

# LANGUAGES ARE (LIKE) VISUALS: linguistic considerations and potential usage

**Andrés Palacios Pablos**

Universidad de Burgos (Spain)

apalacio@ubu.es

## Abstract

Consistent with students' increasingly visual cognitive learning style, LANGUAGES ARE (LIKE) VISUALS (LAV) is proposed as a verbo-graphic metaphor applicable to the learning of non-figurative grammar issues of language. Its validity as a special hybrid is assessed and assumed according to some principles of conceptual, pictorial and visual metaphor theories (Lakoff & Johnson, 1980; Lakoff, 1987; Forceville, 2002). To illustrate this proposal, a mapping is outlined, namely WORDS-IN-SHAPES EXCHANGE (WISE). A representation of words in their syntagmatic sequence, WISE is exemplified here with the English verb group, resembling a game based on fitting visual shapes whose rules are adapted and therefore mappable onto the verbal rules. This analogy and its graphical nature particularly suitable to ESP students' academic training can readily ease the system acquisition, thus providing a useful remedial tool for raising learners' linguistic awareness of agreement within the sentence, often a grammatical weakness in ESP. Such is the case with prospective architects and civil engineers, to whom a practical appendix is addressed. Though WISE description takes up most of the paper, some possible teaching and research potentials of this metaphoric visual application are also observed, inviting further study and testing of the expected results.

**Key words:** visuals, non-figurative grammar, verbo-graphic metaphor, English verb, cognitive learning style.

## Resumen

*LAS LENGUAS SON (COMO) SISTEMAS VISUALIZABLES:  
consideraciones lingüísticas y uso potencial*

Conforme al creciente carácter visual del aprendizaje cognitivo del alumnado, se propone EL LENGUAJE ES VISUAL (LAV) como metáfora verbo-gráfica

aplicable al aprendizaje de aspectos lingüístico-gramaticales no figurativos. Se valora su validez, asumiéndose como un híbrido especial según algunos principios de las teorías de metáfora conceptual, pictórica y visual (Lakoff y Johnson, 1980; Lakoff, 1987; Forceville, 2002). Para ilustrar la propuesta, se plantea uno de sus mapas al que denominamos WISE (CONVERSION DE PALABRAS EN FORMAS). WISE es una representación de palabras sucesivas del sintagma, explicada aquí mediante el verbo inglés, a modo de juego de figuras visuales enlazables cuyas reglas se adaptan y reflejan las reglas verbales. Esta analogía y su planteamiento gráfico, particularmente adecuado a la formación académica habitual del estudiante de IFE, pueden facilitar su asimilación, aportando así un recurso paliativo que refuerce la conciencia lingüística respecto de la concordancia gramatical, a menudo una carencia en IFE. Tal es el caso de los estudiantes de arquitectura e ingeniería civil, para quienes se incluye un apéndice aplicado. Aunque la descripción de WISE ocupa buena parte del artículo, también se indican algunas posibilidades pedagógicas y de investigación de esta aplicación visual metafórica, sugiriendo mayor estudio y constatación de resultados esperados.

**Palabras clave:** medios visuales, gramática no figurativa, metáfora verbo-gráfica, verbo inglés, aprendizaje cognitivo.

## Theoretical preliminaries: A justification for grammar teaching in ESP through visual metaphor

Languages systems have been regarded as abstractions of basic human experience relying heavily on our perceptions of the human body (Johnson, 1987). This human-sized conception of languages seems assimilated when, for example, Graham Low wonders whether grammar can be humanised while at the same time recognising that “any language course worthy of the name must have a grammatical component” (Low, 1992: 113). It also invites us, together with Low’s reflection, to ponder over the role of grammar in ESP, which over the last years has paid increasing attention to both discourse and cognitive linguistics. However, while to do otherwise might hinder the benefits of a real communicative method, many ESP university students often fail to command basic but important aspects of grammar, which in turn reduces their personal development for learning the discourse and specific registers of the professional communities they are entering. As brief courses can hardly cover their grammatical needs –sometimes taken for granted at this stage–, teachers speculate on how to provide more means for the revision and practice of such neglected issues while concentrating on the

course specific contents. Thus, although time-consuming, grammar is in practice a necessary component in ESP courses too. As for how to endow it with a human dimension, perhaps the answer should be sought metaphorically in our own perceptions.

After Lakoff and Johnson (1980) laid the foundations for conceptual metaphor theory, linguistics and cognition have become more closely interrelated, enriching some of the former's specialities like pragmatics and, especially, cognitive linguistics. In all of them, metaphor plays an insightful role. Metaphors have been not only prolific in science and teaching but also useful in the language classroom (MacLennan, 1993; Cameron & Low, 1999; Low & Littlemore, this issue). Since Halliday (1985: 322) observed that "it is entirely possible that metaphor has been inherent in the nature of language from the very beginning", his idea of grammatical metaphor has permeated linguistics too, as a frame of reference in the grammatico-semantic domain. As MacLennan suggests (1994), given metaphor's central position in the structure of language and its importance for linguistic change and cognitive conceptual growth, likewise it can be a powerful resource in the learning of grammar and vocabulary. Thus, in ESP, the pedagogical potential of lexical metaphor has been abundantly exploited for specific vocabulary and allegorical meaning (see Caballero (2003) or Littlemore (2004), among others). Similarly, Halliday's (1985) grammatical metaphor has been adopted to explore syntax by mapping unusual patterns of representation between the experiential and syntactic roles (Goatly, 1996). These approaches take advantage of metaphor to direct attention towards the varied specific fields of ESP. However, they mostly deal with figurative aspects of semantics and syntax, somehow leaving other more literal grammatical issues unaddressed. This paper will argue that by using visual materials and metaphor, the teaching of non-figurative basic grammar issues can be both workable and appropriate, although by no means exclusive for ESP.

Pictures, diagrams and other kinds of imagery are typically related to science as useful tools to express numerical data and illustrate often-complex processes. Images make texts more attractive and increase people's curiosity. They have become so popular that their ever-growing use in science has also taken over outside the academic world into our everyday life. Internet and the digital era have promoted hypertext, a phenomenon of decisive pedagogic consequences: students' cognitive learning style is increasingly visual. Likewise, so is academic discourse, which thus has made English for Academic Purposes gradually more interested in these non-verbal elements,

incorporating and explaining them within visual texts (Myers, 2003). A further step might be a deeper exploration and wider usage of visuals in LSP, like the ongoing work with graphic organizers (GOs) as visual representation of discourse markers (Jiang & Grabe, 2007). This line of work should be expanded. For despite GOs or the frequent presence of graphs in grammars and other linguistic resources, language teaching has not yet applied its full potential to illustrate or even uncover some intricacies of languages.

I propose to develop the metaphor LANGUAGES ARE (LIKE) VISUALS (LAV) as a special verbo-graphic device capable of construing language mechanisms and structures diagrammatically. While non-literal layers of linguistic meaning may be susceptible to such representations, LAV is meant to deal with those less figurative aspects where language can be analysed more explicitly, i.e. the structure composing word combinations into phrases, groups and sentences. Based on grammar at these different linguistic levels, some patterns of unit association can be retrieved that allow for arrangements that graphically emulate them. Here I will focus on English at word level, more particularly on its verb system, a frequent source of problems for ESP students who tend to show weaknesses in word-order formation and agreement. It is assumed that while the morphology of a word normally depends on the word's own variability, at the sub-clause level it is also determined by its surrounding context. As we shall see later on, LAV can be illustrated from this assumption by approaching the English verb through WORDS-IN-SHAPES EXCHANGE (WISE), a visual mapping representing words as they normally combine (examples are found in appendix and figures). It has been called WISE because of its connotations as a word and because the acronym remarkably captures what the metaphor LAV is about, the challenge of decoding modern languages through graphic representation.

Somehow, from a functional-morphological view, words within the verb group resemble a typical pattern of information flow where, like in a relay race, some code is passed on from a team member to the next. A closer example to verbal behaviour is dominoes, a game based on a numerical sequence where the backward number of a token matches the forward number of the previous one. Of course, verb systems are more complex than dominoes as is certainly the proposed scheme, where instead of a numerical correspondence, the link between successive words will be shown through a system of fitting visual figures. Since this graphical transfer could at times be awkward, neither LAV nor WISE consistency is guaranteed

unless the pedagogical results somehow exceed the generated tension, which leads us to metaphor theory and cognition.

Indurkha (1991) presents the distinction between an object (or environment) and its representation (or cognitive model) as the key feature of cognition theory to discuss the different modes of metaphor. In metaphors a nonconventional cognitive relation is formed from a source model (here the visual representations of LAV or WISE) to a target environment (the linguistic object). Our WISE proposal for verbs seems an example of Indurkha's (1991) syntactic metaphors because the process of creating the cognitive relation between visuals and verbs is highly mediated by our representation of verbs. Hence, devising these proposed visuals will be feasible provided the verb associative patterns really exist, are well known and a way is found to translate verb grammatical rules into our graphic system. However, when considering other linguistic associations, there may not be such clear functional-morphological patterns to map onto visuals and therefore the resulting metaphor might as well belong to a different mode: "In suggestive metaphor, the target model is used only to provide an initial ontology for the target environment. In projective metaphor, the target model is completely disregarded ..." (Indurkha, 1991: 25). But whatever their category, LAV and WISE seem likely to grant some of Indurkha's (1991) metaphor cognitive advantages, whether an easier access to the target environment, the potential to highlight or downplay part of it, suitable generalizations to organize the target model, the abstraction to construct new models, or even the insights to create new perspectives about the target environment.

To assess the theoretical foundations of LAV, it is essential to determine its own nature as a verbo-graphic metaphor. The analogous ground that first allows establishing its rationale is the shared quality of both languages and visuals as communicative systems, both with extensions onto the distinct means of sound and image. If languages have a graphic counterpart in the written form, it is common for visuals to have one in sound. Accordingly, the analogy allows bridging of the different code channels so the nexus can grow stronger, yielding the necessary means to later map what supports its metaphorical grounds. Carroll (1994: 190) provides a conceptual approximation ("visual metaphors use pictorial or otherwise visual devices that suggest identity in order to encourage metaphorical insight in the viewers") and Forceville (2002) explains that verbo-pictorial metaphors in advertising arise when one of the two related terms is rendered pictorially and the other verbally. But neither is LAV strictly pictorial, in the sense of

depiction, nor is it meant for advertising. Besides, Forceville (2002) refutes two of Carroll's (1994) reflections that partially suit our verbo-graphic image, prototypical visual hybrid nature and prototypical target-source reversibility. Whereas LAV's hybrid nature is certainly one of its most distinctive characteristics, its reversibility needs clarification since LAV's flow is conceived to go from visual source to linguistic target while, simultaneously, the former's design results from the latter's analysis. However, as Indurkha (1991) explains, a metaphor's source domain can be constructed specifically for didactic purposes. Thus, rather than an asymmetrical version to understand the graphs in terms of the linguistic representations, it is LAV's versatility that lets us illustrate language and its grammatical (or sometimes ungrammatical) representations (see Appendix, Figure 10, Task G).

Lakoff's (1987) perspective on image versus conceptual metaphors is also well worth considering. We can subject LAV to his reasoning and wonder to what extent visuals are mappable onto languages. Paraphrasing his analysis perhaps we can state that although there is a source image of visuals (as descriptive resources), there is no image mapping because (languages being abstract, complex mental concepts) there is no target image for it to map onto. But equally we can recognise the powerful conceptual metaphor that maps commonplace knowledge about visuals onto students' frequently blurred idea of grammar. The mechanism that enables this knowledge mapping onto our linguistic target is the common conceptual metaphor UNDERSTANDING IS SEEING. Taking advantage of this, we can feel challenged to deploy LAV and WISE to draw on students' visual knowledge to help them learn non-figurative grammar. Thus, LAV also has a multi-modal nature. Whether it is conceptual, visual, grammatical, verbo-graphic or an assorted hybrid may not be so important as how correctly it is employed. Research on this area has a long way to go. Arguably, some could say that what is presented here as a special metaphor abounds in anomalies and might be, instead, just an overwrought analogy of uncertain reach. But, as Forceville (2002: 9) claims, "far more significant than falsity or anomaly for a definition of metaphor is (...) the notion of target *in terms* of source".

## **Words-in-shapes exchange (WISE)**

In this section, WISE is exemplified with the English verb. All the above references do logically provide some theoretical insight, but the form

assignments that proceed follow my own practical intuitions to develop a metaphorical transfer of functional and morphological performance onto graphical linkage. First, to adapt WISE to any verbal system so that it both works and really fulfils the suggested metaphorical mapping, it is necessary to outline the peculiarities of that particular system. It should be remembered that some English verbs may belong to more than one type, not simultaneously but consecutively, i.e. in different positions or occasions. This is a crucial distinction for WISE because rather than forms in themselves it will represent their functional status. On the one hand, like in dominoes, all shapes representing verbal words always have two sides: one back or entry-face that receives and carries the code of the preceding element, and one front or exit-face that in turn imposes its own mark onto the following shape. However this transmission goes necessarily forwards so that, unlike in dominoes, these faces are not interchangeable: backs are always backs and fronts are always fronts (notice the different arrows in a) and b), Figure 1).

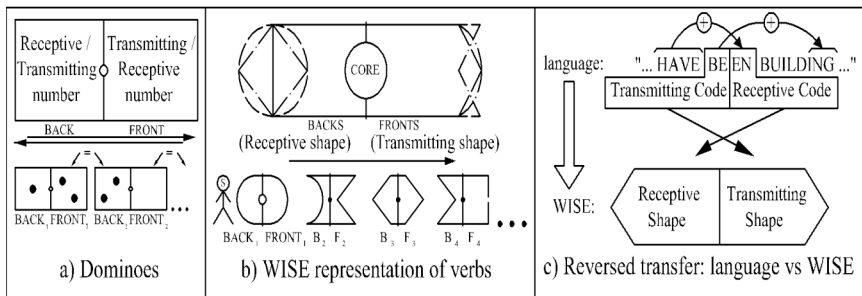


Figure 1. Structure and information transfer: dominoes, WISE and language.

On the other hand, this shape transfer between backs and fronts is somehow at odds with what actually happens in language. Except for other pragmatic uses, verbs normally convey their functional value through their own morphology; in turn, that morphology comprises two marks for each verb within a verb group (VG), corresponding to the transmitting and receptive codes that enable a linguistic flow of information. To graphically reproduce that transfer, WISE reverses the places where the transmitting and receptive codes of each verbal unit linguistically occur within the word. Take for instance the utterance “have been building” (see c) in Figure 1): the transmitting forward code of “been” is its first part, the base “be”, which is

nevertheless represented in WISE as the second; and similarly its receptive code that adapts to “have” is in its last part, in “-en”, again being represented inversely –i.e., in first, back position.<sup>1</sup>

Since my proposal involves acquiring the grammar of its visual system, and since that effort should pay off for the language development, some significant principles are deliberately pursued: conciseness, by only including indispensable elements; generalization, by unifying under the same graphic solution those symbols denoting the same concepts; autonomy, by producing a scheme whose complexity is decomposable into simpler frames, each representing independent objects; and structure, by giving each of those subunits a structure of its own, reasonably easy to remember and to associate to their linguistic correspondence. Whenever possible, this mnemonic strategy is improved by choosing relatively simple quasi-natural forms whose cross-cultural connotations can also relieve the learning and comprehension of WISE and its linguistic target. Thus, while horizontal lines convey a sense of stability, arrow-like triangles show movement or direction, and circles may connote inalterability.

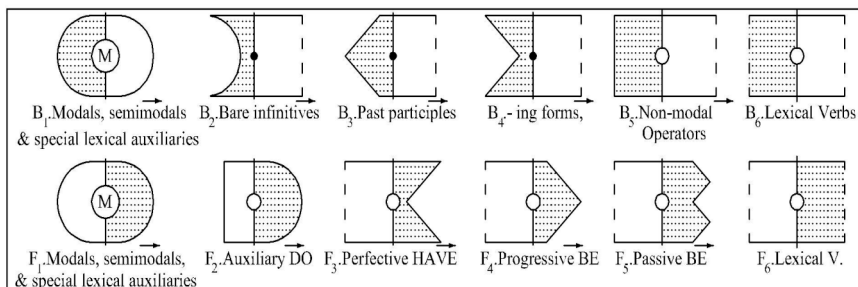


Figure 2. Possible backs (modals, non-finite forms, non-modal operators and lexical verbs) and fronts (modals, auxiliaries DO, HAVE, BE and lexical verbs).

To assign each type of verb its specific shapes, I initially consider the fact that the three non-finite simple forms of verbs are the only possible forms (save TO-infinitive) that take non-initial position in any extended VG. Hence they are regarded as the three fixed receptive backward links and each of them is allotted a differentiated back. Since their occurrence is usually determined by the preceding verb, i.e. by each of the different types of auxiliary –no matter its current form or relative position within the VG– we can establish this visual analysis so that the auxiliary fronts match one of the three mentioned backs.



Firstly, being invariable in English, modals are always depicted as flattened fixed round shapes, with both front and back remaining semicircular (B1 and F1 in Figure 2). Thus, just reproducing a somehow inverse outline from a modal front, bare infinitives always have a forward semicircular back (B2 in Figure 2). Secondly, the auxiliary DO –marker of present and past simple tenses when in negative or interrogative form, as well as of past and present emphasis– must have a forward semicircular front (F2 in Figure 2) too, as it is also followed by the bare infinitive. Thirdly, the perfective HAVE is given a backward angled front (F3 in Figure 2), somehow resembling an arrow pointing to the past, the way the perfect aspect covers an indefinite period up to a particular time reference. Hence past participles always have backward angled backs (B3 in Figure 2). Finally BE is provided with two different fronts, depending on whether it participates in the VGs as progressive or as passive auxiliary. As a progressive marker BE is represented with an angled front pointing forwards (F4 in Figure 2), thus suggesting its dynamic, progressive sense. As a result, the –ing participles always have a forward angled back (B4 in Figure 2). As passive auxiliary, BE is followed by past participles and therefore has to match their back while differing from the perfective HAVE: thus, it is distinguished with a front shaped like a zigzag line pointing backwards in its middle (F5 in Figure 2). These assignments so far settled are fixed unchanging contours and, as such, WISE assigns them continuous lines. That is also the case of non-modal operators, which being the first element of the VG, show a fixed continuous vertical back (B5 in Figure 2). All the as yet uncommented drawing sides in Figure 2, including the lexical verbs (B6 and F6 in Figure 2), are variable contours and consequently portrayed as broken lines.

All in all, this allocation of shapes gives enough graphic information to visualize the four basic verb combinations (Fig. 3) as they are usually acknowledged (see, for instance, Quirk et al., 1985; Downing & Locke, 2006).

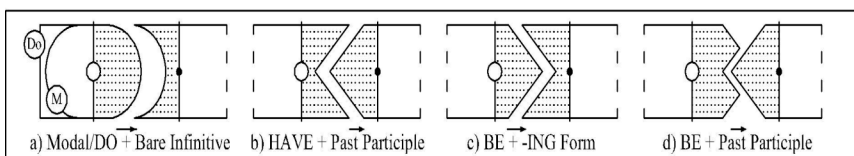


Figure 3. The four basic verb combinations.

However WISE description can be improved. In English, tense and modality are conveyed by the VG first element (the operator in extended structures) and, as a rule, they are reciprocally exclusive so that modals and tensed verbs never co-occur. But whereas both modal and non-modal auxiliaries can function as operators (O), only non-modal operators (and lexical verbs appearing alone) can fulfil the subject-verb concordance, a quality rarely displayed in English. This operative disjunction can be indicated through the circular core of the first shape representing the VG, although here it is not always used.<sup>2</sup> The operator, at any rate, becomes an element of utmost importance in this language as, unlike lexical verbs, “it carries the four ‘NICE’ functions of Negation, Inversion, Code (substitution) and Emphasis” (Downing & Locke, 2006: 317). In addition, it is with the operator that contracted forms –another distinctive and easily depictable English feature<sup>3</sup>– mostly occur. Also worth observing, WISE description of VGs can distinguish three types of discontinuity depending on the interrupting non-verbal elements and their morphological effect in the verb assembly:

- (a) Parenthetical or non-affecting discontinuity, that of subject, adjuncts, intensifiers and negative items like NOT. As these intervening elements do not affect the functioning within the VG structure, they are presented with a variable shape that replicates forwards into the following shape whatever preceding front contour (see a) in Figure 4). They are, so to say, a parenthesis that reminds us of the double tokens in dominoes. Needless to say, this assignment allows representing interrogative and negative inversion without betraying the principles so far stated.
- (b) Sequencing or conjoining discontinuity, performed either “by the linking words AND, OR and BUT; without any linking item; or by a combination of both when more than two events are related” (Downing & Locke, 2006: 331). As the conjoined events share the same subject, occur in sequence and are related semantically, this discontinuity typically appears between lexical verbs (the last element of the VG) although occasionally it is also seen between modals, as in “I can and must do it”. These links involve an ellipsis and morphologically can be interpreted as a fork with the linked verbs duplicating their functional form (see b) in Figure 4).
- (c) Phasing discontinuity, a possibly arguable case of verbal-sequence interruption as it is engendered by adding a preposition or the TO-

infinitive, often to link catenatives to second verbs, creating a dependent, two-phase relationship. In any case, since both prepositions and TO-infinitives behave in English distinctively, the former being followed by the *-ing* form and the latter by bare infinitive, WISE assigns them matching shapes. Thus, prepositions are drawn as forward arrow-like triangles, while TO-infinitives as D-shaped semicircles (see c) in Figure 4).

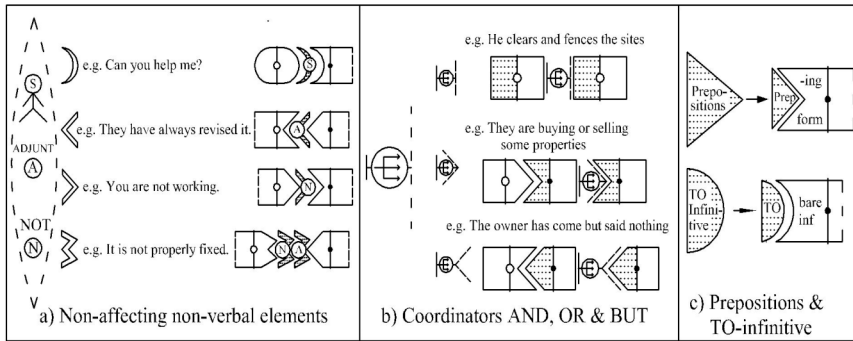


Figure 4. Intervening non-verbal elements, prepositions and TO-infinitive.

I have already referred to the WISE shapes of the primary verbs (F2 to F5 in Figure 2). However, some verb types still remain to be described. First, there are a few exceptional verbs like the semi-modals *NEED* and *DARE*, normally lexical verbs that in certain uses behave as modals and as such have their front and back semicircular shaped (B1 and F1 in Figure 2), the same as the special lexical auxiliaries “had better”, “would rather” and “would sooner”.<sup>4</sup> Second, the shape assignment of the TO-infinitive allows us now to focus on lexical auxiliaries and catenatives. The same forward round front of modals can also be allocated to the lexical auxiliaries resulting from *HAVE* (have to, have got to) and *BE* (be able to, be about to, etc.), provided they are taken –even if only for operability’s sake– as a whole integrating the TO-particle (see a) in Figure 5). Thus, WISE adjusts to the versatility of the primary verbs, which, apart from performing as specific auxiliaries or lexical verbs, in the case of *BE* and *HAVE*, furthermore, they can combine to work as lexical auxiliaries. Third, the shapes of TO-infinitive and prepositions also allow a picture of catenative structures (see b) in Figure 5), different chain-like sequences that symbolise a complex event consisting of two phases.

Midway between lexical verbs and auxiliaries, catenatives share with the lexical auxiliaries the ability to generate connected series of non-finite constructions.

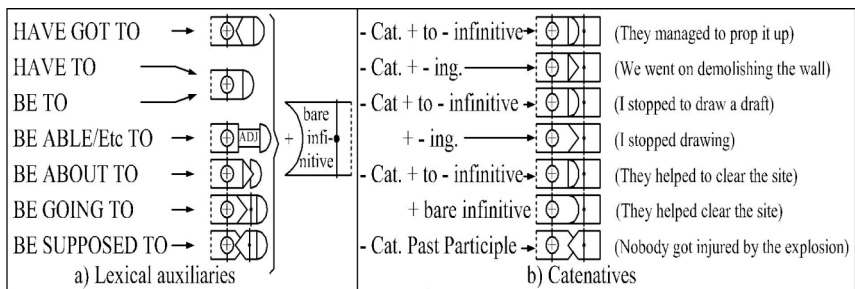


Figure 5. The structural pattern of lexical auxiliaries (of HAVE/BE) and catenatives.

This whole performance, resulting from the morphological forward transfer in VG structure, is not only a paramount characteristic of WISE (each type of auxiliary has a distinguished fixed front—see F1 to F6 in Figure 2) but also reminds us of something grammarians are unlikely to leave unnoticed. Thus, Quirk et al. (1985: 151) state “The different complex verb phrase types are ‘telescoped’ into one another”; even those who do not explicitly mention it seem to suggest it. For example, Huddleston (1984: 130) writes “one very important principle governing the structure of the VP is that each auxiliary determines the inflectional form of the following verb”; and Downing and Locke (2006: 328) pertinently recover it with its due relevance: “each semantico-syntactic feature of a complex VG (tense and modality, perfect, progressive and passive) is expressed, not by one element only, but by each element telescoping into the following one”. These grammarians illustrate it with the fixed order of the alphabet letters ABCD, where a certain feature may be omitted, as in ACD or BD, but cannot follow another appearing later, as in \*BA. Hence we can take any complex VG now, like that in “This site must have been being developed for years now”, and indicate its alphabet and telescoping arrangement (Quirk et al., 1985; Downing & Locke, 2006) together with our own visual version as shown in Figure 6.

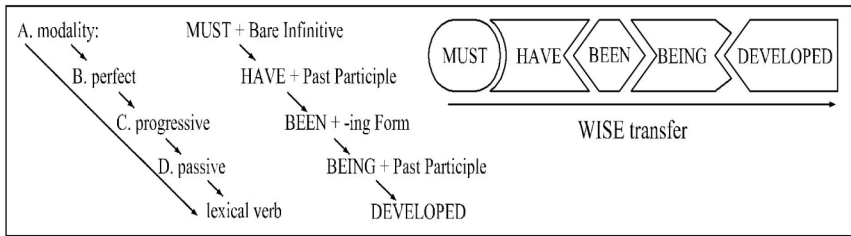


Figure 6. Alphabetic/telescoping arrangement of verbs and WISE representation.

The fact that utterances of this type (“been being”) are rather uncommon does not mean they cannot occur whenever the situation requires them (see 18) in Figure 10). However, though grammatically correct, they tend to be awkward. ESP teaching therefore should pay more attention to shorter VGs, more common in both written and spoken language, particularly in technical contexts. Anyway, the combinations are perceptively numerous as the result of bringing together different grammatical meanings. In addition, they often combine with lexical auxiliaries, which can be telescoped successively and occur quite freely provided they are followed by an infinitive.<sup>5</sup> This, together with the linking possibilities of certain lexical verbs as catenatives and the resourceful semantics of phrasal verbs, results in an amazingly rich verbal system.

So far my focus has mostly been on finite VGs, being the basic structures that articulate the language. But as suggested before, all the verbs following the operator are non-finite. Without tense and modality, either simple or extended, these forms can be found both within conjugated finite groups and as phrases existing by themselves though dependent of the main clause. Yet, since they only differ at a syntactic level<sup>6</sup>, WISE does not make any more distinctions concerning finiteness at this stage.

I have advanced an account of WISE in an intended logical progression, gradually adding the improvements that enable us to represent most frequent English VG structures. An appendix is provided to further exemplify its teaching potential.

## Application and concluding remarks

If we take advantage of the students' abilities and academic profile used in the study, then prospective architects or engineers are particularly suited for these techniques as their specific training makes them much more conscious of and keener on visual features. Thus, the possible complexity of the resulting shapes is not necessarily an obstacle to help them understand the verbal system. Although the scheme was not implemented experimentally until last year and the results have yet to be thoroughly measured, they seem to support this hypothesis. Of the two groups experimenting with this method, third year Technical Architecture and first year Civil/Highway Engineering students, the former, despite a two-year gap in English learning, achieved scores as good as –if not better than– the latter, who took the English course without any interruption. A better technical background to appreciate shapes might explain this contrast.

The game-like appearance of WISE, based on graphical shapes, simplifies the learning of the system and makes people more aware of the reach of agreement within the VG. Applied to the English verbal system, WISE allows explaining graphically all the verbal categories at work, improving students' linguistic awareness and competence on verbal production. Applied to modals, for instance, the WISE scheme clearly shows their restrictions, because as their invariable round shapes illustrate, they cannot adapt to the changes necessary after any other verbal shape (for example, 25) in Figure 10).

Not only does WISE follow the basics governing English verbal occurrence, but it also has the ability to make them graphically explicit. This allows us to easily express to which category even the most versatile verbs BE and HAVE belong in every instance. This visual account not only facilitates the understanding of the verbal system. Additionally, it makes us comply with its fixed telescoped order and suggests some new perspectives of study and pedagogical patterns. Although WISE is probably more suitable for beginners (for example with children, using different coloured templates), it is nonetheless also useful for false beginners and for those who want to revise grammar. For teaching purposes, the simpler the system usually the better (see Figures 1-3), whereas for researching purposes it works inversely, the more sophisticated and detailed, the larger scope it covers and the more and deeper insights it allows. So that not only can the degree of systematization vary for the scheme but its variation determines its own

rigour and reach. Hence, different options might be adapted to the target group's knowledge and, equally, to the type of purpose, whether instruction or research. As for research purposes, visuals on their own do not necessarily imply research. But they can definitively help to explain the mechanisms of language, project other research insights into graphical form and, consequently, play a vital role in both linguistic pedagogy and research. Their contribution, which has already been enormous to science, can equally be significant to our approach to languages. Thus, LAV and WISE developments could turn into an innovative resource for interdisciplinary work and eventually a likely interface metaphor.

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**Dr. Andrés Palacios Pablos** is a lecturer in English language and English for Specific Purposes at the Escuela Politécnica Superior of the University of Burgos. Within the scope of Language for Specific Purposes, his main research interests include the pedagogy of ESP with a particular focus on the pedagogy of reading and writing skills.

**NOTES**

<sup>1</sup> Comparing language and WISE, the latter palpably seems an easier and more direct system of information transfer. In fact, it might be argued it is an even more natural way to transmit data, thus language being the reversed system. In this case WISE would be undoing the linguistic inversion to graphically redo a more logical semiotic communication. This linguistic inversion might be related to the fact that language is not only about conveying verb grammatical values alone, but also about communicating lexical meaning, which is normally done through the verb base. But in any case there is an inversion between the two compared systems that perhaps can explain why this graphical representation (indeed a special kind of verbo-graphical metaphor) had not previously been explored.

<sup>2</sup> Modality could itself be the goal of another system of WISE representation, although it would require a non-morphological study of its own peculiarities and would necessarily yield a different outcome. Here, because of space limitations, modality is only drafted within the modal operator core, along with that other option first verbs have for showing tense and subject concord (see Figure 7).

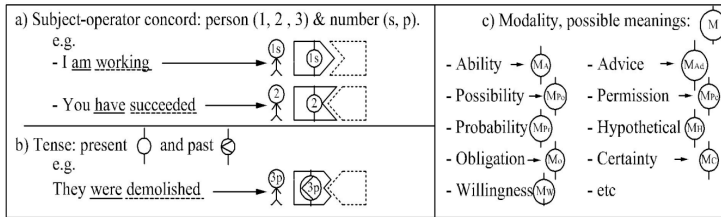


Figure 7. Grammatical values expressed in the first core: modality or subject concord and tense.

<sup>3</sup> Yet perhaps less relevant here for its predominant role in casual or spoken language (see Figure 8).

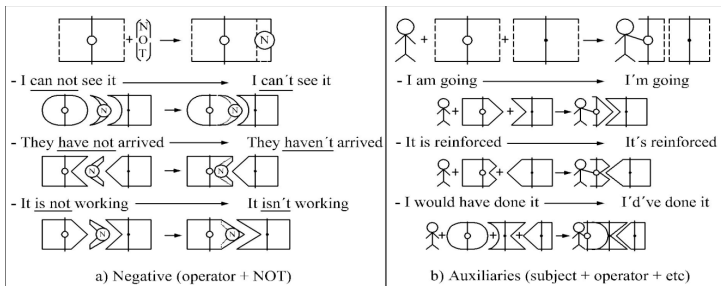


Figure 8. Abbreviated forms: negative and auxiliary contractions.



<sup>4</sup> The scheme works quite well when analysing standard utterances in indicative mood. In certain cases, however, some verbs do not totally fulfil my graphical description. The semi-modal “used to”, for example, usually employs the operator DO in negative and interrogative clauses (see F in Figure 10). But rather than for exceptions, this visual interpretation is meant to generalise and graphically construe the mainstream English verbal system. Yet most frequently, even uncommon instances like some subjunctive usages could be portrayed satisfactorily. Accuracy in WISE is a question of adjusting its system, whenever possible, to cover anomalies.

<sup>5</sup> This bars any combination with modals, although usually there are some acceptable alternatives using synonym lexical auxiliaries instead (for example, “are likely to be able to succeed” replacing “\*are likely to can succeed?”). These restrictions and their grammatical equivalents can be well illustrated by WISE (see D in Figure 10). They can be regarded as linguistic compensations where functional incompatibility (here mapped onto a graphic one) is answered through semantic means.

<sup>6</sup> An application of WISE at clause level would logically require assigning different shapes to the constituents of the sentence, an underdeveloped possibility here that could be materialised following similar procedures (see Figure 9).

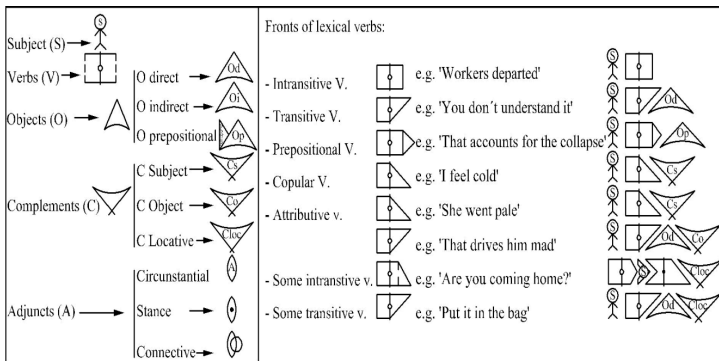


Figure 9. Main elements of the clause; a draft towards a syntactic use of WISE.

## Appendix

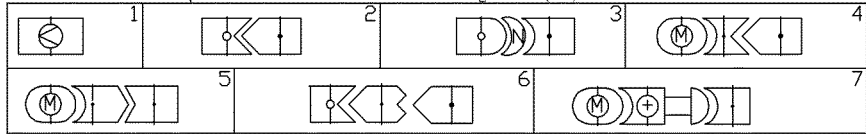
The following examples (Figure 10) have been adjusted to ESP for Architecture and Civil Engineering, but their potential reach is by no means so restricted; quite on the contrary, its general approach is not only adaptable to both general English and other ESP fields but also applicable in teaching other languages with their own specific WISE schemes. Notice that, unlike in clause analysis, the indication of subject concord is optional in WISE VG representation. Tasks A to C ask students to graphically construe some VGs according to their form and function, B adding the insertion of inter-verbal adverbs, and C integrating an active-passive conversion. Task D asks to identify, represent and correct several common mistakes (thus, examples 22 to 26 in the following exercise dossier are deliberately erroneous), whereas inversely task G asks to detect impossible WISE sequences, suggest valid ones and exemplify them linguistically.

Providing the assignment of shapes is correct, grammatical/graphic errors can easily be detected using WISE because shapes must fit into each other and therefore no space other than a parallel corridor should be shown in between two consecutive verbs. Hence triangular and circular forms -save those of modals- can vary their degree of angle or arch, in order to show that parallel corridor (a typical case when VGs have intervening non-verbal elements, as in B, Figure 10). Finally, tasks E and F ask to form different groups from several examples according to their structural/graphic structure, indicating their particular semantic/functional values. Sorting activities draw students' attention to the patterns of language and therefore can be suitable to introduce new structures and differentiate similar ones.

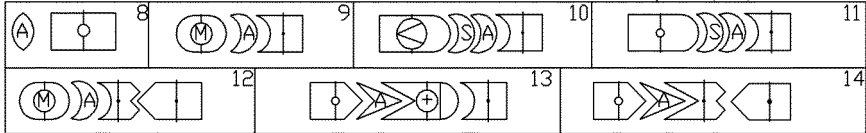
### Exercises dossier:

1) The accident happened due to the operator's carelessness. 2) The weakness in the formwork has created an unnecessary risk. 3) Normally, apprentices do not work alone. 4) The surveyor should have analysed the soil. 5) The council inspector must be studying the project. 6) The properties of insulators have been improved enormously. 7) The subcontractor may be liable to pay the repairs. 8) Skilled technicians GENERALLY assist all parts of the building process. 9) Civil engineering projects must ALWAYS undergo environmental impact studies. 10) Did the subcontractor TRULY run his own business? 11. Doesn't the site agent REALLY manage the site on a day-to-day basis? 12. Sites must OFTEN be surveyed thoroughly. 13) The general foreman has JUST had to resign. 14) Lighter trussed structures are PRESENTLY being developed with polymer alloys. 15) The manager is unlikely to be employing unskilled workers. 16) Next January, the enterprise will have been growing for a decade. 17) Better aggregates should have been selected for the bridge foundations. 18) A new dam must be being erected for the expected water supply increase. 19) With those cracks, the bearing walls must have been about to collapse. 20) The highway tunnel may be about to be bored. 21) Longer spans have had to be used for the indoor swimming pool. 22) \*They are currently poured concrete into the forms. 23) \*He resolved it by reinforce the truss. 24) \*The use of machines has improving their productivity enormously. 25) \*Considering his expertise, should he can find a solution? 26) \*Computers must employed to calculate all the different stresses. 27) He's going to work as a quantity surveyor. 28) We're having a meeting this evening. 29) Our architect is designing the new showroom. 30) They are going to replace the old sewage pipes. 31) Building materials used to be less versatile. 32) We did not use to work on shifts. 33) Workers usually have a break at noon. 34) Consultants are used to offering advice. 35) Asbestos was used for insulating walls.

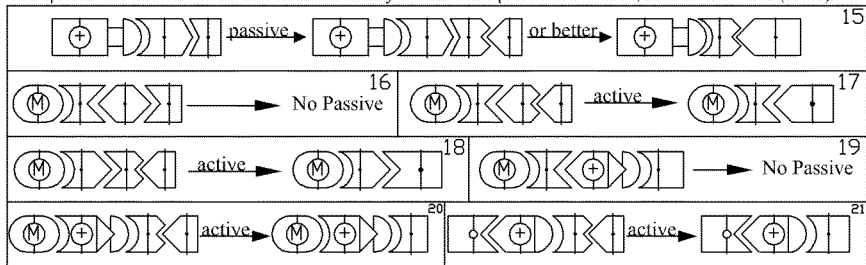
A. Indicate the WISE depiction of the VG structure in the following clauses.(1-7)



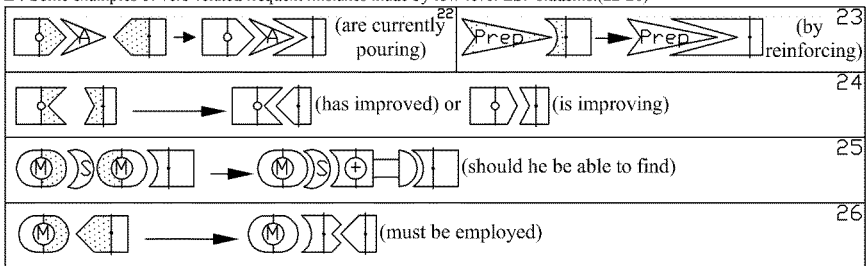
B. Insert a suitable adverb within the VG structure of these clauses and then show their WISE picture. (8-14)



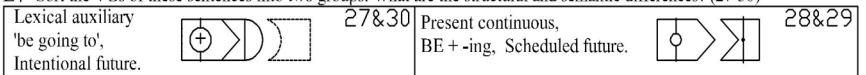
C. Depict the VG structure of the next clauses. Can they be turned into passive/active? If so, show it with WISE (15-21).








D. Some examples of verb-related frequent mistakes made by low-level ESP students:(22-26)



E. Sort the VGs of these sentences into two groups. What are the structural and semantic differences? (27-30)



F. Sort the VGs into groups, indicating the semantic and structural differences (use WISE). (31-35)

Semi-modal USED TO, past habit:  31	Semi-modal USED TO, lack of past habit:  32
Lexical HAVE, simple present, habitual habit:  33	BE + adjective USED + prep. TO + -ing, present habit:  34
Passive of lexical verb USE, past usage:  35	

G. Say whether these are possible WISE pictures, replace those nonexistent and illustrate each linguistically.





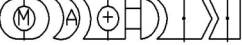
 Yes, e.g. "The quantity surveyor is calculating the volume of required materials." 36	 No, modals are followed by bare infinitive: e.g. "A dam must be erected." 37
 Yes, e.g. "The building license is due to be issued." 38	 No, Progressive BE is followed by -ing form: e.g. "He is reinforcing the truss." 39
 Yes, e.g. "Concrete merchants can no longer be certain to be expanding their market." 40	

Figure 10. A brief sample of possible exercises using WISE (meant for ESP for Architecture / Civil Engineering).