

## EXPLORING THEORETICAL FUNCTIONS OF CORPUS DATA IN TEACHING TRANSLATION

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**Abstract:** As language referential data banks, corpora are instrumental in the exploration of translation solutions in bilingual parallel texts or conventional usages of source or target language in monolingual general or specialized texts. These roles are firmly rooted in translation processes, from analysis and interpretation of source text to searching for an acceptable equivalent and integrating it into the production of the target text. Provided the creative and not the conservative way be taken, validation or adaptation of target text in accordance with conventional usages in the target language also benefits from corpora. Translation teaching is not exploiting this way of translating that is common practice in the professional translation markets around the world. Instead of showing what corpus tools can do to translation teaching, we start our analysis with a common issue within translation teaching and show how corpus data can help to resolve it in learning activities in translation courses. We suggest a corpus-driven model for the interpretation of ‘business’ as a term and as an item in complex terms based on source text pattern analysis. This methodology will make it possible for teachers to explain and justify interpretation rules that have been defined theoretically from corpus data. It will also help teachers to conceive and non-subjectively assess practical activities designed for learners of translation. Corpus data selected for the examples of rule-based interpretations provided in this paper have

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been compiled in a corpus-driven study (Poirier 2015) on the translation of the noun 'business' in the field of specialized translation in business, economics, and finance from English to French. The corpus methodology and rule-based interpretation of senses can be generalized and applied in the definition of interpretation rules for other language pairs and other specialized simple and complex terms. These works will encourage the matching of translation study theories and corpus translation studies with professional practices. It will also encourage the matching of translation studies and corpus translation studies with source and target language usages and with textual correlations between source language real usages and target language translation real practices.

**Keywords:** Specialized translation. Teaching; corpus. Sense discrimination. 'Business' interpretation.

## EXPLORACIÓN DE LAS FUNCIONES TEÓRICAS DE CORPUS EN LA ENSEÑANZA DE LA TRADUCCIÓN

**Resumen:** En su calidad de bancos de datos de referencia lingüísticos, los corpus son fundamentales a la hora de buscar soluciones de traducción dentro de textos paralelos bilingües o de buscar usos convencionales en lengua origen o meta dentro de textos monolingües generales o especializados. Estas funciones están estrechamente relacionadas con los procesos de traducción, desde el análisis y la interpretación del texto origen hasta la búsqueda de equivalentes aceptables y su integración en la redacción del texto meta. Siempre que sea de manera creativa y no conservadora, la validación o adaptación del texto meta según las convenciones de uso de la lengua meta también saca provecho de los corpus. La enseñanza de la traducción no parece estar explotando esta manera de traducir, que es una práctica común en los mercados de traducción profesionales de todo el mundo. En el presente artículo, en lugar de mostrar lo que las herramientas de corpus pueden aportar a la enseñanza de la traducción, comenzamos analizando un tema común dentro de la enseñanza de la traducción y mostramos cómo datos extraídos de corpus pueden ayudar a resolverlo mediante actividades de aprendizaje en el aula de traducción. Proponemos un modelo basado en el análisis de corpus de patrones textuales en lengua origen para la interpretación de *business* como término y como elemento de términos compuestos. Esta metodología puede ayudar a los profesores a explicar y justificar las reglas de interpretación definidas teóricamente a partir de los datos de corpus, así como a concebir y evaluar objetivamente actividades prácticas diseñadas para estudiantes de traducción. Los ejemplos que aparecen en este artículo se han obtenido de un corpus compilado

en un estudio anterior (Poirier, 2015) sobre la traducción de *business* en el ámbito de la traducción económica, comercial y financiera del inglés al francés. La metodología y las normas interpretativas del sentido pueden generalizarse y aplicarse a la definición de las reglas de interpretación de otras combinaciones lingüísticas y otros términos simples y compuestos. Este trabajo pretende favorecer la adaptación de las teorías de los estudios de traducción y los estudios de traducción basados en corpus a la práctica profesional, así como a los usos en lengua origen y meta, y a las correlaciones textuales entre los usos reales de la lengua origen y la lengua meta producida en el marco de prácticas reales de traducción.

**Palabras clave:** Traducción especializada. Enseñanza. Corpus. Distinción de sentidos. Interpretación de *business*.

## 1. Introduction

Since the 1990s and the seminal paper by Baker (1993), research in translation studies has been cross-fertilized by corpus linguistics with new methodological analysis and comparisons applied to compiled groups of monolingual corpora and bilingual parallel corpora (segments of source texts aligned with their equivalent segments in target language translated texts). Methodologies of corpus linguistics have been tested scientifically and empirically on numerous issues in translation studies. Those issues were norms and laws of translation (Baker 1993, Toury 1995 and Zanettin 2013), translating techniques at the word and lexicogrammatical levels as well as at the discourse and genre levels, training of translators and learning translation, as well as research in contrastive phraseology. As shown by Laviosa (2011), two complementary trends have emerged in this new paradigm in translation studies: an earlier, more theoretically oriented, descriptive approach, and an applied approach developed later and focused mainly on practical issues such as contrastive linguistic analysis and language pedagogy. These two trends in translation studies have developed to match with what Tognini-Bonelli (2001) later called corpus-based and corpus-driven approaches. In the words of Hanks (417), corpus-based research “seeks to support preconceived theories with judiciously

selected examples from a corpus”, while corpus-driven research “attempts to approach corpus evidence with an open mind and to formulate hypotheses and indeed, if necessary, a whole theoretical position on the basis of the evidence found.” In this paper, corpus methodologies developed for the definition and resolution of a practical translation teaching issue is closely associated with the latter approach.

## **2. Theoretical background and purpose**

In the field of translation teaching, numerous authors such as Zanettin (1998), Bernardini (2002) and Rodríguez-Inés (2009) in corpus translation studies (CTS) have rightly highlighted the benefits of corpus uses in the translation teaching class and in learning. While there is no doubt that corpus methodologies improve the translation competency of learners, there is no specific connection of corpus uses in the classroom with traditional translation learning curricula as described in contemporary translation teaching methodologies such as Kiraly (2000), Delisle and Fiola (2013), Gile (2005), Hurtado (1999), Kelly (2005), Baker (2011) and Munday (2012). At most, the design of traditional translation courses contain activities consisting of using parallel or monolingual corpora for the purpose of making students aware of what these tools have to offer for source or target language-related knowledge (language usage) in connection with translation. One way to explain the weak presence of CTS in most recent teaching methodologies is to consider, like Gavioli (22) did for language teaching, that CTS has been applied in teaching translation in order to know what corpus-based methodologies can do to translation processes and not to practical translation learning issues:

It is necessary though to distinguish between studies which look at teaching applications of corpora from the linguist’s point of view (giving hints and suggestions about what corpora can do for language teaching) and studies which look at uses of corpora

from the teacher's point of view (starting from a teaching problem and looking at how this problem can be tackled with corpus tools).

To the best of our knowledge, this new approach to language teaching has never been applied in translation studies and more specifically in the teaching of translation, which has similarities with second language learning. The corpus-driven model and methodology presented in this paper will illustrate this new approach and will show how corpus data can contribute to the resolution of concrete translation teaching problems. We first describe one specific translation problem to address in translation teaching courses, and we provide many examples of how this problem can be tackled with corpus data. These examples may also serve to operationalize meaning-based decisions to teach and to learn in the classroom. For practical purposes, the teaching translation problem is provided from a recent study (Poirier, 2015) which provided corpus-driven data on the interpretation rules of the lexical item 'business', both as a unitary expression and in complex terms of which it is a constituent. This paper presents examples of rule-based interpretations that can serve to design enriching learning activities. By developing and exploring this new approach suggested by Gavioli (2005), this paper also aims at making pedagogical activities and topics in specialized translation more in line with concrete translation problems and difficulties professional translator experiment in their daily tasks. In this sense, the corpus methodology provides a new empirical connection between professional translation issues, translation description models, and data-based evidence.

### **3. Practical issues in translation teaching**

Before examining what corpus data can do to help resolve teaching problems, we should first ask ourselves what are the most common practical issues in teaching translation that need to be tackled in class. There is a difference between what those issues are

in general, that is, without any consideration to language-specific issues, and the most common translation problems encountered in specified circumstances; such as translation from language A to language B, or from language B to A, in a particular country with its own linguistic and cultural norms. The question should be formulated along the lines of Williams and Chesterman (26), who asked: “Are there ‘universal problems’ which (almost) all trainees encounter?” The problem with this question is that to come up with empirical answers requires taking into account relevant language-specific facts on translation from which to deduct or compile universal problems in translation. If we were not looking for empirical facts, there are lots of universal problems about translation on which we could direct learners’ attention such as the early suggestion of Kussmaul (102) that “successful translation is often nothing else but the verbalization of our comprehension.” This principle encapsulates an interesting hypothesis, but the hypothesis can hardly be validated or invalidated and, in the context of teaching and learning translation, is not easily tested in progressive and step-by-step learning activities.

To aim at more empiricism, many researchers in translation didactics and teachers of translation have worked on curriculum design and suggested that it should be objective-driven (Delisle and Fiola 2013, Beeby 1996) or competency-driven, mostly in the wake of the PACTE research group (Hurtado Albir (ed.) 1999, Kelly 2005). Except for the competency approach, curriculum design studies are not addressing the issue of universal practical translation problems, and even in the competency approach, universal translation problems are kept at an abstract level, with strategic sub-competencies as general as the identification of translation problems, decision-making, translation knowledge, and even rich-points in texts (PACTE group, 2005). Although interesting in a theoretical exploration of translation competencies, a similar approach does not yet allow to present learners with concrete and progressive problems (from easier to more difficult ones) they can resolve. Others, like Kiraly (2000), have taken

a very distinctive approach to curriculum design with the social constructivist approach. However, this approach is again centered more on the form of teaching and learning (social dimensions of translation with collaborative learning, social appropriation of knowledge, scaffolding and how to teach translation with classroom sessions, constructive assessment) than on the practical content and issues that need to be addressed in a translation classroom.

Another author, Baker (2011), has centered her teaching on equivalence at different levels (lexical, grammatical, textual and pragmatic). Although very different from Vinay and Darbelnet (1977) early works, which is updated today in a Canadian teaching approach (Valentine and Aubin 2004), this approach based on equivalence is in line with traditional linguistic and comparative studies. The concept of equivalence seems to be a promising candidate for practical issues in translation teaching. However, the absence of a generally agreed and conventional definition of equivalence, and its permanent relativity and total dependency on linguistic and cultural “factors” as stated at the beginning of the book (5), makes it infeasible to validate the approach empirically and systematically for translation teaching and learning purposes. Echoing this difficulty in the definition of equivalence, Munday (2012) has adopted a more critical and theoretical approach which ends up, among many other theoretical considerations, with theoretical criticisms of the concept of equivalence, but without any suggestion of concrete, universal and practical issues in translation teaching. To be fair, the book is designed for learning the theoretical concepts and the discipline methods and tools of translation studies and not of translation per se. Still, although interesting, translation studies are not directly linked to the core language-specific competencies of translators from language A to language B and, again, it cannot be used to tackle translation teaching problems in class.

Gile (2005) describes practical translation issues such as the understanding of the source text, the quality of the target text as an autonomous text and the faithfulness of translation in its relation

to the source text. This work is interesting for teaching translation because teaching issues are structured by closely following the sequential process of translation, and further suggest a sequential model of translating. Because of its interest in the translation process, this contribution offers an intrinsic and genuine point of view on practical issues in teaching translation. As regards the tackling of translation teaching problems, this work offers a more theoretical approach, and as such it does not provide practical translation problems and solutions to be used in translation classes. Scarpa, 2010 (translated into French by Marco A. Fiola) provides interesting subjects to be included in the definition of practical issues in translation teaching: register differences between general and specialized language, lexical repetitions, (textual) connectors, information structure and organization, morphosyntactical strategies and nominal style of expressions (in specialized translation). These problems, although interesting, still need to be operationalized through corpus data and methodologies.

An interesting addition to these practical translation issues to be addressed in the classroom is the avoidance of interference which can be considered, according to Scarpa (125), as a translation universal. This practical issue in translation is especially important in certain world areas such as Canada (see for example Brunette, 2003) which include vulnerable linguistic communities and languages<sup>1</sup>.

As a valuable tool to validate or invalidate empirical hypotheses, corpus methodology has been largely overlooked in most theoretical approaches to translation teaching and in the tackling of various subjects listed in the above overview. Also, most issues that have been tackled in relation to translation teaching have been very theoretical and abstract to the point where

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<sup>1</sup> This is what we tried to tackle in the project InterSys on interference in four languages in language and translation teaching (Casanovas et al. 2014). With a few corpora in different languages, we were even able to draw a detailed classification of types of interference which could apply in four different languages.



even language directionality of translation operation has become irrelevant. One very practical issue closely related to language directionality of translation that has not yet been addressed through corpus data is the sense discrimination and correct interpretation of words and lexical items for the purpose of their translation. In this paper, we demonstrate how corpus data can help to develop and test empirical hypotheses on the interpretation of lexical items which is an important translation problem to address in translation teaching courses. As regards meaning transfer, sense discrimination of words and lexical items is a critical competency in translation that needs to be taught in the early stage of the curriculum. Indeed, an incorrect understanding of words and lexical items, especially in specialized translation, may lead to very serious meaning errors such as a misinterpretation of source text and nonsense in the target text.

#### **4. Sense discrimination**

In relation to the issues of meaning analysis and dictionary uses as identified in Kussmaul (1995, chapters 4 and 5), this paper deals more specifically with the theoretical functions of corpus data in designing learning activities to tackle translation teaching problems such as sense discrimination and interpretation for translation purposes. Sense is defined as the precise meaning a lexical item has when used in a precise context. In other words, sense is the meaning (among a series of potential meanings) of a lexical item which is expressed in a phrase or a larger context. Sense discrimination is the process required for understanding and reading any text. It refers to the process of source language interpretation and textual inference for the correct identification of sense in texts or segments among a conventional list of known and potential senses. The understanding and correct identification of new lexical item senses (as in neologisms) are a related issue not specifically addressed in this paper because the description of this process is logically

consequent upon the identification of known senses (even though there is no certainty on how new senses are identified in practice).

Technically, sense discrimination is similar to Word-Sense Disambiguation (WSD), defined by Stevenson and Wilks (2003) as “the process of identifying the meanings of words in context”. As explained in Poirier (2015), the use of the term “word” is misleading as regards the lexical items of language since many so-called words (such as idioms and expressions) may, in fact, contain several ‘words.’<sup>2</sup> For that reason, we prefer to use sense discrimination or lexical item sense discrimination instead of “word sense discrimination.” WSD’s applications are rules designed for machine decoding or reading of a text and aim at increasing the output quality of machine translation. Although systematic and rule-based, sense discrimination process as used in this paper is not intended for machine natural language processing but for human translation learning and teaching. Unlike WSD too, sense discrimination in translation is carried out by second-language speakers since professional translators most usually translate from their second and non-native language to their native or near-native language. In this case, some native-like subtleties of lexical item senses and usages encoded in complex terms and expressions are not easily decoded. Usual sense interpretation encoding rules and inferences for native speakers may be linguistically or culturally out of reach for second language speakers and readers from other linguistic and cultural backgrounds. Teachers of translation must be aware of this when designing practical learning activities. In this particular case, they may share pedagogical tools and goals with second-language teachers.

For translation purposes, any error in sense discrimination is likely to produce erroneous translation and source language

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<sup>2</sup> Furthermore, most if not all traditional words are constituent of idioms and complex terms which can be considered words too. In Poirier (2015), we suggested to use word forms or lexical units to refer to lexical or linguistic items used together to form idioms and complex terms.

interferences, for which there is zero tolerance in professional translation services. Erroneous translations may result from the wrong interpretation of lexical item senses in the source text. Interferences can result in attributing a non-existent sense to a target language lexical item or in using a lexical item combination in complex terms and expressions which are non-existent in target language norms of usages. This last type of interference is also called a calque (Delisle, Lee-Jahnke, and Cormier 1999). Because erroneous sense discriminations inevitably result in interferences or translation errors, this issue needs to be addressed in the translation class, especially in specialized translation where specialized languages and general language may provide further types of interferences involving at least three different sets of norms: general language standards applied to the communication situation, a specialized language standard relevant to field of specialization of the text to be translated, and a second specialized language standard from another field of specialization for which senses and word combinations vary contrastively with the first field of specialization. For example, the specialized term ‘interest’ as described in TermiumPlus has different meanings (and correspondents in French and partly in Spanish too) in common-law English (“rights in property not being estates”), financial English (“Payment made at a specified rate for the use of borrowed money”) or even in investment and accounting (“The participation or share a stockholder has in a company”) that all are different senses from one of the general English senses of ‘interest’ as described in Wordnet 3.1 (“a sense of concern with and curiosity about someone or something”). Many English words have different senses according to the special field of knowledge in which they are used: property (legal, academic English and real estate), benefit (finance, public services), set (mathematics, concrete curing, tennis or physical fitness training), and so on.

As explained above, a fundamental condition for teaching and learning activities focusing on sense discrimination is the

requirement of a list of conventional and potential senses from which learners may identify and select the correct lexical item sense used in a precise phrase or context. This list is often dictionary-based but for specialized translation purposes, terminological data banks could, in theory, contribute to the conventional list of senses. In practice, several problems arise when teachers want to provide for their learners a complete list of senses that can be associated with some key concepts. As explained in Poirier (2015), an important issue regarding the creation of a list of specialized senses of lexical items is the arbitrary convention of describing simple lexical item senses in general dictionaries, even if the senses belong to specialized fields of knowledge, and of describing complex term senses built with non-specialized but productive lexical items in terminological data banks. What these problems show is that for translation teaching purposes, any learning activity based on sense discrimination needs to be designed with a list and a description of conventional source language senses to serve as a standard for conventional usages, and for unconventional usages to deduct from this norm (as in the exploitation of norms, Hanks, 2013).

For the purpose of this paper, and leaving these problems aside, we will use the material and the list of conventional senses we used for the study of the interpretation rules of 'business' in simple and complex terms in Poirier (2015). Table 1 presents a conventional list of the most common specialized senses of 'business' as retrieved from general and specialized monolingual dictionaries of English. The table identifies eight specialized senses of the term 'business' used as a unitary item or constituent part of a complex term in texts specialized in economics, business or finance. The senses are organized according to the conventional list of senses of the term.

**Table 1:** Conventional list of specialized senses of *business* from Poirier (2015)

<p><b>1</b> Occupation, profession, trade; administrative tasks or duties: <b>a</b> a professional occupation, ex.: <i>sb's business, line of business</i>; <b>b</b> administrative duties (especially of a public organization such as parliament, government, committee or council), ex.: <i>order of business, other business, domestic business, parliamentary business</i>; <b>2</b> Activity of providing goods and services: <b>a</b> series of activities for a commercial or economic purpose, ex.: <i>primary business, core business</i>; <b>b</b> volume of commercial or economic activity (as measured by revenues, transactions or orders), ex.: <i>a lot of business, good business, new business</i>; <b>c</b> people or entities which generate activities; clientele, patronage; the volume of activities gained from them, ex.: <i>a shop's business, to retain existing business</i> <b>3</b> A profit-making entity or group of entities or people working in a profit-seeking environment: <b>a</b> specific business concern, ex.: <i>local businesses, build, start, run a business, small businesses, medium-sized businesses</i>; <b>b</b> the group of all profit-making entities and their role in society, ex.: <i>business members of an association; the world of business, studies in business; district of business</i>; <b>c</b> group of entities sharing similar activities or operations (a subgroup of business <b>3b</b>), ex.: <i>showbusiness, real estate business, music business</i>.</p>
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This listing of conventional senses associated with the various usages of specialized word-forms in simple and complex terms can be done with any other key concept or term used in a specialized field of knowledge. The creation of a list of conventional senses could apply to specialized usages of many important concepts such as 'industry', 'manager', 'executive', 'sale(s)', 'trade', etc. as regards economic, business, and financial translation. In fact, for translation teaching purposes, it would be logical first to start with terms and concepts that are prone to interferences and translation errors. It should be clearly stated that the organization of senses such as the one provided in table 1 does not aim to be a definitive statement on the organization of senses in the source language, but a practical organization of senses for translation teaching purposes.

## 5. A corpus-driven model for sense interpretation and translation

Simply put, a corpus is “a collection of texts that are the object of literary or linguistic study.” (Kenny, 2009). Texts are processed together for the purpose of studying the occurrences of one or several “strings of characters” (tokens). To make empirical and statistically valid hypotheses or observations on them, strings of characters need to be processed in groups by a concordancer, a tool that “retrieves all the occurrences of a particular search pattern in its immediate contexts and displays these in an easy-to-read format” (Bowker, 53). As regards the sense discrimination problem, strings of characters offer a stable access to meaning with monosemous words but are highly problematic in the case of polysemous words which have several senses associated with the same form or string of characters. Polysemous words are by far more numerous than monosemous words. For this reason, sense discrimination is a problem for translation teaching that is recurrent and even more relevant due to the widespread use of computer-aided translation tools and electronic processing of texts.

In order to have a better knowledge of senses for interpretation purposes (to establish correct interpretation rules for each sense), one would have to rely on the semantic annotation of corpus occurrences of senses in the source language, in order to discover and describe theoretical rules of interpretation and translation that would then be implemented in practical learning activities. For this purpose, it would be ideal if concordancers could process meanings and senses as well as strings of characters. Unfortunately, this meaning-based searching functionality in texts is non-existent and also seems out of reach for the foreseeable future. In practice, meaning-based translation rules are simply derived from token senses used as equivalents of source language senses. In many cases, one single lexical item will be used as a super-equivalent to serve as a generic translation in place of all its synonyms. Such is the case, for instance, with the word “entreprise” in French

used as the meaning-based equivalent of ‘business’ and which has synonyms (“société”, “compagnie”, “entité”, “groupe”, etc.) and quasi-synonyms (“groupe commercial”, “division”, “filiale”, “service”, etc.).

The corpus methodology can be used to operationalize sense discrimination in the classroom and to create instructing material to be used in practical translation exercises. To do so, translation teachers have to create monolingual annotated corpus data with which they may uncover interpretation rules based on sense distributions in texts. This first step is preparatory since its purpose is to define the instruction material to be used in class (i.e. sense discrimination rules to be used in learning activities). We have shown elsewhere (Poirier, 2015) how translation teachers can annotate corpora to uncover specialized senses of ‘business’ as a unitary lexical item or as a constituent of specialized terms and expressions. Since we were concentrating on very productive interpretation rules of business as a constituent of specialized terms and expressions, a small corpus of 301 tokens made it possible to uncover most interpretation rules regarding main senses of ‘business.’ The analysis also showed specific senses and interpretation rules that need further validation with a larger corpus. This work allowed us also to establish correlations of senses with textual, semantic and linguistic features of the lexical item ‘business.’ We are reproducing below the interpretation rules that were deduced from the corpus data collected in that previous work. What we would like to do in this paper is to present how this material can serve in the design of empirical learning activities on sense interpretation. Most of the rules in table 2 are conditional or if-then rules which are logically simple to apply.

**Table 2:** Theoretical interpretation guidelines of the term *business* (adapted from Poirier 2015)

- 1 When ‘business’ lexical item appears in a specific complex lexical item (such as *do business*, *mean business*, *business-to-*

- business*), it is part of a conventional expression or compound that need to be listed and translated as idioms (with their global meaning).
- 2 If ‘business’ lexical item is used in the plural, the sense is 3a and is generally associated with a proper name. In some rare occurrences, when the entity has no proper name, the sense could also be 2a.
  - 3 If ‘business’ lexical item is a head noun, the sense may be 2a, 3a or 3c. In order to distinguish the three potential senses, the following conditions need to be checked.
    - a. If the modifier refers to activities known as standard industry activities (insurance for example), the sense of ‘business’ lexical item is 3c “group of entities sharing similar activities or operations.”
    - b. If a possessive is part of the complex term that ‘business’ lexical item is a constituent of, ‘business’ sense is either 2a or 3a.
    - c. If the head noun has a proper noun otherwise specified in context, if the modifier is a proper name, is an adjective or a generic noun not part of standard industry activities (such as “an export business”, “a family business”), the sense of ‘business’ lexical item is 3a “specific business concern.”
    - d. Otherwise, if the modifier refers to activities that are illegal, condoned or of non-economical nature, the sense is 2a “series of activities for a commercial or economic, or other, purpose”.
  - 4 If ‘business’ lexical item is a modifier, the sense may be 1a, 2a, 3a or 3b. The following conditions need to be checked.
    - a. If the modifier is a determinative modifier and not an attributive modifier, the sense of ‘business’ lexical item is 3a.
    - b. If the head noun refers to objects or circumstances happening in one’s duties or functions (such as traveling or working), the sense is 1a (a professional occupation).
    - c. If the head noun refers to people, functions or concrete



- projects associated with a specific business entity or concern, the sense is 2a.
- d. If the head noun refers to people, functions or abstract objects or projects not associated with a specific business entity but to an undefined group that implicitly includes most if not all business entities of a community, the sense is 3b.
  - e. If the head noun refers to academic topics, studies or competencies, the sense is 3b (special use of this sense as an academic discipline or field of study) [this sense also appears in unitary occurrences, see below]
- 5 If 'business' lexical item is a unitary expression preceded by the determiner 'the', 'business' sense is 3c.
  - 6 If 'business' lexical item is a unitary expression not preceded by a determiner but preceded by the prepositions on or for, *business* sense is 1a. When preceded by the preposition in, *business* sense is 3b.
  - 7 If 'business' lexical item is a unitary expression not preceded by a determiner or a preposition, the sense may be 1a, 2a, 3a, 3b, 3c. This situation describes the most ambiguous occurrences of *business* lexical item in complex terms.
    - a. In the case of 1a, no specific pattern correlates with this sense. More corpus data need to be analyzed in order to make interpretation rules in correlation with textual features.
    - b. In the case of 2a, 3a, and 3b, semantic features of the referential meaning of the sense seem to be correlated to each of the unitary use of the senses. If preceded by a possessive, *business* sense is either 2a or 3a (3b and 3c are excluded). In the case of 3b, two interpretations are possible, one based on a referential feature for the sense 3b as a group of profit-seeking people, and another one based on contextual features for the sense 3b that was identified as a discipline or academic field of study.
    - c. For 3c, the two unitary expressions found in the corpus suggest a contextual reduction or concentration closely related to the *passpartout* words identified by Gerzymisch-

Arbogast (1989)<sup>3</sup>. The presence of a correct contextual expansion is a textual feature of this sense used as a unitary expression.

The interpretation rules defined above from a systematic analysis of random tokens of the term in a small corpus may, therefore, help to “tackle” translation teaching problems such as sense discrimination of business which is mandatory for the correct translation of this item as a unitary lexical item or as a constituent of a complex lexical item. In the next section of the paper, we will give several examples of the activities that can be created for the translation classroom (online or onsite) to allow teachers to teach and learners to learn how to translate the word ‘business’ precisely in most of its specialized usages in economic and commercial texts.

## **6. Sense discrimination rules for dummies**

There are several ways to apply the interpretation rules described in table 2 in the design of learning activities focussing on sense discrimination acquisition for translation purposes. The use of the term “dummies” means that the interpretation rules of business can be applied following simple if-then or conditional logic which is normally available to anyone. Although these guidelines are not translation rules per se, they are an essential prerequisite for translating English business terms in English without errors and interference in the second language (French for instance), as explained above.

A first and rather obvious learning activity that could be based on the application of the interpretation rules in table 2 is the finding of which rule applies to new occurrences of business in simple and

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<sup>3</sup> According to the author, those are common simple words standing for and used in the specialized sense of the longer complex term they are part of, such as “assets” being used either in the sense of “tangible fixed assets” or of “movable fixed assets”.

complex terms. In the examples below, the purpose of the learning activity would be to indicate which sense of ‘business’ from the conventional list of specialized senses of business in table 1 is used according to the interpretation guidelines and rules in the table. The operating mode could be for learners to start with the first rule and test if the conditions apply to the occurrence being evaluated. For example, provided that the compound ‘business-to-business’ appears in the list of idioms in rule 1, or that learners are otherwise aware that ‘business-to-business’ is a compound noun, they could read the following occurrences<sup>4</sup> of ‘business’ and determine that the sense of the compound noun ‘business-to-business’ is used, even if, for instance, the compound is not hyphenated.

1. “They have also changed **business to business** interaction through e-commerce.”

This occurrence is a good example of the productive use of simple senses in the creation of a complex term. Here the sense of both occurrences of business is clearly 2a. Still, the compound **business-to-business** is described in many terminological data banks and specialized dictionaries as an autonomous lexical entity having its sense and also having a special abbreviated form (B2B). A good indication that the compound ‘business to business’ is a distinctive entity is that no other rule than rule number 1 in the interpretation rules of table 2 may apply to the first occurrence of ‘business’. Since it is also very productive (re-used in the creation of complex terms of which it is a constituent of), it seems logical that the expression should be an idiomatic compound for which there is no internal analysis of meaning to be done and that therefore require being listed as a specific sense.

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<sup>4</sup> The following examples are real examples taken from the corpus of Poirier, 2015 or from the corpus of Davies, 2015, or adaptation of real examples found in these corpora.

In the next occurrence, learners should recognize the plural form and then apply the interpretation rule no 2 which allows for two possible senses: 3a or 2a.

2. “With the decline of both iron and coal, Aberdare has become reliant on commercial **businesses** as a major source of employment. Its industries include cable manufacture, smokeless fuels”

In order to make the choice between sense 3a or 2a, the learners will need to take into account that 3a is the strongest interpretation potential even if there is no presence of a proper name co-occurring with business (as it is often the case) and that sense 2a is probably not in use in this occurrence, even if (or because) there is a small probability of this interpretation<sup>5</sup>. Extended corpus data on the distribution of both senses in this context (plural form) would certainly help to make the interpretation choice between sense 3a and 2a more rule and content based, and less probabilistic.

In the next occurrence, learners should identify the application of rule no. 3a and deduct from there that the sense of ‘business’ in this occurrence is 3c as defined in the conventional list of specialized senses of ‘business’ in table 1.

3. “A lot of people came into the airline business.”

The set of rules no. 3 are focussed on the identification of specific senses of ‘business’ when this concept is having the head noun syntactic role in a nominal phrase. Rule no. 3 has several secondary rules to check for. The first secondary rule applies to the nature of the modifier used with ‘business’ as the head noun. For

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<sup>5</sup> This assessment of probabilities is based on the number of occurrences for each sense as opposed to the total number of occurrences of the same form of the term ‘business’.

instance, this term or concept may be clearly referring to a standard industry activity conventionally used as such, or appearing on the list of a standard classification system such as the NAICS from the Canadian Ministry of Industry available online<sup>6</sup>.

The following example illustrates the application of rule no. 3b.

4. “In order to help reestablish his name and improve the image of his business from the earlier controversies associated with the dangerous explosives, Nobel had also considered naming . . .”

The main textual feature of this occurrence is that a possessive determiner ‘his’ precedes ‘business’, which means that the conditional rule of interpretation 3b applies so that ‘business’ could have sense 2a or 3a. The choice between either sense is in this example purely contextual. The noun ‘business’ does not refer to an organization or a business concern but to work-related and commercial activities. The strict if-then conditional rule does not allow to take the decision between sense 3a or 2a. In a concrete learning activity, perhaps it would be wise to accept either 3a or 2a as a valid response (according to the application of the interpretation guidelines) and allow bonus points to learners who would have correctly identified sense 2a from a contextual reading of the whole segment.

For the next occurrence of ‘business’ as a head noun, several rules may apply simultaneously and somehow contradictorily. One way to resolve the contradiction is to give one rule precedence over the other.

5. “Its reinsurance business, Aon Benfield, specialises in reinsurance brokerage and capital advisory.”

Since ‘business’ is a head noun, rule no. 3 applies so that the sense of ‘business’ could either be 2a, 3a or 3c. What is

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<sup>6</sup> Canada. Minister of Industry (2007). North American Industry Classification System (NAICS) – Canada, <on line: <http://www.statcan.gc.ca/pub/12-501-x/12-501-x2007001-eng.pdf>>, accessed October 12, 2015.

interesting here is that several secondary conditional rules apply to this occurrence. First rule 3a may apply because the modifier of ‘business’ (which is ‘reinsurance’) seems to be a specific industry (industry code 52413 from NAICS – “Re-insurance carriers”). According to this conditional rule, the interpretation of ‘business’ could be 3c. Rule 3b does not apply to the context. Since this rule as well as all other rules are conditional, it is not possible to infer from the non-application of a rule that the sense is not what it would be if the rule applied (*modus ponens* in classical logic). In this case, that means that because rule 3b does not apply, we cannot deduct that the sense of ‘business’ is not either 2a or 3a. Rule 3c seems to apply to the occurrence number 5 since we find the proper name ‘Aon Benfield’ in the context. According to this rule, the sense would be 3a. Finally, rule 3d does not apply since we concluded that rule no. 3a applies. Since both rules apply to the same feature of the modifier of ‘business’, it would be possible to integrate rule 3d to rule 3a with the help of a new tertiary condition in case the secondary condition does not apply.

So, which rule, 3a or 3c, should have precedence and determine the definitive sense of ‘business’? One argument could be that the proper name has a stronger influence over the sense of ‘business’ since it is coordinated with ‘business’ and not subordinated like ‘reinsurance’ (determinative modifier as in ‘a business in reinsurance’). The presence of commas also contributes to this interpretation of the different relationships between ‘business’ and ‘reinsurance’ and with the proper name. Therefore, it seems that the syntactical proximity of an item (‘reinsurance’) contributes less to its functional interpretation in a free expression than any other item which is more loosely associated with the head noun (‘Aon Benfield’).

The next examples contain tokens of ‘business’ as a modifier in a compound. By definition, those usages exclude the syntactic role of ‘business’ as a head noun, and this is the reason these interpretation rules should be applied in the order suggested. The next example is clearly an occurrence of sense 3a as confirmed with the application of the rule no. 4a.

6. “In June 2011, HP announced new business and consumer notebooks equipped with the latest versions of AMD APUs accelerated processing units.”

The possibility to paraphrase the modifier as a subordinated item of the head noun, as in “notebooks for businesses” clearly indicate that the sense is 3a. Also, the acceptability of ‘business’ in plural in the made up paraphrase calls to mind the preponderance of rule no 2 over other interpretation rules when ‘business’ is in plural. It seems that if rule no. 2 applies, there is a strong probability that the interpretation of the sense is 3a (and a small probability that it could be 2a – but for interpretation 2a to be valid in the rule no. 4, the head noun should refer to people, functions or projects, which is not the case in the example provided). In fact, all the other secondary rules of 4 do not apply to occurrence no. 6. It can be deduced then that the interpretation of ‘business’ in the occurrence no. 6 is sense 3a.

In example 7, the interpretation rule no. 4d applies in the determination of ‘business’ sense in context. The most important feature of this example is the fact that the head noun refers to people in the business community at large and is not associated with a specific business entity.

7. “Million, a local conservative activist and business consultant, organized protests and compared Hill to the assassin of President Kennedy.”

In the occurrence no. 8 below, the sense of ‘business’ is associated with a specific sense which is not identified as such in dictionaries and lexical databases (such as *Wordnet Search 3.1* of Princeton University).

8. “The Doctor of Philosophy (PhD) and the Doctor of Business Administration (DBA) are the most popular degrees.”

From a monolingual English perspective, this sense is more probably associated with sense 2a which is “series of activities for a commercial or economic purpose”. What is interesting is that in the context of translation, that is, when this occurrence and several similar occurrences need to be translated, the fact that it is used exclusively for the designation of academic courses and programs is a determinant factor in the choice of the equivalent to use as a translation of this sense. Given the special usages of business in the designation of academic programs and courses, the expression “business administration” may be considered as a lexicalized compound which has its own equivalents that are different, for example, from those of ‘business’ as used in an academic program or course in unitary expressions. ‘Business administration’ is most often translated into French by “administration des affaires” while ‘business’ as in unitary expressions is mostly translated by “commerce” or even by the adjective “commercial” like in the phrase ‘business school’ = “école de commerce”, “école commerciale” or even “école de gestion”. As can be seen from these examples, the different usages of ‘business’ in an academic context may range from a modifier as in ‘business administration’ and ‘business school’ to a unitary expression referring to a specific discipline (such as ‘business’, ‘management’, ‘finance’, ‘medicine’, etc.).

The next examples show occurrences of ‘business’ as a unitary expression. The conditional interpretation of their senses would need some validation with a larger corpus to ascertain their systematic applications for the design of translation learning activities. Still, corpus data have provided interesting facts about the standard usages of ‘business’ in unitary expressions. Those are shortly described below.

The next occurrence illustrates an example of rule no. 5 applied for sense no. 3a.

9. “Although the economy was booming in the region, the business struggled and Lincoln eventually sold his share.”



In the small corpus annotated in Poirier (2015), the unitary use of ‘business’ with the indefinite article is also associated or correlated with sense 3a.

The next occurrence illustrates an example of rule no. 6 applied for sense no. 1a or 3b (depending on the exact preposition which is used). The preposition used here is ‘on’.

10. “He is not there on business, since he appears to have private means.”

More corpus analysis needs to be done for other prepositions like ‘for’ or ‘in’. For example, ‘business’ preceded by the preposition ‘for’ is not systematically associated to sense 1a and may also be applied to sense 3a, as it is the case for this occurrence: “. . . while income taxes have been lowered and revenue taxes for business reduced by 20%.”

All the other interpretation rules listed under no. 7 apply to unitary tokens of ‘business’. Since there are no obvious textual features for this pattern to put in correlation with specific senses, interpretation rules rely more on the referential meaning of ‘business’ and hence may represent a matter more closely related to source language learning than translation learning. The extent of this statement needs to be validated with further corpus data. In teaching translation, this part of the translation competencies closely linked with language learning could be taught or addressed differently from other usage patterns of business.

Still, some unitary tokens may be described thanks to decision-making skills or inference rules. This is the case with the last example of unitary use of ‘business’ for which an inference rule must be applied for correct sense discrimination.

11. “...state capitalism is the difference between peaceful, voluntary exchange and a collusive partnership between business and government that uses coercion to subvert the free market.”

This occurrence of a unitary example can be analyzed by taking into account the coordinated binomial of which ‘business’ is a term. ‘Business’ is not preceded by a determiner or a preposition, which means that rule 7 applies. Sense 1a does not apply since the occurrence refers to an entity making partnerships with other entities (and 1a cannot be interpreted this way since it designates abstract work which is not an entity interacting with other entities). Therefore, rule 7a does not apply to this example. The coordination of ‘business’ with ‘government’ suggests that ‘business’ may refer to the whole group of profit-seeking people (as opposed to the whole group of people working or related to the government or public interests). The application of rule 7b is in line with the function of coordination in which two similar but opposite items are contrasted.

All of the examples provided in section 6. of this paper show that it is possible for translation teachers to design learning activities on sense discrimination and interpretation rules and guidelines to help learners to tackle sense discrimination problems in translation. It should be clear now that annotated corpus data and methodologies are instrumental in the uncovering of these rules and in the description of text inferences and logic reasoning implied in the sense discrimination processing for translation purposes.

The description of the interpretation rules in table 2 are also basic. They do partly take into account collocations through large semantic categories and with the recognition of contextual collocations of the lexical item ‘business’ sense as an academic field as a modifier and in unitary tokens. A larger corpus could help refine and improve interpretation rules with specific collocators. It is hoped that the examples provided, even if they come from a small corpus, will show that corpus methodologies may well be used to define translation teaching competencies which will allow clear and rational learning activities to be designed in the learning of general and specialized translation.

An interesting pedagogical application of the interpretation rules could be to ask students to translate some occurrences of

‘business’ and to justify their translation with the usage patterns and interpretation rules described above.

## **7. Discussion and further studies**

The previous section has shown numerous applications of interpretation rules uncovered from annotated corpus data for sense discrimination and interpretation of business for translation teaching purposes. This review of interpretation rules applied to ‘business’ as a term or as an item of a complex term has brought into focus six types of ‘business’ usages that may be grouped under six patterns such as the followings: constituents of an idiom, graphical or formal variants, head nouns, modifiers, constituents of a prepositional phrase and unitary expressions. An interesting development from these patterns of business would be to examine if they could also characterize other nouns in English for special purposes such as academic English, specialized English and even in general or common basic English. According to Hanks (92), patterns are defined as having, among other features, a valency structure. As regard this feature, nouns are problematic since they do not usually have a valency structure. For this reason, nouns require “a different approach,” as suggested by Hanks (134). The author suggests a classic monolingual and empirical Firthian approach based on collocation (strict co-occurrences confirmed statistically in texts) which closely resembles the approach developed by Kenny (84)<sup>7</sup>. Instead, we suggest nominal

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<sup>7</sup> In this extract, Kenny rightfully rejects the use of contrastive data (target language translation of collocations) in the identification of source language collocations because the lexical description of a single language should not depend on its translation in another language. From our perspective, and for the autonomy of translation as a discipline, the classification of collocations in source language to be translated in target language (their patterns) absolutely needs to be based on formal features in source language texts in correlation with the variations or consistencies of their translations in target language. The difference lies in

patterns that take into account grammatical and syntactical features that are potentially relevant for sense discrimination for the purpose of translation. Those patterns are therefore based at least partly on selection restrictions of noun collocations (such as when ‘business’ is a modifier or a head noun). In the definition of nominal patterns, we, therefore, agree with Tutin and Grossmann (2013), who propose an extended definition of collocations which include collocational restrictions and syntactical structures involved in the co-occurrence of lexical items in texts. Our analysis of interpretation rules for business used in academic designations shows that simple co-occurring is not enough and that syntactical role (as a modifier or as a unitary expression) helps to distinguish different translation solutions for the same or very similar sense. This example further shows that the definition of a sense is also determined by the purpose of the sense definition process (in our context its prototypical translation by second-language English speakers in French or another European language).

The first pattern is represented by tokens in which ‘business’ appears as a constituent of known and recognized idioms (in contrast with living metaphors). Occurrences of this pattern need to be listed for second-language learners such as translators because, most of the time, professional translators translate from their non-native or non-dominant language to their dominant language. As a matter of fact, this pattern is probably characteristic of most lexical items in a language. In bilingual lexicography, the recognition of this pattern has even resulted in the creation of a sub-entry to group together the description of idiomatic expressions of which the address is a constituent. Bilingual dictionaries identify this pattern with a special symbol or paragraph dedicated to idiomatic or opaque usages of the lexical item.

The second pattern groups together orthographic or grammatical variants of the lexical item which are systematically correlated with

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the purpose for which the classification of collocations is made, i.e. for source language description or for translation description.

a sense (2a for instance). Contrary to a general rule of languages where plural and singular forms of nouns normally have the same meaning, in the case of ‘business’, the plural form of the lexical item is exclusively and unequivocally associated with a specific sense. Another graphical variant of ‘business’, such as with a capital ‘B’, has been found, but no statistically significant sense could be correlated with it. Further corpus data need to be compiled as regards this orthographic variant of ‘business.’

The analysis of interpretation rules of ‘business’ has shown a third pattern of ‘business’ usages: in nominal expressions and terms of which ‘business’ is the head noun. This role is an important one since it plays a dominant role in the nominal phrase in which it appears. In English, the determination of the head noun is not systematic since, even if most N1 N2 constructions, the head noun is N2, there are plenty of constructions such as N1 Prep N2 in which N1 is the head noun. New corpus studies should be directed at determining if there are exceptions to these rules for determination of the head noun in compounds nouns (to what extent N1 is the head noun in N1 N2 constructions). There is no doubt that this pattern is a prevailing feature of nouns which may serve in CTS for sense discrimination of other nominal lexical items.

The fourth business pattern includes expressions and terms of which ‘business’ is a modifier in a nominal phrase, like “business ventures”, “business practices”, “business process”, etc. This specific pattern also includes expressions made with ‘business’ that are also a modifier of a head noun, for example in the case of “business process outsourcing industry”. The pattern refers to the most immediate syntactical function of ‘business’ in the nominal phrase and not in the syntactical function of the phrase of which ‘business’ is a constituent. For example, a construction such as “company XYZ that develops computer processors and related technologies for business and consumer markets” should be considered as an occurrence of ‘business’ as a head noun, even if the head noun is part of a modifier of another nominal phrase (“related technologies”).

A fifth pattern can be associated with prepositional phrases of which ‘business’ is a constituent. This specific pattern is not an easy object of analysis since it might be easily confused with other patterns such as N1 Prep N2 where ‘business’ is used in N2 role. This is especially true for ‘business’ when used with ‘for’. Because of the small corpus used in our study, the range of prepositional phrases has not been satisfactorily covered. Further corpus studies are required to uncover possible correlations of senses with specific prepositions.

The sixth and last pattern of business items groups together different unitary tokens of business. Those expressions include the ‘business’ with a determiner (‘a’, ‘the’). They also include usages of ‘business’ in coordinated phrases such as binomials and other complex unlexicalized (or grammaticalized) expressions such as the whole nominal phrase in example 11 (“business and government”). In that last example, it is possible to apply an interpretation rule by taking into account the nature of the item which is contrasted with business. Again in this regard, more corpus studies need to be realized in order to uncover those rules and the extent to which these inferences can be applied in the interpretation of business senses.

## 8. Conclusion

This paper has shown that corpus data may provide rich materials for the preparation of learning activities in a translation learning class. In this context, corpus methodology offers a theoretical contribution in the creation of progressive and step-by-step translation learning activities. The theoretical contribution explored in this paper was the sense discrimination of ‘business’, a common item in specialized texts in economy, finance, and business. From the analysis of corpus data on business terms and items in complex terms, we have identified six nominal patterns that may be generalized to concepts of nominal nature, in English, and presumably, in languages having nominal constructions

with head phrase and modifier functions. The description of the decision-making rules or guidelines in the sense discrimination or interpretation of ‘business’ contributes to the description of translation competencies that are the object of many scientific investigations – namely the research activities of the PACTE group and their strategic sub-competency described in Hurtado (2015) and PACTE (2005). From this perspective, this paper has shown that the principle proposed by Gavioli (22) on the role of CTS in teaching translation has been validated and that CTS may provide solutions when addressing practical translation learning issues.

As regards corpus methodologies applied to translation teaching, this paper has shown that a monolingual and annotated corpus study is required to uncover interpretation rules to be operationalized in learning activities. This requirement means that the extraction of data from parallel bilingual corpora is not sufficient in the resolution of interpretation and translation issues. Our proposed interpretation rules of source language ‘business’ are derived from textual correlations of ‘business’ senses with nominal patterns of ‘business’ when used as a unitary lexical item or as a constituent of a complex term. The scientific interest of these nominal patterns is their reproducibility in the study of textual correlations of senses for specialized terms of nominal nature (as a unitary lexical item or as a constituent of a complex term).

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