradation can also be seen in such pairs as *chip* and *chop*, or *drip* and *drop*.

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Similar remarks to those just given could be offered about a base such as {wr NG}. The word wrong is easily spotted and well-known by most students —if not all, beginners included. Few will link it, yet, to the PDE verb wring 'to twist', to which it is etymologically related, and even less to a good deal of words that belong to the same root but which were formed through the addition of several suffixes to an initial cluster {wR-}, like wrinkle or wrench, and, without the medial nasal and other suffixes like {-st}, or {-th}, wrist, wrest and writhe, wreath. The student will not fail then to notice how the antonym of wrong is right, which originally meant 'straight, not bent, curved or crooked in any way' (OE riht, cf. the Latin cognate rectus), as seen in set phrases like right line or right angle. Hence the development of the meaning 'correct' (< L cor-rectus) which is the more frequent sense of this adjective nowadays (present in that's all right, the right thing to do, etc.).

A similar procedure appears in a noticeable group of PDE words conveying the meaning 'to hold tight' or 'to form into a lump by hand pressure', many of which are very common in EST. Here it is the initial cluster {cl-}, rather than its full consonantal structure, that provides the basis from which to derive words, through the addition of lengthening suffixes in Prehistoric times (see Hirt, 1927: 236 ff.; more precise about the

origin of possible sense nuances is Benveniste, 1935: 148. A modern approach, but necessarily succint, can be found in Szemerényi, 1970: §5.4). Using a suffix {-M}, for example, made it possible to get a word such as clam (oe clamm), while {-T} yielded clot (OE clott) and {-D}, cloud (OE clud), {-P} was used to create clip (OE clyppan), and {-CH} appears in clutch (OE *cluce). One may think that clasp could be added to the list through the addition of a suffix *{-sp}, but in fact this word was called hæspe in Old English: it was the frequency of the cluster {cl-} that modified the etymological form. On the other hand, it is very likely that PDE clough 'a ravine or valley with steep sides, usually forming the bed of a stream or torrent' also belong here, if from the same root plus {-GH}: we should see the ravine here as wrapping or fastening, so to say, the brook beneath. Moreover, these suffixed terms may also be added a nasal infix {-N-, -M-}, as in clump (cf. MLG klumpe, cf. OE clympre), clamp (cf. Du klampe), climb (OE climban), cling (clingan), clench (oe clenc(e)an), and some others.

Next to these formal mechanisms, which must be traced back to Germanic and even to Indo-European times, we should include others related to the history of the PDE word within a strictly English *Sprachgebiet*, monitoring their semantic development through the centuries and putting their different

historical meanings in connection with the parallel discovery of new techniques and/or findings.

A case in hand is *log*. The etymological sense (perhaps taken from some Scandinavian language, see OED: *s.v.* log *n.*) seems to have been 'felled tree', as it comes from the root of *lay* (OE *lecgan*, cf. G *legen*, Dan *lægge*); such original meaning is, of course, still alive in PDE (= Sp *leño*). Such a piece of timber, floating upright in the water, was used by sailors to ascertain the speed of a vessel. The piece of cordage that tied the log to the reel used to calculate that speed was duly called the *log-line* (= Sp *cordel de corredera*), while the different measures were slated on the *logboard* (= Sp *tableta de bitácora*). Those figures were later written down on a daily basis in a journal, the *log-book* (= Sp *cuaderno de bitácora*), with some other particulars of the voyage deserving notice.

This idea of recording the incidents on a periodic basis, originally part of the sailors' jargon, was later borrowed back to other fields within EST, most noticeably into Computers, where the nautical meaning of the verb *to log*, originally 'to enter [...] in a log or log-book' (OED: s.v. log v., sense 5.a) was transferred (*to log in/on*) to indicate a new online access to a computer, as if a new recording in a virtual *logbook* (sense 5.d). Conversely, a new verb *to log out* appeared to indicate

exit from the system, and so were the new nouns *login*, *log-out*.

The case of log is by no mean exceptional within this particular section of EST, quite the contrary. Without leaving Computer English, the students may find it interesting to gather more information about that well-known process called batch process (= Sp proceso por lotes). Few of them will imagine that its origin lies in the field of bread-making, but in fact the meaning of this word during the Middle Ages (ME ba(c)che, from an unrecorded OE *bæcce) referred to 'the quantity of bread produced at one baking'; this idea was then extended so as to be used to refer to anything done by stint. From a strictly phonomorphological point of view, the alternation between the final affricate of batch and the velar of bake is mirrored in many other cases in PDE; the student may do worse than to be well aware of some of those lile l

History provides with an endless repository of facts that could be exploited by the most conspicuous teacher of EST: the several invasions of British soil throughout the centuries, for example, have left their imprint in form not only of solid monuments, but also of many words. Conversely, the colonial expansion during the 18th and 19th centuries put English in

connection with languages spoken in each continent and a certain symbiosis took place that enriched (most of the time unequally) both languages in contact.

A classic example is *Anglo-Indian* (Vermeer, 1969; Yule & Burnell, 1996: xv-xvi), which not only displays a naturally strong lexical influence from the many languages spoken in the English Raj -take, *inter alia*, examples like *bungalow* < Hindi *banglâ* 'Bengali-style house' (Chaturvedi & Tiwari, 1980: s. v.), or *curry* < Tamil *kari* 'vegetable (sauce)' (Burrow & Emereau, 1998: § 1171)-, but also drew from such tongues as Arabic (sahib < sâhib 'lord', Ba'albakki, 1977: s. v.), Malay (*orangutan* < *orang utan* 'jungle man', Coope, 1991: s. v.) or Portuguese (*cocoa* < *coco* 'bugbear'; Soares, 1936: s. v.), usually borrowed *via* Hindi or Urdu.

Other classic examples that have not failed to attract our students' attention have been those related to the Scandinavian element in English, partly due, no doubt, to the adventurous atmosphere depicted in films and novels surrounding the Viking Age, following the trend set forth by contemporary sagas (Gordon & Taylor, 1957: xxx-xxxii). That makes it especially attractive to most male teenagers and even more so in Engineering, where they clearly outnumber females. The Vikings are regarded as the most infamous invaders of the

British Isles, but -contrary to the popular belief- they not only pillaged, raped, murdered and set Anglo-Saxon churches and monasteries on fire, but eventually also settled and tilled the Eastern lands of Albion, presenting the English with a good deal of new words, some of them used in EST. One of such is *odd*. This word has a curious history: it appeared in Middle English for the first time, apparently borrowed from some Scandinavian language, as *odde*, meaning 'that is one in addition to a pair, or remaining over after distribution or division into pairs; constituting a unit in excess of an even number' (OED: *s.v.* odd *a.* (*n.*) and adv., sense I), that is, the equivalent of Sp *impar*.

But the origin of the word lies far from the world of numbers. Old Icelandic *oddi* is cognate to the German *Ort*, Danish *od* 'point, tip, angle' (< Gmc **uzðaz*; Björkman, 1900: 169; Holthausen, 1974: *s.v.* ord). It seems that the original meaning 'angle' was extended in Old Norse so as to denote also that polygon most resembling a simple angle: the triangle. The sense of imbalance, and hence of 'incompleteness', of odd numbers made this word glide into a new sense in English during the Renaissance (note 1): that of 'differing in character from what is ordinary, usual, or normal; out of the ordinary course; extraordinary, strange' (OED: *s.v.*, sense 10.a), which is very frequent

in General English. It is interesting then to compare it to the original sense of its PDE antonym, *even*, which was originally used (and is still nowadays) to refer to something flat, and hence, to something well balanced.

The impact of these languages, and many others, on the English tongue has configured PDE as a hodgepodge of the most diverse and extraordinary influences, ranging from an obvious French ingredient (literally thousands of terms, from aalenian to zut and Zydeco, according to the Oxford English Dictionary -most of them being much more frequent than those!) to some sprinklings of Anuit (kayak, anorak), Guarani (cougar), or Togan (as taboo) (Strang, 1994: 26-32). Although an endless list can be prepared to exploit the etymological method, just a few examples are provided below to start with: beaker/pitcher (cf. Sp búcaro); bug, debug; bulk; hob; clutch, latch; crane (cf. Sp grúa, grulla); gap, spark-gap, stand in the gap, gap-toothed; jack; jet; nozzle/nose; pin/pen; shaft/shave; stretch; switch; wafer (cf. Sp gofre). All the examples used in the preceding exposition are of Germanic stock, but it would be easy indeed to take full advantage also of those borrowed from French, especially if, as in our case, the teacher of technical English has to do with learners whose mother tongue is Spanish.

The ad hoc inclusion of the lexical outline of words such as the preceding ones is useful not only insofar as it can help learners pin down those terms easily within their mental lexicon, but also because it can be handled by the teacher as a buffer to smooth out the transitional period between two activities, or as a safety valve to that well-known weariness that flutters around the classroom as the students lose interest in a task, by drawing new attention to the subject from a different, and unexpected, angle. Since the learning requirements of an EST student are quite different from those of English Philology, it seems obvious that the information tackled by the teacher should be succinct and brought into play only if the word appears in the text being dealt with in that particular session. Within this etymological method, it is convenient to make the students see the importance of Consonantism in the Germanic languages, although this has suffered several noticeable swings throughout History. Let us take for example the similarity between *smith* and *smooth*.

From a practical point of view, it would be advisable for the teacher to have the required information in advance, as it cannot be improvised. Therefore, we are in favour of a slow compilation of materials, which may result in a time-consuming task at an initial stage. However, this is bound to bring about

long term benefits. The procedure consists of a three-stage process: a) the selection of a productive word; b) the search, where possible, for its etymology and/or other related words using lexicons and etymological dictionaries; and c) the keeping of notes in a notepad or on file in a database. In such a way, a large body of material may be compiled over the course of time ready to be used according to specific needs.

3. Results and conclusions

To measure the effectiveness of these techniques, tests were administered to the students enrolled in the subject *Technical English II*. The assessment procedure was carefully designed in order to include all the variables that could directly or indirectly have affected the conditions of learning (i.e. number of groups, same teacher, number of students per class, etc.).

The first variable involves the definition of the experimental and the control groups. In the School of Engineering at Malaga University, students can enrol in two English language courses — *Technical English I* and *Technical English II*, in their second and third year, respectively—. Each of these subjects is offered for students specialising in mechanical, electrical and electronic engineering. For the experiment, we chose mechanical and electrical engineering students of *Technical English I* as the experimental groups (though with a differ-

ent teacher), the electronic counterpart being the control one. These same groups in *Technical English II* were used for testing purposes one year later, an acceptable time-span to observe their vocabulary improvement.

The size of the groups is another factor to consider inasmuch as the number of students actually varies from one to another course, speciality and year, given the optional character of the subjects. For the sake of validity and reliability, we tested two groups of 25 students (mechanics and electricity) against an electronic engineering group of the same size. As for the composition of the groups, the students were selected using their marks in *Technical English I* as the leading criterion, balancing the groups by means of the following proportion: A (sobresaliente) 10%, B (notable) 15%, and C (aprobado) 75%.

The tests were prepared to measure their actual level of English, comprising basically cloze tests and multiple choice exercises, where words which had been dealt with in detail the previous year were included. The analysis of the results leads us to ascertain a general improvement in the students' lexical knowledge, being significantly higher in the experimental groups. In figures, 41 out of 50 students from the experimental groups performed better than their counterparts in the control group, where only nine out of 25 students proved to attain a

similar level of success. No significant differences were noticed between the two experimental groups, even though they had different teachers.

Given the general acceptance of the first two techniques, we will double-check the validity of the more innovative etymological approach. For this purpose, the experimental groups were administered a set of questions for them to explicit all the information they had about words such as batch, wrench, tip, nozzle, clamp, log, strength, length, clench, clip, wring, and others. Most answers showed traces of the information provided during the experimental teaching process. For instance, some students were able to associate batch with the actual baking of bread or even tip with tap and top. Others managed to relate the term in English to its Spanish counterpart (top ~ tope ~ tupé). And finally, others even succeded in relating umlauted/non-umlauted cognates when a particular suffix was involved (such as -th), as in the case of strength ~ strong, length ~ long, etc. We deem that their output confirms the validity of this approach for vocabulary learning.

All in all, the use of the techniques presented so far have led us to draw the following conclusions:

1. The results show an appreciable improvement in the learners' capacity to understand unknown compounds and de-

- rivatives. Minor advances have also been observed when building noun-phrases.
- 2. The warm-up activity boosts paradigmatic and syntagmatic word relations. Likewise, the students' mental lexicon gets activated and re-arranged with new links. The production of utterances to exploit rhetorical functions such as Definitions, Classifications, Descriptions, etc. by using the vocabulary presented is, by itself, a worthwhile activity.
- 3. The etymological component, though a rara avis so far within EST, also offers great possibilities in the teaching of technical vocabulary. Results have shown that the learning of new words is further complemented by these historical clues. A secondary goal is also achieved when the students do not confine themselves to finding out the actual meaning of words in their dictionaries, but they also seek for complementary information about other feasible cognates or related words. This practice is indeed extremely helpful as it eases the learning of new words, speeding up their recall from the mental lexicon.

Some essential restrictions, however, must be underlined with regard to the application of the etymological method. It is recommended not to use this activity widely within the same session, because students may confuse the terms involved and

it may be counter-productive. Experience has taught that only two or three words should be commented upon a single session, taking roughly five minutes of class-time. Methodologically, the activities discussed may be freely allocated in the session according to the teacher's needs, either at the beginning as a sort of warm-up or in-between as a kind of motivating device, as this breaks up the normal class structive calling for the attention of the group. In addition, Latin cognates, in their turn, are not recommended in the case of beginners since students may erroneously think that their meanings are similar. This is, for instance, the case of the Spanish term (a/ con)glomerar (from Latin agglumero/conglomero), aglutinar (from Latin aglutino), globo (from Latin globus), glotón (from Latin *glutto*), *gluten* (from Latin *gluten*), etc. all of which are derived from the same Indo-European root as PDE clip and clamp, but can only be semantically linked through a convoluted process, far beyond the real needs of the average learner of EST. Finally, any reference to Germanic or Indo-European languages or to the explanatory evolution changes should be avoided, with emphasis placed instead on the semantic relationship.

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1. The first recorded use of *odd* with this sense, according to the OED, was in a sermon by H. Smith, dated 1592. It would be tempting to assume that the noticeable sense of harmony and balance that is a foremost feature of this period played a part in this new development. However, it is revealing that the OE word to indicate an odd number contained also this idea of imbalance: *ofertæl* -note that the general word for 'number' was *tæl*. It is perhaps safer to assume that the human mind is almost genetically dual, and that the concept of 'unevenness' does not come easy until the mind is a little mature (Ifrah, 1997: 40).