



**Diccionario bilingüe de metáforas y metonimias científico-técnicas.
Ingeniería, Arquitectura y Ciencias de la Actividad Física / Bilingual
Dictionary of Scientific and Technical Metaphors and Metonymies.
Engineering, Architecture, Physical Activity and Sports Sciences.**

Georgina Cuadrado-Esclapez, Irina Argüelles-Álvarez, Pilar Durán-Escribano, María-José Gómez-Ortiz, Silvia Molina-Plaza, Joana Pierce-McMahon, María-Mar Robisco-Martín, Ana Roldán-Riejos, Paloma Úbeda-Mansilla (eds).

London & New York: Routledge, 2016. 510 + Ixii pages. ISBN: 978-1-138-86005-6.

The book under review is the product of a research project undertaken by eight specialists in language teaching and linguistics in the well-known Spanish Engineering University – Universidad Politécnica de Madrid. In the first place, it is an English-Spanish and Spanish-English dictionary of vast scope, bringing together in one volume the specific terminology of all the engineering and science fields mentioned in the above title. It systematically ascribes each and every entry to the field/s where they are operative, additionally specifying subfields within the overall field and providing translations dependent on field of usage: e.g. “bank” ~ (constr) [civil eng] *peralte*; [aer eng] *alabeo, ladeo, inclinación lateral*; [comp sci] *grupo, bloque*; (rivers) [geog, geol] *margen* (page 252). Consequently, it fulfills basic English-Spanish, Spanish-English dictionary needs for all those involved in engineering studies and practice and those concerned with translation to and from these languages in those fields. A major asset of the dictionary is that it not only focuses on individual words but provides a wealth of lexical combinations and phraseological units that are inherent to the specific discourse of the different fields. Moreover, the authors’ methodological decision to include entries not only on the basis of one headword of phraseological units but of different lexical components of those units will act as a user-friendly device

greatly facilitating the task of looking up such complex units: e.g. “automatic feed” [aer eng] *alimentación automática* (page 248) and “feed, automatic-” (page 325); “chute finger”, ~ (mach)[indr eng] *dedo guiador* (page 281) and “finger, chute” (page 328); “extrusive sheet” ~ (vulcanol)[geol] *capa de lava* (page 320) and “sheet, extrusive” (page 451).

From the foregoing considerations, the work can stand as a valid conventional English-Spanish, Spanish-English dictionary for all the specific engineering and science fields it embraces. Moreover, the dictionary is copiously illustrated with photographs, drawings and sketches which are as didactic as they are elegant. While this would be a justification of the dictionary in its own right, that end is not its most salient nor its overall pursuit, rather, the driving force behind the work is utterly innovative and has to do with the academic record of the authors. Over the years, these language practitioners and researchers had been publishing studies on several aspects of the discourse of the different engineering fields. Their practice and research convinced them of the existence of productive patterns underlying that discourse and that these were particularly informed by metaphor and metonymy. A research project enabled them to undertake a systematic study across the discourses to analyse and document this conviction. That study allowed them to discover over-arching metaphors in all fields and they show that these metaphors with their respective sub-metaphors and linguistic realisations permeate engineering language use and particularly contribute to the coherence and cohesion of that discourse.

As empirical source, they used not only existing dictionaries but, interestingly, they also counted on specialist journals in the respective disciplines. Their analysis is well argued both from the vantage point of Spanish and English in the introductions in both languages (pages xl-li & lii-lxii) and in the specific pages interspersed throughout the dictionary where they analyse, document and explain the different metaphor clusters and patterns discovered in the different engineering disciplines (see pages v-vi for lists). As a characteristic example, I could cite the over-arching metaphor CIVIL ENGINEERING STRUCTURES ARE LIVING BEINGS (page 261) which in turn evidences sub-metaphors such as CIVIL ENGINEERING TECHNIQUES ARE MEDICAL TECHNIQUES where we find, among others, the following linguistic metaphors applied to buildings: *rehabilitation, lifespan, curing, healing, rejuvenating agent*. Or a further sub-metaphor CIVIL ENGINEERING PROBLEMS ARE MEDICAL PROBLEMS where linguistic metaphors include: *abrasion, swelling, cripple*,

stress, fatigue, blister, pathology, decay, skin friction, bleeding. As a characteristic conceptual metaphor in Spanish, I could cite *EL ACERO ES UNA PERSONA* evidencing linguistic metaphors characterizing steel as *vivo, sano, envejecido, muerto, templado, tenaz, activo, inactivo*, among others. Particularly interesting are their observations on the similarities and differences between the metaphors found in each language. This focus is a major innovation for a dictionary in the field of engineering and could inspire further works of this kind in other languages.

There are many other characteristics making this dictionary a highly recommendable work that will appeal to diverse audiences. I would especially like to underscore what it has to offer linguists of varying approaches. It is clearly of core interest to linguists of the current approaches to Metaphor, but it also provides abundant resources to researchers working in, for example, applied linguistics, contrastive linguistics, historical linguistics and sociolinguistics and indeed those working on phraseology or cultural specificity.

While the dictionary is synchronically focused, diachronic approaches are not eschewed: for instance, particularly interesting is the mention of the decline of *parla mediterránea*, a veritable naval lingua-franca in the Mediterranean basin, as documented in Timoteo O'Scanlan's first dictionary of naval terminology in Spanish in 1831 (pages xlvii-xlviii). Many further research issues of specific discourses along historical lines suggest themselves. For instance, it would be exciting to consider how vestiges of the distant past combine with renovation to keep abreast with the evolution and technological developments taking place within the world of each engineering or scientific field. Such historical considerations could reveal crucial contrastive differences. For one thing, the different languages articulating the more primitively established engineering fields (for example, mining, agriculture, or civil engineering among others) are far more likely to evidence more substantial contrastive differences than those of more recent developments. For example, the Anglo-centred driving force of the recent burgeoning of telecommunications and the language eclosion it spawned may mean that the specific expression of this industry and its disciplines in different languages are much more heavily influenced by English, rather than evolving from within the cultural paradigms of the languages in question. Thus, while the linguistic resources for long established specific disciplines and practices largely evolved from within their own languages, the linguistic resources for telecommunications in those non-English languages may

evidence far more extensive borrowing. The potential for research on this issue deriving from the resources provided by the dictionary under review is indeed enormous.

Among other striking features evident from the dictionary entries is the parsimony of original expressions, especially where metaphorical elements are involved. These are capable of synthesising very complex meaning in few words while their translation may require the employment of far more laboured forms in order to capture all the nuances encapsulated by such expressions in a transparent manner: e.g. “locked-in stall ~ [aer eng] *pérdida de sustentación por un incremento repentino del ángulo de ataque*” (page 381), or “grandfather rights ~ [aer eng] *derechos adquiridos por un operador de líneas aéreas regulares en un determinado aeropuerto*” (page 341).

Equally striking is how specific discourses tap ordinary vocabulary to articulate specific meanings: e.g. common words as *acero* (page 4) and its combinations have 43 entries, or *agua* and combinations (page 8) 38 entries, “eye” (page 320) 32 entries or “face” (page 321-2) 50 entries. Amongst other striking contrastive features is the productivity of the Spanish word *alma* (page 15) which counts on 15 entries for the word and its combinations with a main meaning focus of core or centre while the corresponding word in English, “soul” (page 461), has a mere single entry.

In summary, the dictionary is an innovative and major contribution to research and provides abundant language resources, not only for practitioners and researchers in the fields of engineering and science but also for many different fields of linguistics.

Received 07 September 2016
Accepted 30 September 2016

Reviewed by **Michael White**
Universidad Complutense, Madrid (España)
white@uclm.es