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Editorial

The acronym LSP stands for "Language for Special Purposes" but refers also to 63 other entities according to the Free Dictionary (http://acronyms.thefreedictionary.com/LSP) ranging from The Louisiana State Police to Legal Studies Program. The same source gives a total of 170 possible references for ESP (English for Specific Purposes). The question is whether language users – even professionals - outside the Language-for-Special-Purposes circle know these acronyms and what they stand for, or if "professional communication" respectively "English professional communication" has replaced LSP/ESP in many contexts because it is more appealing and readily understandable as the topmost header for the vast domain of written, oral, and visual communication within a workplace context as well as any of these forms of communication in a physical or digital form. If the notion of "professional communication" is perceived as broader than LSP/ ESP, the scope of this journal addresses indeed as well "professional communication" as LSP/ESP.

The articles published in the present issue deal with a number of relevant aspects of professional communication which illustrate a variety of approaches: Expert-lay interaction, ontological organization, philosophical dimensions of ontology organization, conversation analysis of management meetings, sources of difficulty and motivation in business English, semantic analysis of American and British English, and of Polish-Russian in the framework of an automotive specialized lexicon.

I again encourage you to invite your colleagues and contacts to register as subscribers (for free) to the LSP Journal and to submit papers at http://lsp.cbs.dk. It is our objective to increase our audience in order to be able to continue as a free open-source journal and reach as many readers as possible.

Henrik Selsøe Sørensen
Editor in chief

How organizational strategy is realized in situated interaction. A conversation analytical study of a management meeting

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Abstract

This study investigates the essential role of 'text' – defined as the 'substance' upon and through which situated conversations are formed – in the communicative (re)construction of organizational strategy in managerial meeting interaction. In line with the ethnomethodological view of practice, the analysis of managers' meeting interaction demonstrates how the participants orient to written and spoken texts as constitutive elements in the practice of strategy. What is more, the analysis shows how 'texts' are attributed agency and how they are used in a persuasive way for legitimation purposes. Theoretically, the study develops an argument that the communicative construction of strategy in situated interaction is premised on the dynamic interplay of texts as dislocal activity types and conversation as here-and-now activity. Overall, the study furthers our knowledge of the role of meetings as an important strategic practice.

1 Introduction

Recent years have witnessed a growing number of studies that conceptualize strategy as a situated and socially accomplished activity, as something that people do in organizational daily life and as part of organizational routine work (Jarzabkowski and Whittington, 2008; Johnson et al., 2007).

The turn to focus on strategy as practice has paved the way especially for investigating the linguistic and discursive practices of strategy, and previous research has highlighted that discourse is at the heart of professional work through which strategies are created or implemented (Ezzamel and Willmott, 2008; Phillips, Sewell and Jaynes, 2008; Suominen and Mantere, 2010; Vaara, Sorsa and Pälli, 2010). Within the practice turn, some recent studies have also highlighted the essential role of meetings and meeting interaction in strategy work and suggested that strategic practices, such as for example strategic planning practices, are for a large part about recontextualizing and constructing texts (Pälli, Vaara and Sorsa, 2009; Samra-Fredericks, 2010; Spee and Jarzabkowski, 2011). Thus, there is evidence to argue that organizational strategy work is deeply connected to the interplay between texts and talk.

This approach relates theoretically to the conception expressed in the Montrealian socio-semiotic school of organizational communication, which views communication as constitutive of organizations (Ashcraft, Kuhn and Cooren, 2009; Cooren, 2012; Cooren et al., 2007; Putnam and Nicotera, 2008; Robichaud, Giroux and Taylor, 2004; Taylor et al., 1996; Taylor and Van Every, 2000) The communication as constitutive of organizations approach (CCO) sees texts as semiotic artifacts (written or spoken) that are produced in the use of language, whereas conversation refers to the situated and contextual use of language. In Cooren et al's (2011) words, "*Text* is the 'substance' upon and through which conversations are formed; they 'speak' for the organization by shaping the conversations that appropriate them".

In particular, the role of text as an authoritative agent, capable of doing things in organizations (Cooren, 2008) and shaping the trajectory of the firm (Kuhn, 2008), has become an interesting tenet in analyses that focus on strategy as discourse and practice. In the wake of the CCO approach, Fenton and Langley (2011) add 'text' (defined as a material manifestation) as a nexus in their reformulation of the strategy as practice framework (Whittington, 2006), where they separate between practice narratives, practitioner narratives, and praxis narratives. Others have demonstrated empirically the centrality of strategy texts such as planning documents, and – importantly – connected texts to the situated conversations where they are appropriated. Spee and Jarzabkowski (2011) draw from Ricoeur's concepts of de- and recontextualization in their analysis of how strategizing is constituted through the recursive relationship between talk and text. Pälli, Vaara and Sorsa (2009), in turn, use the analysis of intertextuality to examine how strategists in a city administration produce the content of strategy in meetings by negotiating over meanings in both prior texts and texts-to-come. Finally, Samra-Fredericks' (2010) fine-grained ethnomethodological analysis of conversation brings out how a strategic plan is an interactional accomplishment.

Regardless of the growing scholarly interest on the interplay of text and talk, the discursive practice that takes place within conversations has remained under-researched in the strategy as discourse and practice literature. Adding to the aforementioned studies of strategy talk and text and resonating with the theoretical stance formulated specifically in the Montréal

school's socio-semiotic approach to conversation-text relations (Kuhn, 2008; Robichaud, Giroux and Taylor, 2004; Taylor and Van Every, 2000), we will thus in this paper show that the dynamic interplay of text and conversation can be captured for analysis and further considerations by paying close attention to the sequential, turn-by-turn structure of conversation.

We will specifically show that the way strategy is made sense of is based on, on the one hand, the institutional and generic characteristics of social interaction in managerial meetings. On the other hand, our study will demonstrate how these sensemaking processes are constrained and affected by generic knowledge that is related to specific types of communicative activities, which we, following the definition proposed by Francois Cooren and his colleagues (e.g. Cooren, 2008; 2012; Cooren and Matté, 2010), see as 'figures' that are 'ventriloquated' in interaction.

We demonstrate and exemplify our theoretical approach with an empirical analysis of conversational interaction. Applying ethnomethodological conversation analytical methodology, the empirical analysis concentrates on a single sequence in one managerial meeting. Following the methodological thrust of ethnomethodological conversation analysis, we are particularly interested in the ways the participants of conversation produce and display common understanding, which we view as a process that is modified and constructed in interaction (Heritage, 1984; Schegloff, 1992).

The remainder of the paper is organized as follows. We first present the case of our illustrative analysis and then explain the method and analytical procedure. The empirical analysis comprises four parts. In the final section of the paper we discuss our findings, especially in terms of their implications for studying strategy work in and through discourse.

2 The case

The empirical analysis concentrates on a single sequence in a managerial meeting. In that sequence the participants of the meeting discussed conducting a customer satisfaction survey, which is *per se* a strategic text, given that customer satisfaction mirrors organizational attitudes and is connected with job satisfaction and efficiency (Gillespie et al., 2008; Gilson, Shalley and Blum, 2001). In this respect, the participants in the meeting were making a textual product that was consequential for the directions and strategic outcomes of the firm.

The sequence we analyze lasts only a few minutes, and it is part of a longer sequence on the topic of the customer satisfaction survey, which was one of eight topics on the agenda for the meeting. In total, the meeting lasted four hours; the topic of customer satisfaction surveys was discussed for approximately one hour. Nine participants attended the meeting, all of them managers with different ranks in the organizational hierarchy. However, their responsibility as a team was to manage human resources in a multinational forest-industry corporation. Hence, we can conclude that they were in the position to make strategic decisions that were consequential for the entire corporation. It could be argued that strategizing in the sense of making strategic decisions that affect the entire corporation was their duty and that their regular meetings served as a tool in fulfilling this duty. Nevertheless, the participants and their work of strategizing was subordinate to the corporate level management group and its strategy work, which – especially in the form of official corporate strategy (called here "Corporation Quality 2010") – quite obviously set tasks and guidelines for the work of this human resource management team.

The meeting was a routine periodic meeting and had a fairly fixed agenda. Still, considering Boden's (1994) rough distinction between formal and informal meetings, this meeting could best be described as semi-formal. Although it had an agenda, a chairperson, and a predefined time and space, the mode of participation (for example the turn-taking system) and the way of talking were informal. For example, the participants joked, laughed, and made small talk on personal matters. The language of the meeting was lingua franca English. Five of the managers were Finnish, three were Swedish, and one was German.

3 Data and methods

The piece of data for our case study is part of a larger database of video-recorded company-internal meetings (about 35 hours in total) held in two corporations in 2000–2003. The data were collected at the Helsinki School of Economics in conjunction with a research project on internal communication in recently merged Finnish-Swedish corporations. They were transcribed according to conversation analytic principles (see, e.g. Hutchby & Wooffitt, 1998).

The methodology of the article is based on ethnomethodological conversation analysis (Heritage, 1984; Hutchby and Wooffitt, 1998; ten Have, 1999). In conversation analytical research face-to-face interaction is seen as structurally organized. Contributions in interaction are analyzed in their sequential context. Every turn is shaped by the preceding context and renews that context for the next speaker. By analyzing sequential patterns it is possible to uncover the orientations and competences on which the participants in the interaction rely (Heritage, 1984: 241–244). In the conversation analytical study of institutional interaction (Drew and Heritage, 1992) the goal of the research is to show how the participants accomplish institutional tasks through the sequential patterns of an institutional encounter. Additionally, conversation analysts use the concept of 'turn design' (ten Have, 1999). This means that every turn of talk is designed for the particular recipient(s) in the particular interactional context. In a study on institutional talk the design of turns may also reflect institutional tasks.

In addition, our analysis extends to intertextuality. We focus on the ways in which the participants refer to texts or face-to-face encounters and make them interact with other texts or face-to-face encounters. Conversation analysts have studied the relationship between spoken interaction and written texts first by analyzing how participants in interaction use texts to achieve their practical goals and in so doing reconstruct the meanings of the texts (e.g. Lehtinen, 2009), and secondly by showing how texts (e.g. a record of an interrogation; Komter, 2006) are constructed during interaction. Although we draw on these studies, our approach goes further in its use of the notion of activity type. Hence, our analysis is in accordance with Fairclough's (1992) conception of intertextuality; it is manifested by referring to specific texts and constituted by referring to generic activity types.

The mode of analysis in this article can be called single case analysis (cf. Schegloff, 1987, 1988; Firth, 1995; Hutchby & Wooffitt, 1998). For the most part, conversation analysts gather collections of instances of a phenomenon and try to find recurrent patterns across these instances. Even then, however, it is important to analyze all of the individual cases in detail. This is because, according to the conversation analytical view, talk-in-interaction is not orderly in terms of statistical regularity but case-by-case. The participants in the interaction themselves produce singular episodes of conversation in an orderly fashion, and that order

should also be recognizable to the analyst (Schegloff, 1987). In a single case analysis a stretch of data – usually fairly long – is analyzed in detail. There can be at least two kinds of different goals. First of all, the goal can be to show how the results of earlier analyses can be applied to a longer stretch of talk in order to display its orderliness (Schegloff, 1987). On the other hand, single case analysis can be used to make a proposal on the interactional function of a phenomenon that has not previously been subject to conversation analysis (Schegloff, 1988).

In this article we conduct the latter kind of single case analysis. We look at how strategizing is contextualized in a single extended sequence in a meeting interaction by referring to linguistic activities and – at the same time – by invoking organizational activity types. However, when we began to go through the data, we first formed a collection. In doing so, we took intertextuality as our point of departure. We collected instances in which participants in the meeting referred to a text or face-to-face encounter. In the case of the sequence analyzed here, we noticed in the preliminary analysis that the references to various linguistic activities seemed to make the interaction strategic. We therefore decided to conduct a detailed analysis of the case in order to shed light on strategizing in meetings. In our analysis, we paid special attention to the sequential aspects of the case, in the spirit of the conversation analytical mentality. We also extended our intertextual analysis by considering how the participants not only referred to singular activities but also to activity types.

4 Empirical analysis

In our empirical analysis we will mainly look at the design of one long turn in the meeting in its interactional context. The turn in question is Jouko's introduction to the customer satisfaction survey. We will connect it to its interactional context in two ways. We will pay attention to its sequential position; it follows the chair's opening of the agenda item and is followed by discussion of the issue by the participants. Also, we will look at the interactional dimensions during the turn, e.g. gazes and other reactions by the participants to the turn.

In our analysis we will make four interdependent points. Hence, this section is divided into four parts. In the first part we will show how Jouko constructs the meeting as a strategy meeting by invoking different activity types. In the second part we will show how power and agency are attributed to these activity types in the meeting. Thirdly, we will look at how participatory rights are distributed in the meeting vis-á-vis the activity types. And finally, we will investigate how the turn and the strategizing constructed in the turn fit into the sequence, and how they are consequentially embedded in the interaction in the meeting. In particular, we will show how the activity types are used in a persuasive way for legitimating the agenda item.

All of the points mentioned above can be seen in extract 1, which is reproduced below. We therefore refer repeatedly to it in our analysis. In addition, we will use two other extracts to support our arguments. Extract 1 is from the beginning of Jouko's turn. The chair's (Johan's) opening is also included in the extract. The references to activity types are in bold.

Extract 1

```
01 Johan:     Er customer satisfaction surveys
02 Jouko:     Ok (.) Yes I took some transparencies er
03            (.) that I might show (.) as you know (.)
04            there has been er (.) Johan knows better
05            the background of the discussions what was
06            the ( ), (.) I understand it was discussed
```

```
07              in the management er group er (.) how to
08              cope with (.) with one (0.5) er one er
09              issue, (.) which has many aspects of course,
10              the issue of customer satisfaction, (.) er
11              of of er (0.5) what comes to to corporate
12              staff and service units (.) of course they
13              have many other reasons for that, (.) but
14              one (0.6) one rather important reason of
15              course is er is the self assessment, (.)
16              according to Corporation Quality Two
17              Thousand Ten (.) which (.) requires that you
18              just don't think or suppose but you you pro-
19              (.) most (.) should have er (0.8) concrete=
20 Raija:       =Data.
21 Jouko:       Con[↑crete data.
22 Seppo:          [Facts.
23 Raija:       Mm.
```

Before the analysis, it is necessary to define our central analytical concept 'activity type'. Following Levinson (1992), we define activity types as any culturally recognized activities that are socially constituted and bounded events with different kinds of constraints (e.g. on setting or participants). Some of the examples Levinson (ibid.) mentions are as diverse as 'a task in a workshop', 'A Bingo session', 'a dinner party', and 'a football game'. Important is that all activity types entail specific norms and rules of interaction.

For our purposes it is however most important to see activity types as capable of doing things in interaction. In the terminology proposed by Cooren (e.g. 2008; 2010; 2012; Cooren and Matté, 2010), we can thus view the relationship between activity types and their usage in interaction as a form of *ventriloquism*: the key idea being that 'objects' or 'figures', whether semiotic or material in nature and taking the form of for example tools, texts, policies, statuses, or collectives, "say" or "do things" when people speak or write. In this view also activity types are 'figures' that speak in a given situation. However, as our analysis shows, it is important that the agency that activity types gain is acknowledged in interaction. In other terms, their relevance and agency comes about when an instance of them is recognized and the recognition is demonstrated in the interaction.

The activity types we are interested in this paper are to a great degree constituted by talk and by textual interaction. Thus, linguistic activities can be seen as integral to the activity types. In extract 1, three different linguistic activities that are dislocal to the meeting are referred to and consequently three different activity types are invoked. First, Johan introduces the topic and gives it the name of an activity type, the 'customer satisfaction survey.' In his introduction to the topic, Jouko mentions two other activities, the 'management group' and *Corporation Quality Two Thousand Ten*. The last two are not, strictly speaking, names of activity types. Rather, they are descriptions of singular linguistic objects or activities. Jouko talks about a specific meeting of the management group and a specific text that has a specific name. We will argue, however, that these activities are treated by the participants as instances of activity types. The meeting of the management group is an instance of 'management group meetings' in general, and *Corporation Quality Two Thousand Ten* is an instance of 'strategy texts'. We will show that the activities 'do' what they do because they are treated as having general characteristics. For example, the specific strategy text can be treated as having power and agency because it is seen in the context of strategy in general.

4.1 Reconstructing the meeting as a site for strategizing

As we already noted, the meeting in question is not a strategy meeting by default. Our contention is, however, that it becomes a strategy meeting through the action of the meeting participants. Strategizing is therefore an accomplishment. At the same time, strategy is recontextualized; it is brought into the context of the meeting. Furthermore, we argue that strategy is recontextualized by invoking generic activity types.

In this section we will especially concentrate on the third of the three activities mentioned. As such, it is not the name of an activity type, but the name of a specific text, a strategy text of the corporation[1]. However, it can be seen in the extract that the participants in the meeting (also) treat it as a representative of an activity type, a 'strategy text.' The requirements of the text are presented as a 'reason' (line 14) for working on the customer satisfaction survey. Hence, it is presented as a text that guides action in the company. It is used as a vehicle for turning the meeting into a strategizing event. Through a reference to one of the company's strategy texts, the task of the participants in the meeting is thus constructed as a strategic one.

The reference to the "management group" (line 7) is also important in the recontextualization of strategy. The strategic importance of the task is not presented merely as an opinion of the speaker. The initiative is credited instead to the management group. It is also the management group that, according to Jouko, has provided the reason for the task, particularly its connection to the strategy text.

We can conclude that in his turn of talk Jouko constructs a chain of strategic activities: the strategy text, the meeting of the management group, and the customer satisfaction survey. All of these are also representatives of activity types. At the same time, the meeting itself is turned into a node in the chain; it is made a part of the strategizing process. Hence, the meeting participants also become strategists for this part of the meeting. All of this happens in a situated way. It is through the talk of the participants that strategizing enters into the meeting.

4.2 The agency of activity types in the strategizing process

As earlier analyses (Cooren, 2008, 2010; Vaara, Sorsa and Pälli, 2010) have suggested, texts are often presented as agents. Our contention is that agency can be connected to activity types. We can begin with the strategy text and look at the role it is given through the talk. We mentioned in the previous section that it guides action. We can now look at the power issue in more detail.

Jouko uses the verb 'require' in talking about the strategy text. Furthermore, it is the text that is the subject of the sentence; the texts 'requires'. Hence, he presents the strategy text as having power vis-à-vis the participants. However, we can also ask why this particular text has power. We can argue that its power lies in its generic characteristics, in it being representative of an activity type (cf. Vaara, Sorsa & Pälli, 2010). It has power precisely because it is a strategy text; strategy texts in general are seen in organizations as agents that have the power to set requirements.

[1] The name of the text has been changed to protect the anonymity of the corporation.

The management group is different as an activity type because it does not exist as a text; it is instead a type of spoken encounter. In this case Jouko attributes agency to "they" (line 12). It is "they" that "have reasons" for doing what they do. The plural pronoun "they" refers to a group of people. However, the power of "they" originates in the activity type "management group." It is because their discussion has been conducted in the management group meeting that "they" have the right to initiate action. It is noteworthy that the other participants do not call into question the agency of the strategy text and the management group meeting. They seem to accept it as a fact.

4.3 Participatory rights in activity types

We can also see how participation in strategic action is oriented to in the meeting. Participation seems to be connected to the activity types: they open up different possibilities and roles for participation.

We can first look at how Jouko talks about the "management group." It has been shown in conversation analytical research (e.g. Drew, 1991; Heritage and Raymond, 2005) that participants in interaction display their access to information and knowledge and that there are normative restrictions on what different participants are entitled to know and describe. In lines 4-6 Jouko first makes an explicit statement about different states of knowledge. He describes himself as less knowledgeable than the chair. Then, in lines 6-7, in mentioning the management group, he uses the phrase "I understand." Hence he shows that he does not have direct access to the discussion in the management group.

In this case, we can also analyze the nonverbal aspects of the interaction. In line 1, when he gives the turn to Jouko, Johan lifts his gaze and looks at Jouko. When he starts speaking in line 2, Jouko gathers his papers and walks around to get his transparencies from the other end of the table. He has reached the front of the table when he utters "I understand it was discussed in the management group." At this moment he turns his gaze to Johan, who also, a bit later, turns his gaze to Jouko for a little while. Hence, through his gaze, he shows that the chair has better access to the management group as an activity type. Thus, the participants´ participatory roles vis-à-vis strategic activity types are displayed in a situated way in the meeting.

A related but different distribution of roles can be seen in another activity type. Extract 2 follows a moment after extract 1.

Extract 2

```
33 Jouko:    but nevertheless I was then er given the the
34           the task to co-ordinate this er from Johan (.)
35           and er making contacts with the units,
```

In extract 2 Jouko describes the activity of Johan giving him a task. This activity is also representative of an organizational activity type. Even though Jouko does not use a conventional name of a genre or an activity type, the description of the activity has generic qualities. 'Task-giving,' the purpose of the activity, is both generic and important in the organizational context; managers recurrently give tasks to employees and the task-giving has consequences for the operation of the organization.

This activity, and consequently the activity type, is also connected to institutional roles and thus to an institutional distribution of participatory rights. In contrast to the management

group, Jouko presents his access to the activity as direct: he is a participant in the activity. However, the participants in the activity are shown to have different roles. One of them gives the task, another receives it. Thus, the activity type of task-giving entails a hierarchical organizational structure of superiors and subordinates.

Finally, we will analyze how the participation structures are constructed in the activity types of strategy text and customer satisfaction survey. We will return to extract 1. As far as the strategy text is concerned, it is interesting that Jouko's monologue is broken up for a moment when he is talking about it. The other participants offer their contributions as to its content and meaning. In lines 16-19 Jouko describes the requirements of the strategy text. However, in lines 18-19, there are several perturbations in his speech: word repetition, a cut-off word, a long pause, a word search marked by 'er.' Also, during the word 'concrete' (line 19) he extends his hand, palm up, towards Raija and nods slightly at her. As Lerner (1996) has shown, such features provide an opportunity for others – in this case particularly Raija – to help and complete the turn. This is what they do. Both Raija (line 20) and Seppo (line 22) provide a version of the end of the turn. On line 21 Jouko confirms Raija's version of the turn. Such collaborative turns – that continue the format of the turn thus far, bring the turn to completion, and project confirmation by the original speaker – are affiliative (Lerner, 2004; see also Sacks, 1992: 144–147). Hence, by constructing the turn together the participants display that they have common access to the strategy text. The text has, of course, been written through a particular procedure by particular people, but as a complete text it is available to the participants of the meeting.

The stretch of talk analyzed above is also relevant for participatory rights on the activity type of customer satisfaction survey. The customer satisfaction survey is different from the other activity types considered above in that it does not yet exist as a specific text. The participants are constructing a specific customer satisfaction survey, but in so doing all they can rely on is their knowledge of the activity type. In lines 16-19 Jouko is not merely talking about the requirements of the strategy text, but also about their applicability to the customer satisfaction survey. The other participants – particularly Raija and Seppo – are doing the same. Hence, the participants display their common knowledge of the activity type; it is one that produces concrete data and facts. They thereby gain the right to participate in the discussion of the activity type because they know it by name and what it should entail. Such knowledge is also implicated by the chair in his opening (line 1). He merely states the name of the activity type without any explanation of what it comprises. He therefore indicates that the participants obviously know what is being talked about.

4.4 Strategizing as part of meeting interaction

In this section we will show how the references to activity types and the strategizing connected to them are embedded in meeting interaction. To do that, we need to look at Jouko's turn as a sequentially relevant contribution in the meeting. We already noted that it follows the chair's opening of the agenda issue and is followed by discussion of the issue. In this section, we will focus on how it is designed to project the upcoming discussion.

Our extracts come from the beginning of the introduction, which Jouko frames as "background" to the issue. At the end of this part he makes an explicit topical shift: *this is this is the background (.) how is it going now (.) er I sent a letter*. He thereby shows that the background part of the introduction is now finished and he is ready to turn to the present state of the project.

Framing his description as 'background' seems to imply that this section of the introduction is mainly informative. It is something the participants need to know to be able to understand what is being talked about, but it is not the main point to be discussed in the meeting. As we have seen, the background part includes references to many different more or less generic linguistic activities. However, earlier research (e.g. Arminen, 2005; Drew, 1992) has shown that describing is never neutral. First of all, a description is always just one version of what happened. And secondly, every description is embedded in an activity, in doing something. In many cases, it can be said that descriptions are strategic in nature (Arminen, 2005: 139–145). "Strategic" is used here in a slightly different sense than in the organizational strategy literature and otherwise in this article. The idea is that describing is done to enhance specific goals in the interaction. In this sense, it is interesting to note that references to different activities and activity types in our data also seem to have a persuasive function. We will concentrate on references to three different activities: the management group meeting (extract 1), the strategy document (extract 1), and Jouko's "making contacts with the units" (extract 3 below).

The reference to management group (extract 1, line 7) is made in a quite neutral way. Jouko states that the issue was 'discussed' in the management group. He does not refer to any decision of the group. The apparent neutrality of the reference means that its significance is left for the participants to interpret. They must draw on their knowledge of the role of 'management group meetings' as a generic activity type in the corporation. With the help of such knowledge the role of the reference can be seen and appreciated. If the management group is seen as representative of top management, the reference is seen as legitimizing vis-á-vis the task at hand.

The reference to the strategy document (extract 1, lines 16-17) is more explicitly legitimizing. Jouko is talking about the "reasons" for concentrating on customer satisfaction. He presents 'self-assessment' as an important reason and then connects it to the strategy document. He uses the evidential expression *according to* (line 4), with which he shows that the strategy document is the source of his statement. He also summarizes the relevant part of the document.

Thus, the strategy document is used in a situated way to legitimize a particular activity in the meeting. The success of the legitimization, of course, relies on the participants' knowledge of the organizational meaning and importance of the document. Through continuing Jouko's utterance (lines 20, 22) the participants display both their knowledge and their appreciation of the power of the document.

In extract 3, to close his presentation of the 'background,' Jouko describes the results of his contacts with the units. This reference to an activity type is different from the previous two in that it is more explicitly evaluative.

Extract 3

```
35 Jouko:    and er making contacts with the units, er
36           there were two er a few er things to be
37           noticed, (.) first the er response was spe-
38           very positive, (.) all saw that there are (.)
39           undoubt- er doubt- undoubtedly e::r- benefits
40           in a more or less concerted action,
```

41 Seppo: M[m
42 Jouko: [And and some put it in words of course the
43 fact that if you send (.) er a questionnaire
44 (.) from (.) different units to the same
45 person, let's say (.) two questionnaires per
46 week or, one er the er thi- the the (.) next
47 week then they have the right to ask don't
48 these guys er talk to each other,
49 (.)
50 Anders: Mm[hm.
51 Jouko: [Because er er (.) they might get pissed
52 off to fill out (.) all kind of kinds of forms,
53 (1.2) er that was one thing. (.) second thing
54 was that they (.) welcomed (.) er our (.)
55 offer of help, (0.3) we are not er you know
56 er we are not saying that er and were not
57 saying that we know everything already but we
58 have (.) happen to have a little bit more
59 experience maybe (.) in these kind of er of of
60 service,=and they said very good (.) the timing
61 is perfect, because they actually wondered what
62 shall be should be done, .hh and er and then
63 (.) er thirdly (.) they appreciated er the
64 degree of freedom which we a- actually
65 guaranteed from the very beginning, this is I
66 mean if somebody wants to have a (.) you know
67 individual approa:ch e::r- or or or or
68 something extra of course it is possible, (.)
69 but er hmm (0.8) this is this is the
70 background.

Making contacts with units undoubtedly entails various linguistic activities. Importantly, these activities are not described in any detail. Jouko does not, for example, describe the form of the contacts: were they made by mail, e-mail, or telephone? It can be argued, however, that the description 'making contacts' is sufficient for practical purposes. It adequately describes the purpose of the activity: the units have had an opportunity for a say in the process. It is also an interesting description because it portrays the discussions with the units as preliminary.

On lines 36-70, Jouko describes the results of the preliminary contacts. The description is given in list form. The list is anticipated in the beginning (lines 36-37) and made explicit throughout the description: *first* (line 37), *second thing* (line 53), *thirdly* (line 63). The list consists of descriptions of how the units responded to the issue. These responses are not, however, verbatim citations of what someone said in a particular speech situation. Rather, they are generalizations of multiple responses. Jouko describes the sources of the descriptions as *all* (line 38), *some* (line 42) and *they* (lines 54, 63).

Jouko's description of the responses depicts them in a very positive way. In the beginning, he explicates this positiveness: *the response was very positive* (lines 37-38). Later, when he describes the response of the units, he frames it in a positive way: *all saw that there are – benefits* (lines 38-39), *they welcomed* (line 54), *they appreciated* (line 63). For example, the expression *they welcomed our offer for help* (lines 54-55) is a gloss of a multitude of responses from the units. Hence, we can also say that it gathers together a group of linguistic activities. What Jouko chooses to say about those activities is that they reflect a positive

attitude towards the project. Later (lines 60-61) he illustrates this positiveness with an expression that seems like a citation. But even there he uses the pronoun *they*. Hence, it is not clear whether he means it as a verbatim citation or a gloss of many responses.

As we earlier noted, a description is always a particular version of the events. Interestingly, Jouko's descriptions point to the fact that a different version is possible. If we look at his third point (lines 63-68), in which he explains that the units appreciate being able to adopt individual approaches in the customer satisfaction survey issue, we can detect a potential discrepancy between this point and the second one, which concerns the units' appreciation for the offer of help. The third point could be seen to imply that not all of the units welcomed the offer wholeheartedly. Hence, it seems that Jouko constructs a specifically positive version of their responses. By so doing, he also constructs the task of the meeting participants as reasonable and beneficial.

It is perhaps not coincidental that the contacts with units are described in a more explicitly evaluative way than the management group and the strategy document. As activity types, the management group and the strategy document can be thought of as more obviously relevant. It can be expected that the participants know their role. The meaning and significance of the response from the units, however, demands more explication.

To conclude the analysis, in describing the 'background' of the task at hand Jouko informs the participants of a chain of linguistic events that precede the meeting. The 'informing,' however, is clearly persuasive. He thereby constructs a particular version of the events: the process has been initiated by the upper management, it is in line with a central strategy document, it has been legitimated by middle management, and it is unanimously welcomed by the units of the organization. Also, the task is constructed as part of the strategy work of the organization. In a way, the strategy of the organization and Jouko's strategic action during the meeting are combined in Jouko's turn. By constructing the task of the participants as part of corporate strategizing, he reaches his interactional goal: in effect, the meeting participants can only view the task as both beneficial and necessary. If they want to enhance the strategic goals of the organization, they need to take the task seriously. And through their action, both during Jouko's turn as we have seen in the analysis and afterwards when they enter into a discussion on the customer satisfaction survey, they display their understanding of the significance of the task.

5 Discussion and conclusion

Several studies within strategy-as-practice research have acknowledged the potential of the conversation analytical approach for the investigation of strategizing (e.g. Laine and Vaara, 2007; Mantere and Vaara, 2008). Nevertheless, the method has seldom been used in actual empirical analyses. Ethnomethodological conversation analysis does, however, contribute directly to important theoretical and methodological issues that have concerned strategy-as-practice scholars. In particular, it sheds new light on practitioners whose doings, as Chia and MacKay (2007) convincingly argue, have been typically explained in terms of methodological individualism. In contrast, ethnomethodological conversation analysis deals with structured and organized human action and does not seek explanations from 'inside' the individuals, but rather from their situated social activity. This notwithstanding, ethnomethodological conversation analysis answers the call for more active involvement of practitioners (Balogun, Huff and Johnson, 2003) as its analytical orientation concentrates on how the participants themselves design their turns for each other and interpret each other's turns.

In addressing the question of practitioners' resources, earlier discursive research (e.g. Laine and Vaara, 2007; Samra-Fredericks, 2003) has drawn attention to the fact that discourse is a resource for strategists. Our analysis elaborated on this stance by calling attention to the various activity types – recurring ways of acting discursively – that are referenced in situated interaction. We showed that these activity types are in fact linguistic interactions with generic qualities and that the participants draw upon the activity types during situated interaction. Most importantly, we pointed out that a specific episode, here a managerial meeting, is constructed as a strategy meeting through invoking activity types. We can thus argue that generic activity types shape the flow of strategy activity by linking different strategic episodes to each other. Above all, we saw that when the participants invoked activity types, they actually aligned with the strategy and made their task at hand a part of strategy.

Our analysis also suggested that activity types are employed in the recontextualization practices of strategizing. It is through them that strategy is constructed and given sense. In concrete terms, we showed that through their action the participants of the meeting demonstrated that activity types have consequences for their strategizing. Hence, activity types are powerful for them. This observation of agency is in line with other research (Vaara, Sorsa and Pälli 2010), which have shown, for example, that strategy documents have textual agency. Based on our analysis, we also argue that specific texts have agency. However, our analysis also emphasized that textual agency is tied to the general characteristics of a particular linguistic interaction – whether text or talk – and thus the power and agency is realized through activity types.

Existing literature has demonstrated how various potential sources of authority, such as texts, are made present and powerful in situated interaction (Benoit-Barné and Cooren, 2009; Cooren et al., 2007; Vaara, Sorsa and Pälli, 2010). This study adds to this previous literature by emphasizing that the power and agency of dislocated activity types or any sources that "ventriloquate" comes about when people in interaction demonstrate their knowledge and understanding of them, which they do on the basis of the individual representatives of activity types. Thus, this study makes a methodological contribution by proposing an approach that views ventriloquation as a members' phenomenon, an interactional accomplishment.

In addition, our analysis sheds light on the question of participatory rights in strategizing. We suggest that participation is differentiated vis-á-vis different activity types. Also, participation is something that the actors display and construct in a situated way in their interaction with each other. The actors show their access to different activity types through their verbal and nonverbal actions. In so doing they also display and construct their position in the organizational hierarchy.

Earlier research (e.g. Samra-Fredericks, 2003) has drawn attention to persuasiveness of strategists' talk in their day-to-day and minute-to-minute work. Our analysis shows how persuasive discourse uses references to activity types. Through the activity types a particular persuasive version of the task at hand is presented. Thus, our analysis suggests that the study of persuasive practices in organizations would benefit from a consideration of the webs of linguistic organizational activities, the knowledge embedded in the activities and their interactional use by members of organizations.

We believe that our analysis has also enhanced our understanding of how intertextuality plays out in strategy work. We demonstrated that even a single short sequence of interaction includes a variety of intertextual references to specific texts or spoken interactions (manifest intertextuality) and genres as activity types (constitutive intertextuality). Both kinds of intertextuality constitute strategy work as a discursive enterprise; the former kind of intertextuality contributes to local sensemaking and sensegiving, whereas the latter kind of intertextuality contributes to the order of strategy discourse. In other words, strategy is talked about by drawing on various texts and speech events, and it is talked up under the conditions of their generic qualities and other linguistic interactions.

We believe, however, that further studies would benefit from gathering data on a set of activity types in an organization and conducting a careful analysis of how strategy is recontextualized in them. This would make it possible to analyze how exactly macro-level strategy discourse is constructed through a series of interconnected linguistic interactions with which managers do their work of situated sensegiving and sensemaking.

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6 References

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The integration of a philosophical dimension in the subontology #QUALITY of FunGramKB: The case of axiological evaluation[1]

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Abstract

FunGramKB, on the one hand, is the result of a knowledge-engineering project for natural language understanding based on a knowledge base which has been designed to be reused in various NLP tasks (e.g. information retrieval and extraction, machine translation, dialogue-based systems, etc) and with diverse languages. It comprises three major interrelated knowledge level modules: lexical, grammatical and conceptual. At the conceptual level the Core Ontology is presented as a hierarchical catalogue of the concepts that a person has in mind. On the other hand, axiology is interpreted here as "the science of values" and its relevance to linguistic semantics. This implies that values are immanent in the semantic poles of symbolic units making up human language. This parameter can be traced back to the three subontologies in which FunGramKB can be split: #ENTITY for nouns, # EVENT for verbs, and #QUALITY for adjectives. In this paper we shall concentrate on the category # QUALITY and explore how the main categories and features of this parameter (positive-negative [+/-]) are represented and encoded within FunGramKB ontology, particularly inside semantic properties such as thematic frames and meaning postulates.

[1] This research is the continuation of the study published in this *LSP Journal*, vol.3, no.1 (2012), pp. 51-60, entitled: "The configuration of a philosophical parameter in the subontology #ENTITY of FunGramKB: The case of axiology".

1 A basic assumption

In this study we are trying to reconcile and integrate two apparently divergent epistemological entities: axiology (sections 2 and 3), on the one hand, which is widely considered to be a primitive, basic or key philosophical axis in the architecture of meaning construction at different levels and, on the other hand, the knowledge base entitled FunGramKB (section 4), which is a multipurpose lexico-conceptual knowledge base for natural language processing (NLP) systems. To clarify this potential integration (section 5), it is necessary to introduce the theoretical principles which can account for both entities in the following three sections.

2 Axiology

Personal Values provide an internal reference for what is good, beneficial, important, useful, beautiful, desirable, constructive, etc. Values generate behaviour and help solve common human problems for survival by comparative rankings of value, the results of which provide answers to questions of why people do what they do and in what order they choose to do them. In consequence, *valuation* is an inherent aspect of categorization. In fact, in the ontogenetic development of every human being, the first categorizations are valuations. The reason is that we are assessing beings. It is also assumed that the first categorization that a baby makes is evaluative in that it involves the division of all things into good and bad in the most primitive, sensory meaning of these terms. To appreciate the presence of values as well as to evaluate, we need to recognize some system of values. Valuations constitute an aspect of all categorizations, and categorizations directly manifest themselves in language (Felices-Lago 2003). This establishes a direct link between values and language. Langacker (1988: 64) distinguishes four types of perspective that are relevant to valuation: (i) orientation, (ii) vantage point, (iii) directionality, and (iv) subjectivity.

(i) The *orientations* RIGHT-LEFT, UP-DOWN, and FRONT-BACK can be metaphorically extended to valuation with the resulting difference in the axiological construal of various concepts. The SCALE schema is more or less explicitly present in every valuation as it can be understood in terms of the UP-DOWN or FRONT-BACK orientation. What makes the SCALE different is the PLUS-MINUS polarity, which is imposed on other schemata: UP/FRONT is PLUS and DOWN/BACK is MINUS.

(ii) *Vantage point* is closely connected with orientation. A particular scene may be construed positively or negatively, depending on the vantage point of the valuator. As a default-case option the speaker is the valuator.

(iii) Different construals in valuation may also be due to contrasts in *directionality*. For example, given entities of different size, one can compare them by relating the size of entity A to the size of entity B or by relating the size of entity B to the size of entity A.

(iv) *Subjectivity* is particularly relevant in all valuations. As Langacker observes, subjectivity is graded and varies on the scale from very subjective to very objective.

Consequently, axiology is considered to be a primitive, basic or key parameter, among others, in the architecture of meaning construction at different levels in language (Hare 1952; Osgood, Suci, Tannenbaum 1957; Katz, 1964; Coseriu 1967; Pottier 1974; Leech 1975; Nida 1975; Lyons 1977; Stati 1979; Krzeszowski, 1990, 1993, 1997; Felices-Lago, 1991, 1997; Cortés-de-los-Ríos, 2001, and many others).

One of the linguists mentioned above, Tomasz P. Krzeszowski (1990), takes a step further and criticizes the excessive importance attributed historically to the “true-false” polar axis to the detriment of the “good-bad” one, which, in his opinion, is the most important parameter in

linguistics. He arrived at that conclusion when, analyzing a large number of sentences and words, he found out that every lexical item is assessable on the good-bad scale. Some lexical items are situated close to the "good" pole, e.g. *love, care, grow, delight*, some are situated close to the "bad" pole, e.g. *hate, abhor, die, complain*, while others are situated at various distances from the two poles, with a considerable number of lexical items displaying no ostensible charge in plus or in minus, e.g. *appear, declare, compare, etc.*

3 The axiological axis in the adjectival lexicon: theoretical remarks

The development of structural semantics and its new terminology gave rise to a new discipline basically sketched by Eugenio Coseriu in 1968: *Classematics*.[2] This functional linguist was the first to raise the issue of an evaluation classeme affecting a large amount of adjectives:

> (…) there may be classes like "positive", "negative", which justify copulative combinations as It. "bello e buono" [*noble and handsome*], "grande e grosso" [*big and tall*], "piccolo e brutto"[*small and ugly*], etc., (adjectives which belong, in each case, to the same class), or adversative combinations as Sp. "pobre pero honrado" [*poor but honest*] It. "povero ma onesto" (adjectives which belong to different classes) (…). [Translated from Spanish] (Coseriu 1968, Spanish ed. 1977:176)

He only referred to adjectives, being obvious that this type of classeme would affect other open lexical classes, like verbs or nouns (Felices-Lago 1997, 2003).

Two decades ago, the developments of the Functional Grammar lexicon into a model which could integrate semantic, syntactic and pragmatic aspects of lexemes within a framework combining both paradigmatic and syntagmatic patterning was the pioneering contribution of Leocadio Martin Mingorance (1990, 1995) and his Functional Lexematic Model (FLM).[3] In this model**,** Martín Mingorance (1987: 380-84), inspired by Coseriu (1967, 1968), introduced the category *classemes*, which were defined as general semantic and syntactic determinations in the vocabulary or as a kind of grammar.[4] Then, he distinguished different kinds of classemes according to the pragmatic, semantic, syntactic, syntactic-semantic components, and concluded that the number and type of pragmatic classemes will depend on further research, but stylistic labels (diatopic, diaphasic, diastratic features) and such elements as "norm", "focus", "speaker's evaluation", "aesthetic norm", etc. constitute a kind of features which will condition the choice of specific lexemes according to the type of communicative situation. He offered an example of the process followed by a pragmatic classeme:

[2] In the Functional Lexematic Model (FLM) designed by Martin Mingorance (1987, 1990, 1995) Coseriu`s structural semantics theory and the principles of classematics are integrated in the Functional Grammar of Simon C. Dik to help develop the lexicon component.

[3] The origins of the FLM are deeply rooted in the early Functional Grammar approach to the lexicon offered by Simon C. Dik (1978, 1989) but also in the structural semantics theory of Eugenio Coseriu (1967).

[4] Coseriu accounted for *classematics* as a promising field of research at that time. He considered that an in-depth analysis of their structure and types could contribute to the clarification of a key process in language: the interaction between the pragmatic, the semantic, the syntactic and the lexical component.

> In the selection of a verb[5] like *gobble* in a communicative situation in which the speaker`s disapproval of someone`s way of eating constitutes the information focus, the lexical choice will be determined in the paradigmatic axis fundamentally by the pragmatic feature [NORM: SOCIALLY SET: VIOLATION], i.e. "violation of a socially set norm", which is most salient differentiating feature with regard to the other verbs in this paradigm (*gorge, guzzle, wolf, devour, bolt,* etc.). (Martín-Mingorance 1987: 384).

Both norms (axiological and social) are so close to each other that it is sometimes difficult to determine whether certain features of word meanings should be accounted as axiological or sociocultural. In consequence, sociocultural contexts such as biological/ social/ aesthetic norms often refer to values imposed by a given society. If in consumption, *gobble* encodes the violation of a socially-set aesthetic norm since the semantic parameters, *quickly* and *greedily*, are negatively evaluated with respect to our conceptualization of how people should eat, then we are saying that *gobble*, the same as *wolf* or *gorge* (consumption of large quantities of food), are verbs affected by the axiological evaluation pattern for exactly the same reasons as they are affected by the social (or sociocultural) pattern. In our opinion, this redundancy can be solved either by merging common aspects of both patterns or by creating a third one that accounts for such examples.

Faber and Mairal-Usón (1999) proposed four macro-organizational patterns which appear across a wide range of verbal domains: Space; Time; Sociocultural context and *Axiological Evaluation (positive/negative).* The first two patterns basically affect verbs, but the last two are shared by verbs, nouns or adjectives. The axiological pattern basically referred to Krzeszowski Lakoffian approach based on a three-level hierarchy of values (*sensory experience, life and health, spiritual level*) given by classical axiologists such as Max Scheler or Tischner. Faber and Mairal-Usón (1999: 242) also underlined the dominant function that *values* perform in the structure of concepts (Krzeszowski 1990; Felices-Lago 1991; Escalier-Fournier 1997) and followed Krzeszowski in his claim that most lexical items are assessable on an axiological scale and that, in general, words have a tendency to be axiologically loaded with positive or negative connotations in proportion to the degree of human factor associated with them. They also observed that the opposition *good* and *bad* consistently appears in the lexical semantic structure of English verbs. However, previous approaches to the nature of axiologically-loaded words had claimed that adjectives and adverbs, more than other words, carry a distinct axiological charge and, in this way, are more prototypically evaluative than nouns and verbs (Coseriu 1968; Stati 1979; Aarts and Calbert 1979; Krzeszowski 1990, 1997; Felices-Lago 1991). Obviously, it can be deducted that *axiological evaluation* is based on a series of axes, scales and figures that contribute to outlining the prototypical features characterizing its structure (Felices-Lago 2003: 187). The first axis (see figure 1) is preconceptual, lexicogenesic and dual, referring to its polar nature:

[5] Although Martin Mingorance takes a verb as an example, the same process can be applied to adjectives or nouns.

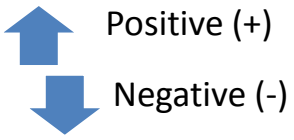

Figure 1. Polar nature of axiological evaluation

The second axis (see figure 2) is a scale which can be integrated in the previous one and refers to the varying degrees of positiveness or negativity that are essential to the units affected by the axiological pattern.

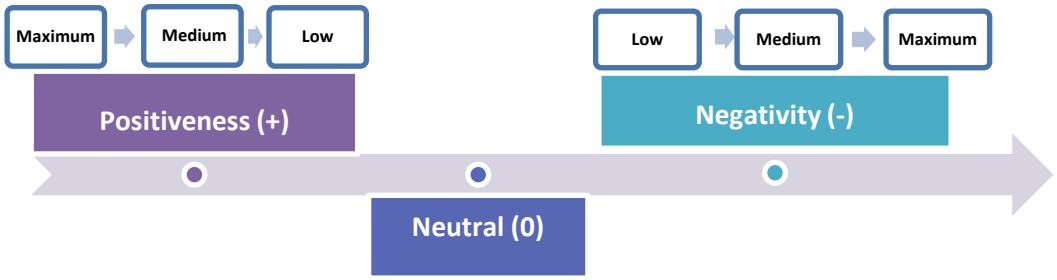

Figure 2. Axiological scale

The third axis (see figure 3) is a scale which refers to the hierarchy of axiological dimensions at linguistic level (Felices-Lago 1997: 105). This scale does not presuppose the fact that certain values are higher (or better values) than others, because that may depend on the position of each domain, subdomain or lexeme in the configuration of the adjectival lexicon. It is also related to the speaker`s individual value system or, at least, to the reliability of unbiased intersubjective sources (corpora, surveys, lexicographical definitions, etc.).[6]

Generic positiveness, 'good' encapsulates all specific positive dimensions, regardless of the existence of prototypical positive items.

Generic negativity, 'bad' encapsulates all specific negative dimensions, regardless of the existence of prototypical negative items.

[6] From a linguistic perspective, as it was claimed in Felices-Lago (2003), different axiological levels are not hierarchical according to the deterministic, religious or ideological point of view of philosophers or individuals (*i.e.* Tischner), even if their ideas are extremely well-presented. The only hierarchy that can be assumed for general purposes is built in language and depends, for its relevance (positive or negative), on what is perceived by the vast majority of speakers of a linguistic community as well as on the result of an exhaustive scrutiny of empirical data. Obviously, at a pragmatic level, the amount of potentially axiologically-sensitive units would increase dramatically depending on the speaker`s implicit illocutionary force or implicational intent.

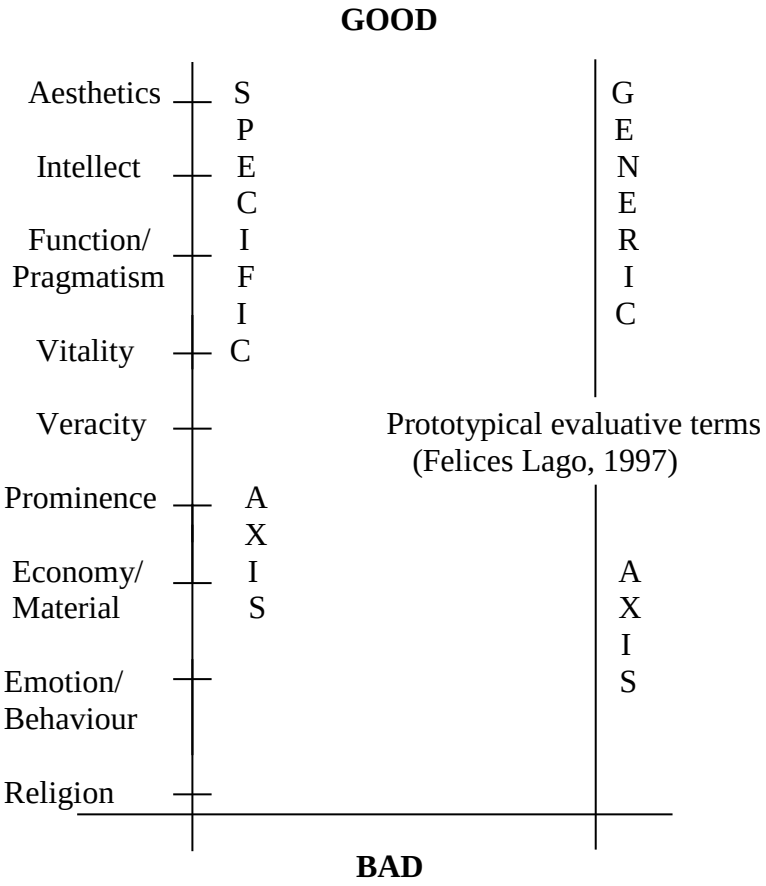

Figure 3. Hierarchy of axiological dimensions at linguistic level

As can be shown in section 5, this axiological axis (multidimensional scale) can be applied to the basic and terminal concepts included in the #QUALITY FunGramKB subontology and, consequently, extended to the adjectival lexicon units.[7]

4 FunGramKB conceptual structure

At this point, the integration of the axiological parameter in the knowledge base under construction (FunGramKB) requires at least a brief presentation of its main modules and characteristics to help the reader understand the compatibility of the integration referred to above. This project is rooted in the comprehensive theory of constructional meaning known as the Lexical Constructional Model (Mairal-Usón and Ruiz-de-Mendoza, 2008, 2009; Ruiz-de-Mendoza and Mairal-Usón, 2008, among others), which, in the last few years, has incorporated as part of its architecture *FunGramKB* (FGKB), and FunGramKB Suite, which is the combination of a user-friendly online environment for the semiautomatic construction of a multipurpose lexico-conceptual knowledge base for natural language processing (NLP)

[7] The relevance of this axis is based on the evidence provided by the axiological classifications of philosophers, psychologists and linguists throughout the 20th century. For a more detailed study, (Felices-Lago 1991: chapters 3 and 4).

systems, and more particularly for natural language understanding. On the one hand, FunGramKB is multipurpose in the sense that it is both multifunctional and multilingual. Thus, FunGramKB has been designed to be potentially reused in many NLP tasks (e.g. information retrieval and extraction, machine translation, dialogue-based systems, etc.) and with many natural languages. On the other hand, this knowledge base comprises three major knowledge levels, consisting of several independent but interrelated modules: lexical level, grammatical level and conceptual level. The conceptual level includes *the Ontology*, which is a hierarchical catalogue of the concepts that a person has in mind, so here is where semantic knowledge is stored in the form of meaning postulates.

This *Core Ontology* which is conceived as a conceptual IS-A taxonomy, allows multiple non-monotonic inheritance and distinguishes three different conceptual levels, each one of them with concepts of a different type and organized hierarchically: metaconcepts, basic concepts and terminals.

(i) Metaconcepts, preceded by the "#" symbol, constitute the upper level in the taxonomy and represent cognitive dimensions around which the rest of the conceptual units are organized. The analysis of the upper level in the main linguistic ontologies —SUMO, DOLCE, GUM, Mikrokosmos, SIMPLE etc.— led to a metaconceptual model whose design contributes to the integration and exchange of information with other ontologies, providing thus standardization and uniformity. Some metaconcepts are #ABSTRACT, #MOTION and #TEMPORAL. The result amounts to 42 metaconcepts distributed in three subontologies: #ENTITY, #EVENT and #QUALITY.

(ii) Basic concepts, preceded by the "+" symbol, constitute the intermediate level of the Ontology. These are used in FunGramKB as defining units which enable the construction of meaning postulates for basic concepts and terminals, as well as taking part as selectional preferences in thematic frames.

(iii) Terminal concepts, preceded by the "$" symbol, represent the final nodes in the conceptual hierarchy and lack definitory potential to take part in FunGramKB meaning postulates. Examples of terminal concepts are $ADAPT_00, $FLUCTUATE_00 and $SKYSCRAPER_00.

As a consequence of the the previous structure, a philosofical dimension such as *valuation* (or the axiological parameter) might be traced back to the three subontologies in which FunGramKB Core Ontology can be split: #ENTITY for nouns, #EVENT for verbs, and #QUALITY for adjectives (and some adverbs). In this paper we shall concentrate on the subontology #QUALITY and explore how the main categories and features of the axiological parameter (good-bad or positive-negative [+/-]) are represented and encoded within FunGramKB ontology. To do that, we should understand first how this ontology works on the basis of the following protocol: FunGramKB Ontology stores semantic knowledge in the form of thematic frames (TFs) and meaning postulates (MPs) by presenting a hierarchical catalogue of all the concepts (not "words", unlike FrameNet or MultiWordNet) that a person has in mind and works with two reasoning mechanisms: inheritance and inference, due to the fact that it is constructed on the basis of a deep semantic approach which not only displays concepts, but also defines them through a machine-readable metalanguage called COREL (*Conceptual Representation Language*) designed by Periñán-Pascual and Mairal-Usón (2010).

Basic and terminal concepts in FunGramKB are provided with semantic properties which are captured by *thematic frames* and *meaning postulates*. Every quality in the ontology is

assigned one single thematic frame, i.e. a conceptual construct which states the number and type of participants involved in the prototypical cognitive situation portrayed by the entity (in the case of nouns). Moreover, a meaning postulate is a set of one or more logically connected predications (e_1, e_2, … e_n), i.e. conceptual constructs that represent the generic features of concepts. As stated above, the basic concepts are the main building blocks of these types of constructs in the Core Ontology (Periñán-Pascual and Arcas-Túnez, 2007).

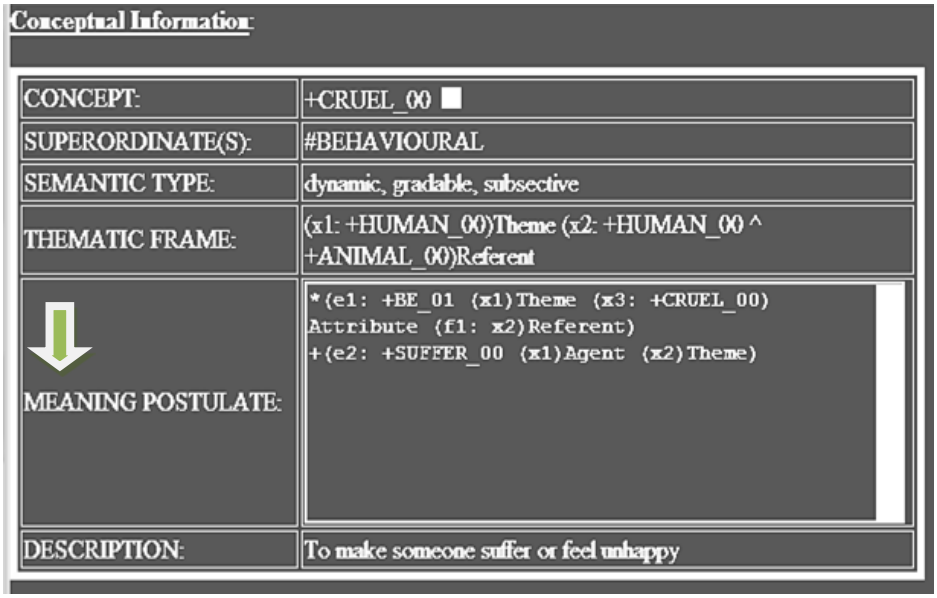

Figure 4. Meaning postulate of +CRUEL_00 in FunGramKB editor

5 Axiological representation and distribution in FunGramKB Core Ontology

Velardi et al. (1991) distinguish two well-defined strategies when describing meaning in computational lexicography: i.e. the cognitive content in a lexical unit can be described by means of semantic features or primitives (conceptual meaning), or through associations with other units in the lexicon (relational meaning). The former approach offers a stronger inferential power and guarantees the construction of a robust knowledge base applicable to most NLP tasks, consolidating thus the concept of resource reuse. However, nowadays there is no single right methodology for ontology development. Ontology design tends to be a creative process, so it is probable that two ontologies designed by different people have a different structuring (Noy and McGuinness, 2001).To avoid this problem, the ontology model should be founded on a solid methodology. The number of contributions in this field is very large and we have taken into account some key ideas from other authors having a relevant influence on the principles guiding the FunGramKB ontology (Bouaud et al., 1995; Mahesh, 1996; Noy and McGuinness, 2001; Ahmad, 2007; Barlatier and Dapoigny, 2012).

In FunGramKB, basic and terminal concepts are always stored with their ontological properties in the form of TFs (Thematic Frames) and MPs (Meaning Postulates). On the one hand, A TF is a conceptual construct which states the number and type of participants involved in the prototypical cognitive situation portrayed by concepts (Periñán-Pascual and Arcas-Túnez, 2007: 267). It must be taken into account that, unlike other ontologies, in FunGramKB every event and quality is assigned one TF. On the other hand, an MP comprises a group of one or more logically connected predications (e_1, e_2... e_n), which are conceptual

constructs carrying the generic features of concepts (Periñán-Pascual and Arcas-Túnez, 2004: 39). It also incorporates the information stated in a TF by the co-indexation of the participants.[8] Periñán-Pascual and Arcas-Túnez (2004) point out that current lexicalist models agree to handle lexical meaning as a cognitive representation reflecting the speakers` shared knowledge about the referent linked to a given linguistic expression. If we apply a syntactico-semantic description to the participants, then a set of operators allows the machine to recognize well-formed predications.

If we relate FunGramKB to the axiological parameter, in the following lines it can be observed how the axiological features are expanded and distributed throughout a set of semantic/ conceptual instruments (basic and terminal concepts, predications or satellites) and syntactic ones (predication operators such as polarity, quantification operators and logical connectors), in line with the process of stepwise conceptual decomposition characterizing FunGramKB.

5.1 Syntactic features of MPs: Operators

If Λ is a participant whose type is specified by Π, where indexed labels *x* and *f* are used by arguments and satellites respectively, then this participant can be preceded by an operator (α), which applies a specific kind of quantification to the concept expressed as a selection preference.

- Quantification Operators:

A participant can be preceded by an operator (α), which applies a specific kind of quantification to the concept expressed as a selection preference.

Feature	Value
Absolute quantifier	1 / 2 / 3 / 4 …
Relative quantifier	**m / s / p**
Indefinite quantifier	i

E.g.: **…***(e2: +BE_01 (x1)Theme (x3: **p** +SICK_00)Attribute): **$SICK_00**

Table 1. FunGramKB quantification operators

The quantification operators sensitive to axiological concepts are the relative quantifiers, particularly *m* (many or more) or *p* (a few or less), as they act as upgrading or downgrading intensifiers within the gradable semantic dimensions.

- Predication operators:

The polarity operator *n* (similar to *neg* in d-Prolog proposed by Nute (2003)) allows negative information to be explicitly stated and is the only predication operator likely to implement an axiological charge. If applied to a concept on the negative pole like +WRONG_00, then it neutralizes its negativity, as can be observed in the second example of table 2.

[8] Although the inclusion of TFs in MPs may seem redundant, it is highly necessary since it is through TFs that the mapping with the variables of the lexical templates (located in the lexical module) occurs. In other words, if TFs did not exist, the linkage between the Ontology and the different lexica would be inexistent (cf. Periñán-Pascual and Mairal-Usón, 2009).

Feature	Value
Aspectuality	ing / pro / egr
Temporality	rpast/npast /pres/nfut/rfut
Epistemic modality	cert / prob / pos
Non-epistemic modality	obl / adv / perm
Polarity	**n**

E.g.: (1) **…***(e2: **n** +BE_01 (x1)Theme (x3: +GOOD_00)Attribute): **+BAD_00**
(2)**...** +(e2: **n** +BE_01 (x1)Theme (x4: +CAREFUL_00)Attribute): **+CARELESS_00**

Table 2. FunGramKB predication operators

Finally, logical connectors used in FunGramKB: conjunction (&), disjunction (|) and exclusion (^) allow us to coordinate two axiologically-sensitive concepts in the same predication, satellite or thematic frame.

Ex: (1) Conjunction: **…** +(e2: n +BE_01 (x1)Theme (x3: +AFRAID_00 & +ANGRY_00 & +WORRIED_00)Attribute: **+CALM_00**
(2) Disjunction: **...** +(e2: +BE_00 (x1)Theme (x3: +GOD_00 | +RELIGION_00)Reference: **+HOLY_00**
(3) Exclusion: (f1: +NERVOUS_00 ^ +WORRIED_00)Manner: **$BROODING_00**

5.2 Conceptual features of MPs: Predications and satellites

Only *basic concepts* can be used in Meaning Postulates to define terminal concepts or other basic concepts. A sample of axiologically-loaded basic concepts used in the meaning postulates of relevant units are shown as follows:

+IMPORTANT_00; +BEAUTIFUL_00; +PLEASANT_00; +INTELLIGENT_00; +SICK_00; +ANXIETY_00; +COWARDLY_00; +CRUEL_00; +DECEIVE_00; +DESIRE_00; +TRUE; +FEAR_00; WEAK_00; +PLEASURE_00; +LIKE_00; +PRIDE_00; +GOOD_00; +USEFUL_00; +LAUGH_00; +ANGER_00; +INTERESTING_00; +GOD_00; +WRONG_00; +FUNNY_00; +CRAZY_00; +HAPPY_00; m +BAD_00; +WORRIED_00; +DANGEROUS_00; +DAMAGE_00, etc.

These defining units that enable the construction of meaning postulates are limited to an inventory of about 1,300 units, which come mostly from defining vocabulary in *Longman Dictionary of Contemporary English*. They can belong to any of the three subontologies (#ENTITY, #EVENT or #QUALITY) and may be found in predications or satellites as shown below:

- Predications

… *(e2: +BE_01 (x1)Theme (x3: +THIN_01 & +SICK_00)Attribute): **$CADAVEROUS_00**
...+(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +ANXIETY_00)Attribute)*: **+WORRIED_00**
… *(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +PLEASURE_00)Attribute: **+HAPPY_00**
… *(e3: +BE_01 (x3)Theme (x5: +TRUE_00)Attribute): **+SINCERE_00**

-Satellites

… (f2: (e3: +SMILE_00 (x1)Theme))Result | (f3: (e4: +LAUGH_00 (x1)Theme))Result): **+HAPPY_00**

… (f1: (e3: +SAY_00 (x1)Theme (x4)Referent (x3)Goal (f2: +GOOD_00)Manner)): **+POLITE_00**
… (f1: +EASY_00)Manner): **+CLEAR_00**
… (f1: (e3: +BE_01 (x1)Theme (x4: +WEAK_00)Attribute)):**+SICK_00**

Obviously, the most logical interaction between conceptual features and concepts under #QUALITY is that axiologically-sensitive qualities include axiologically-loaded predications in MPs as occurs with concepts describing emotions:

E.g.: # PSYCHOLOGICAL
EMOTIONAL
+(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +FEAR_00)Attribute): **+AFRAID_00**
+(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +ANGER_00)Attribute): **+ANGRY_00**
+(e2: n +BE_01 (x1)Theme (x3: +AFRAID_00 & +ANGRY_00 & +WORRIED_00) Attribute): **+CALM_00**
*(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +PLEASURE_00)Attribute (f2: (e3: +SMILE_00 (x1)Theme))Result | (f3: (e4: +LAUGH_00 (x1)Theme))Result): **+HAPPY**
*((e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +ANGRY_00)Attribute (f2: (e3: +DESIRE_01 (x1)Theme (x5)Referent))Reason)(e4: +HAVE_00 (x2)Theme (x5)Referent)): **+JEALOUS_00**
+(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +PRIDE_00)Attribute): **+PROUD_00**
+(e2: n +BE_01 (x1)Theme (x4: +HAPPY_00)Attribute (f1)Referent): **+SAD_00**
+(e2: +FEEL_00 (x2)Agent (x1)Theme (x4: +ANXIETY_00)Attribute): **+WORRIED_00**

However, there are cases in which non axiologically-sensitive concepts under the #QUALITY subontology may include axiologically-loaded predications in their MPs such as “good” in +RIPE_00 or “popular” in +PUBLIC_00, as shown in the following examples:

(1) # PHYSICAL
+RIPE_00
*(e2: +BE_01 (x1)Theme (x3: ***+GOOD_00)**Attribute (f1: (e3: +INGEST_00 (x4: +HUMAN_00)
Agent (x1)Theme (x5: +THROAT_00)Location (x6)Origin (x7: +STOMACH_00) Goal))Purpose)

(2) # SOCIAL
+PUBLIC_00
*(e1: +BE_01 (x1)Theme (x2: ***+POPULAR_00**)Attribute)

5.3 Distribution of basic and terminal concepts among the metaconcepts[9]

In total, 128 out of 321 basic and terminal concepts included in the subontology #QUALITY are sensitive to inherent axiological information in their MPs. That represents, approximately, 40% of all instances. This information refers only to axiologically-sensitive concepts, but it should also be noted that there are also a few more concepts which are not intrinsically axiological but include axiologically-sensitive defining concepts in their MPs. The relevant axiolologically-sensitive concepts are distributed among the metaconcepts like this:

[9] It must be taken into account that knowledge engineers in FunGramKb Core Ontology have modeled and defined 422 concepts under the subontology #EVENT, 931 under #ENTITY and 321 under #QUALITY. According to previous studies (Felices-Lago and Cortés de los Ríos [forthcoming]), 103 basic and terminal concepts under #EVENT have proved to be sensitive to the axiological parameter (25%), whereas only 74 basic and terminal concepts under #ENTITY (8%) have proved to be axiologically-loaded (see Felices *et al*. in this journal, vol.3, no.1 (2012), pp. 51-60).

(1) #PSYCHOLOGICAL
  (1.1) #EMOTIONAL: 31
  (1.2) #BEHAVIOURAL: 26
  (1.3) #COGNITIVE: 12
  TOTAL: 69
(2) #SOCIAL: 33
(3) #PHYSICAL: 24
(4) #QUANTITATIVE: 2

The #TEMPORAL and #SPATIAL metaconcepts do not include axiologically-sensitive concepts.

The most relevant finding of the distribution of axiologically-sensitive concepts under the subontology #QUALITY is the high number of occurrences under the metaconcept #PSYCHOLOGICAL (more than half of the set of concepts selected) and, particularly, the balance between concepts under its subordinate metaconcept #EMOTIONAL and concepts under #BEHAVIOURAL. This is not unusual due to the close connection between emotions and conduct and the prominent role played by adjectives to describe emotional and behavioral phenomena in human beings or, to a lesser extent, in animals.[10] It is surprising that concepts under #PHYSICAL also reach a prominent position (24 examples), very close to the number of occurrences under #SOCIAL (33 examples). In fact, intuitively, we would expect this metaconcept to be the leading domain or, at least, at the same level as #PSYCHOLOGICAL.

5.4 Distribution of concepts from the Core Ontology in the axiologically-loaded dimensions

As shown in the previous section, the number of axiologically-loaded concepts under #QUALITY subontology amount to 128 occurrences (including those intrinsically affected by operators). Their distribution among the axiological dimensions referred to in figure 5 is as follows:

A) GENERIC AXIS
Prototypical evaluative concepts:
+BAD_00, $BAD_00, +GOOD_00, $GOOD_00

B) SPECIFIC AXIS
1a) Emotion (Behaviour) or Hedonism: +AFRAID_00, $AFRAID_00, +ANGRY_00, $ANGRY_00, +CALM_00, +CRAZY_00, $CRAZY_00, $CRAZY_01, $CRAZY_N_00, +EAGER_00, $FRAGRANT_00, +HAPPY_00, $HAPPY_00, $IMPATIENT_00, $IMPATIENT_N_00, $INSANE_00, +JEALOUS_00, $MELODIOUS_00, +NERVOUS_00, +PLEASANT_00, $PLEASANT_00, $PLEASANT_N_00, +SAD_00, $SAD_00, +SENSITIVE_00, +SERIOUS_00, $SERIOUS_N_00, +SORRY_00, $SORRY_00, +SWEET_00, $TASTY_00, $VESANICO_00, +WORRIED_00, $WORRIED_00.
1b) Behaviour (Emotion): +BORING_00, +CAREFUL_00, $CAREFUL_00, +CARELESS_00, +CRUEL_00, +COWARDLY_00, $COWARDLY_N_00, +DISHONEST_00, $DISHONEST_N_00, +DANGEROUS_00, $DANGEROUS_N_00,

[10] This assumption has been deeply explored since antiquity. See in particular the Plato and Aristotle theory of the GCB (Great Chain of Being) (Krzeszowski, 1997) and also, from a more scientific perspective, see the classical theories of emotion in modern psychology (W. James, 1884).

+FRIENDLY_00, $FRIENDLY_N_00, +FUNNY_00, +GENEROUS_00, $GENEROUS_00, $GENEROUS_N_00, $HASTY_00, +NOISY_00, $NOISY_00, $NOISY_N_00, +POLITE_00, $POLITE_N_00, +SINCERE_00, $SINCERE_N_00, $TIDY_00, +VIOLENT_00, $VIOLENT_N_00.
2) Veracity: +LEGAL_00, $LEGAL_N_00, +REAL_00, $REAL_N_00, +TRUE_00, TRUE_N_00, +WRONG_00, $WRONG_N_00.
3) Vitality: +ALIVE_00, $CADAVEROUS_00, $CLAMMY_00, +DIRTY_00, $DIRTY_N_00, +FRAGILE_00, $FRAGILE_00, $OBESE_00, +OLD_00, $OLD_N_00, $PINCHED_00, +PURE_00, $PURE_N_00, $SENILE_00, +SICK_00, $SICK_00, $SICK_N_00, +STRONG_00, +TIRED_00, $TIRED_N_00, , +WEAK_00.
4) Aesthetics: +BEAUTIFUL_00, +BIG_01, $BULKY_00, +UGLY_00.
5) Prominence: $EMINENT_00, +FAMOUS_00, $FAMOUS_N_00, +IMPORTANT_00, $IMPORTANT_00, $IMPORTANT_01, $IMPORTANT_N_00, +INTERESTING_00, +POPULAR_00, $POPULAR_N_00, +PROUD_00, +ROYAL_00.
6) Function/Pragmatism: + DIFFICULT_00, +EASY_00, +USEFUL_00, +USELESS_00, $OBSOLETE_00.
7) Economy/Material: +EXPENSIVE_00, $EXPENSIVE_N_00, +FREE_00, +RICH_00, RICH_N_00.
8) Religion: +HOLY_00
9) Intellect: +CLEAR_00, $CLEAR_N_00, +INTELLIGENT_00, $INTELLIGENT_01, $INTELLIGENT_N_00.

Figure 5: Distribution of concepts among axiological dimensions

62 out of 128 concepts refer to emotions linked to behaviour or behaviour linked to emotional processes. That is almost half of all occurrences and implies that emotional and behavioural concepts tend to be the most prototypically sensitive to the axiological axis and, in consequence, this affects a considerable number of concepts under the #QUALITY subontology. It can be considered normal that prototypical evaluative concepts such as "good" or "bad" are reduced in quantity, but not in frequency, as they are widely used to define axiologically-sensitive concepts in this and the other two subontologies. It is also worth noting that the ontological units which refer to the vitality dimension amount to twenty-one cases, which is a significant quantity, particularly when it is compared with previous subontological analyses (Felices-Lago *et al.* 2012 and forthcoming). Socio-ethical non-behavioural concepts or those which generally refer to the areas of *prominence*, *veracity*, *economy* or *religion* totalize 26 instances (20%).This percentage meets our previous expectations and can be rated as a predictable result. However, the amount of concepts under *intellect* or *function/pragmatism* (5 units each) is considerably high if compared to the previous analyses in the #ENTITY or #EVENT subontologies, particularly when no match could be found in two out of four classifications. Consequently, it can be claimed that these two axiological categories are better grounded in the adjectival subontology.

6 Conclusions

The previous discussion of the analyzed data facilitates the most outstanding result: the impact of the axiological classeme in the FunGramKB Core Ontology can be defined as substantial, particularly in the #QUALITY subontology, as 40% of all instances are sensitive to this parameter. Consequently, it can be claimed that there is a solid foundation to consider #QUALITY as more sensitive to the axiological parameter than #EVENT or #ENTITY.

In general terms, it has been observed how the axiological features are expanded and distributed throughout a set of semantic-conceptual instruments (basic concepts used to define MP predications or satellites or those used to define terminal concepts) and/or syntactic-semantic ones (predication operators such as quantification or polarity) in line with the process of stepwise conceptual decomposition characterizing FunGramKB. This reinforces *evaluation* as a fact of crucial importance for a well-founded understanding of the relationship between lexical structure and cognition.

The results obtained in the present study have shown the high number of axiologically-sensitive concepts under the metaconcept #PSYCHOLOGICAL (more than half of the corpus selected) and, particularly, the connection between #BEHAVIOURAL and #EMOTIONAL. This finding provides further evidence about the axiological link between conduct and emotion and also, to a certain extent, the way in which a group of concepts under the #COGNITIVE metaconcept also act as a bridge between emotion and perception. Furthermore, it has been proved that concepts under #SOCIAL or #PHYSICAL also reach a prominent position and become leading axiologically-sensitive conceptual domains.

To sum up, we can conclude that the proposal to insert axiological notations in FunGramKB ontology, in the FunGramKB lexica under construction, or additionally in other levels of meaning description in the Lexical Constructional Model, should be explored as a key factor for meaning construction. The results of this research as well as the two previous studies in the same vein for the #EVENT and #ENTITY subontologies should be taken as stepping stones in that direction.

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Investigating tasks in the context of business English: Sources of difficulty and motivation from the learner's perspective

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Abstract

Although communicative tasks are widely used in teaching such business English topics as meetings and negotiating, not many studies have explored how learners perceive these tasks. In the field of second language acquisition (SLA), a great deal of research has been conducted on tasks in general. However, research on business English tasks is rarely found in the literature either of SLA or of English for specific purposes (ESP). To fill this research gap, the present study examines task-based language learning in business English contexts. Specifically, it investigates some sources of difficulty and motivation that are associated with task-based language learning on a business English course and explores learners' perceptions surrounding four tasks in the form of business meeting role-plays. Data for the study include pre- and post-task questionnaires and retrospective interviews. The study shows that learners' perceptions of task difficulty and their motivation to work on a task are influenced not only by the design features of the task, but also by learner factors, such as their own motives, life histories and prior learning experiences. The study also shows that sociocultural SLA is highly relevant to research on task-based language learning in an ESP context and that future sociocultural studies of tasks can benefit from the use of task typologies.

1 Introduction

With the advent of communicative language teaching (CLT) and learner-centered approaches to curriculum development, it has emerged as crucial to understand learners and their perceptions. As Tarone and Yule (1989: 133) noted more than two decades ago, "the importance of the learner's perspective is recognized in virtually all modern approaches to the language-learning process". But, despite the wide use of CLT in business English, few studies have examined business English learners' perceptions and perspectives, notably those pertaining to their learning process. This is not surprising, given the general lack of research into business English pedagogy. As Nickerson (2005) remarks, although many researchers are themselves practitioners, research into business English pedagogy is limited.

In the field of second language acquisition (SLA), a great deal of research has been conducted on different topics related to learners and their learning. However, because the fields of English for specific purposes (ESP) and SLA rarely coincide, few of the insights from SLA research have informed ESP research, or vice versa. This lack of cross-fertilization between ESP and SLA is evidenced by the fact that very few research studies in SLA are conducted in the context of ESP, and little ESP research has explored the issues related to language learning which are traditionally investigated by SLA researchers. One of the areas that has attracted a great deal of research in SLA is task-based language teaching and learning (Ellis, 2003; Samuda & Bygate, 2008). However, although communicative tasks are found in many mainstream business English coursebooks (Chan, 2009) and are the key components of many resource books for teachers (e.g. Chan & Frendo, forthcoming; Emmerson & Hamilton, 2005), studies of business English tasks are rarely found in either the SLA or the ESP literature.

Two areas of pedagogical importance not only for general English but also business English are task difficulty and task motivation. Some understanding of learners' perceptions of task difficulty and what makes a task motivating for them can help materials writers, curriculum developers and teachers alike to design and sequence tasks in such a way that the learners working on these tasks can feel reasonably challenged and at the same time motivated. Issues related to task difficulty and task motivation have been investigated by some SLA researchers, mainly those from the cognitive tradition (e.g. Dörnyei & Kormos, 2000; Foster & Skehan, 1996; Kormos & Dörnyei, 2004; Robinson, 2001, 2007; Skehan & Foster, 1997). However, despite the importance of task difficulty and task motivation for business English pedagogy, studies on these areas by business English researchers are rare.

The present study seeks to investigate what the learner sees as sources of difficulty and motivation in task-based language learning in the context of business English. Specifically, it investigates the task type of role-plays in the form of business meetings. Participating in business meetings is an important activity in the business world (Crosling & Ward, 2002). However, while the discourse of meetings has attracted a great deal of research (e.g. Bargiela-Chiappini & Harris, 1997; Handford, 2010; Koester, 2010; Rogerson-Revell, 2008), business meeting role-plays, as a type of task in business English teaching, have not so far received much research attention from either ESP or SLA researchers. The present study attempts to fill this research gap by applying relevant concepts from ESP and SLA to analyze the sources of difficulty and motivation when learners perform business meeting role-plays. In this paper, I first review the relevant literature on 1) tasks in ESP and SLA research, 2) task difficulty, and 3) task motivation. I then present the findings of the research, which illustrate the role played by the task, the learner and the interaction of the two in shaping perceptions. Finally, I discuss the implications of this study for research and pedagogy.

2 Literature review

2.1 Tasks in ESP and SLA research

One important difference between the tasks of interest to ESP researchers and those of interest to SLA researchers may be captured by the distinction between pedagogical tasks and real-world tasks (or target tasks). In Nunan's (2004) definition, real-world tasks "refer to the uses of language in the world beyond the classroom", whereas pedagogical tasks are the tasks which occur in the language classroom (p. 1). Real-world tasks are of particular interest to ESP practitioners, many of whom have attempted to identify the real-world tasks which the

learners in their specific teaching context would need to perform in the target situation (Dudley-Evans & St John, 1998) as the basis of their curriculum development. Lambert (2010), for example, has identified several workplace tasks and their associated target tasks (e.g. the workplace task of answering inquiries is found to involve talking about quantities, prices and delivery schedules). More recently, Evans (2013) has provided suggestions for designing business English tasks on the basis of findings about real-world practice. So far, however, the task types derived from real-world tasks, in particular those from ESP contexts, have not received much attention from SLA researchers.

As in most areas of SLA research, two paradigms exist in task-based research – the psycholinguistically- or cognitively-based tradition, and the sociocultural perspectives, among which Vygotskian sociocultural theory has had the most influence (Zuengler & Miller, 2006). In cognitive studies of tasks, researchers have identified various dimensions of the design features of tasks and investigated their effects on cognitive complexity, as reflected by such indicators as the fluency, accuracy and complexity of the language produced by the learners as they perform the task (see Ellis (2003), Samuda and Bygate (2008) and Skehan (1998) for reviews)[1]. Examples of task features which have been investigated in SLA include one-way vs. two-way tasks (Long, 1981); convergent vs. divergent tasks (Duff, 1986; Pica, Kanagy & Falodun, 1993); personal vs. narrative vs. decision tasks (Foster & Skehan, 1996; Skehan & Foster, 1997), etc. To capture the differences in task features across different types of task, Pica, Kanagy and Falodun (1993) propose a useful task typology covering five types: jigsaw, information gap, problem solving, decision making and opinion exchange, all exhibiting different task design features, including interactant relationship, interaction requirements, outcome options and goal orientation. Task typologies function as a framework where researchers can identify the design features that distinguish one task from another; this in turn helps them to ascertain more precisely the source of differences between tasks in the dependent variables of interest. Sociocultural researchers, however, rarely adopt task typologies in task research, partly because they tend to be more interested in the learner than in the effects which different task features can produce.

In the cognitive tradition, task factors are often assumed to be fixed and independent of the learner. As Samuda and Bygate (2008) note, cognitive studies of tasks usually aim at identifying consistent effects of the task on learners "whoever they are and whatever their learning context" (p. 95). Sociocultural studies of tasks, in contrast, emphasize the role of the learner. A major insight of sociocultural studies on tasks is the unpredictability of task processes and outcomes once learners, who have their own motives, start implementing them. This unpredictability is illustrated by the "same task, different activities" phenomenon reported in Coughlan and Duff (1994), who, on the basis of activity theory (Leont'ev, 1978), draw a distinction between the task as a "behavioral blueprint" and the activity as the outcome which learners generate when carrying it out. They find that the same task can lead to different task processes and outcomes, not only when performed by different learners, but even when performed a second time by the same learner. Informed by activity theory, some studies have investigated the role of learners' motives and goals in task-based language learning, as well as the role which learners' actions can play in shaping task processes and outcomes (e.g. Brooks & Donato, 1994; Coughlan & Duff, 1994; Donato, 1994; Kobayashi, 2003; Parks, 2000; Roebuck, 2000; Storch, 2004). By contrast, in experimental and

[1] Apart from task design features, various learner factors, procedural factors and implementation conditions have also been investigated by task-based researchers. For the purpose of this paper, however, the focus is on task types and their associated features.

correlational task studies conducted in the cognitive strand of task-based research, the role of motives is rarely considered. As Ellis (2003) comments,

> One of the implications [of taking learners' motives into account] is that researchers need to ascertain what motives learners bring to a task if they are to understand the interactions that occur when the task is performed. In this respect, much of the task-based research that has taken place to date is seriously at fault. (p. 184)

While sociocultural studies of tasks have the strength of being aware of the role of learners' motives, a drawback of these studies, as Ellis (2000) critiques, is that they pay scant attention to the impact which task variables may have on learning. This is a valid point, since the effects of task features are very rarely explored in sociocultural studies, although, from an activity theory perspective, the influence of the task is something to be acknowledged (Lantolf, 2005).

2.2 Task difficulty

The notion of task difficulty is important for syllabus design because of its influence on the grading and sequencing of tasks. As Nunan (1988: 47) states, "any proposal failing to offer criteria for grading and sequencing can hardly claim to be a syllabus at all". Two well-known frameworks for characterizing task difficulty are Skehan's "three-way distinction for the analysis of tasks" (1998) and Robinson's "triadic componential framework" (Robinson, 2001). Skehan's framework draws distinctions between code complexity, cognitive complexity (which includes cognitive familiarity and cognitive processing), and communicative stress. Robinson's componential framework distinguishes between "task complexity" (which is the result of the cognitive demands imposed by the task), "task difficulty" (which depends on such learner factors as affective and ability variables), and "task conditions" (which include such interactional factors as participation and participant variables). Robinson maintains that, because task difficulty, which arises from learner factors, cannot be determined *a priori*, tasks should be sequenced solely on the basis of their complexity.

Until Tavakoli's (2009) study, not much had been done to verify that the variables specified in task difficulty frameworks were in fact what the learners themselves perceived as sources of difficulty. Using a qualitative method and working with picture narrative tasks, Tavakoli considered learners' perceptions of difficulty in relation to the frameworks by Skehan and Robinson[2]. It was found that cognitive demands, clarity of the picture/story, linguistic demands, amount of information, learner-related and affective factors, etc. were the sources of difficulty named by the learners. Tavakoli's conclusion is that, although Skehan's framework covers more types of relevant cognitive factor than Robinson's, the former would still benefit from incorporating learner factors. One interesting observation in Tavakoli's study is that conflicting views sometimes appeared among the learners; for example, "there were markedly different opinions on whether too much information in a picture story would make narrating it easier or more difficult" (p. 12). This suggests that the same task can be perceived differently by different learners. However, the study did not investigate the reasons behind the differing perceptions, interesting though these would have been to researchers in both the cognitive and the sociocultural domains.

[2] Tavakoli's study compared the perceptions of teachers and learners, but for the purpose of the present review, only the part dealing with the learners is discussed.

Another relevant study of task difficulty is by Nunan and Keobke (1995). In this study, it was found that the sources of difficulty perceived by the learners included both task factors (e.g. the open-endedness of the task) and learner factors (e.g. cultural knowledge). It was also found that learners' differing perceptions of the difficulty of a task can lead to different consequences. For example, learners who perceived a task to be more difficult than it actually was (as measured by successful performances of the task) were intimidated and either did not give it appropriate effort or did not attempt it. This finding points to the significance of learner perceptions of task difficulty, since these perceptions can directly influence the way in which learners approach a task and the outcome of the task.

2.3 Task motivation

Task motivation has received significantly less attention from SLA researchers than task difficulty, and empirical studies of task motivation have been "few and far between" (Kormos & Dörnyei, 2004: 1). Julkunen (2001) suggests that task motivation depends on both general motivational orientations and "the unique way the student perceives the task" (p. 33). On the basis of this distinction, it has been argued that learners should be motivated by both task-independent and task-dependent factors (Dörnyei, 2002: 139; Julkunen, 2001). According to Julkunen (2001), the term task motivation can be used "when task characteristics are the focus of attention in motivation" (p. 33).

The two major studies related to task motivation conducted in cognitive SLA are Dörnyei and Kormos (2000) and Kormos and Dörnyei (2004), which use task engagement measures in the form of the number of words and the number of turns produced by learners as indicators of task motivation. The researchers consider these measures relevant because "a hasty and unmotivated solution in which no real arguments or attempts at persuading the interlocutor are involved can be achieved by using very few turns" (Dörnyei & Kormos, 2000: 283). Studies taking this approach seek to ascertain how "a more positive versus a more negative attitude towards a *particular* task displayed significant differences from each other" (Dörnyei, 2002: 143; emphasis added). However, since it was not the purpose of these studies to ascertain how learners' levels of motivation vary as a result of changes in task characteristics, further research is necessary to ascertain how tasks with different characteristics influence a learner's level of motivation to perform them.

Taking a sociocultural perspective, Platt and Brooks (2002) relate task engagement not only to the motivation exhibited by the learner but also to the difficulty of the task. By investigating task performance using a microgenetic approach, i.e., observing how the task unfolds moment by moment, Platt and Brooks identify the qualitative evidence of task engagement and relate it to the feeling among learners of being motivated as they overcome the difficulties of a task. They find that "true engagement" is manifested "both verbally and nonverbally" (p. 391), and is associated with learners' feeling "more motivated", "personally strengthened" and "empowered" as a result of overcoming the difficulties of a task (p. 390). The findings of the study contribute to the understanding of the relationship between task motivation, task difficulty and task engagement. However, since task features were not the focus of this study, as is often the case with sociocultural studies of tasks, it is unclear how different types of task may influence task motivation differently.

3 The study

3.1 Background

The research reported in the present paper is a preliminary study for a larger project investigating tasks in business English contexts (Chan, 2010). It is exploratory in nature and was conducted during a 5-day voluntary summer course in business English at a university in Hong Kong. Two classes of the same course, Classes A and B, were offered in two different weeks. The course adopted a task-based approach and was designed and taught by me. Different business English topics were covered in the course, and a range of data was collected throughout the course for both research and course development purposes. In the present paper, I focus on learners' perceptions of four tasks in the form of business meeting role-plays through analyzing the data collected from questionnaires completed by the students in the two classes and from individual interviews with four of the students.

3.2 Research questions

The present study aimed to identify sources of task difficulty and task motivation in business English contexts. The research questions were:

1. What factors influence learners' perceptions of task difficulty?
2. What factors influence learners' motivation to perform a task?

3.3 Participants

The participants were 35 students from various faculties taking the summer course, 17 in Class A and 18 in Class B. Apart from six students who were postgraduates and/or Mandarin-speaking students from Mainland China, all the students were Cantonese-speaking undergraduates from Hong Kong, who had entered the university upon graduation from secondary school and had had no full-time work experience. Four of the students, two from each class, agreed to be interviewed on completion of the course. Their pseudonyms are Ray, Vicky, Ada and William. All the four interviewees were local Hong Kong students who had learned English for at least 15 years before entering university (from kindergarten to secondary school). They had all gone through the same local public examinations in English before entering the university. None of the interviewees had taken any business English courses before taking the summer course. Among the interviewees, only Ray had had experience of working in business – he had been a part-time telemarketing agent. The interviewees' backgrounds, as shown in their answers in a pre-course questionnaire to identify needs, are summarized in **Table 1**:

Interviewee (Pseudonym)	**Class**	**Major**	**Business English courses taken before taking the course**	**Reason for taking the course / Skills they thought they would need in the future**	**Work experience in business**	**Tasks performed**
Ray	A	Biochemistry	None	"improve communication skills" / "how to convince customers to buy your products"	5 months (part-time) in a telesales company	1, 2, 3, 4
Vicky	A	Economics and Finance	None	"want to know how to communicate in a more professional way	None	1, 2, 3, 4

				(like a business woman)" / "negotiation"		
Ada	B	Industrial Engineering	None	"I think it is useful in the future, because I may probably work in a business field." / "the terms specifically for business", etc.	None	1, 2, 4
William	B	Statistics and Actuarial Science	None	"it is quite interesting" / "talk to colleagues or clients; presentation"	None	1, 2, 4

Table 1. Background information on the interviewees

3.4 Tasks

The four tasks investigated in this study were all in the form of business meeting role-plays. Two of the tasks were adapted from role-plays in business English coursebooks and the other two were designed by me. The four tasks were all open tasks (i.e. they have no single preferred outcome) and fell into different categories in the typology proposed by Pica, Kanagy and Falodun (1993). The content and features of each task are described below and summarized in **Table 2.**

Task 1 – Social Event

Task 1 was adapted from a meeting role-play found in a business English textbook (Jones & Alexander, 2000: 112). Learners were asked to hold a meeting to brainstorm ideas for a social event based on an agenda provided, and to decide on the date and duration of the event, what form it should take, etc. In terms of task type, this task involves elements of both "opinion exchange" and "problem solving" in the typology of Pica, Kanagy and Falodun (1993); the goal orientation is first divergent (i.e. different possibilities are allowed) and then convergent (i.e. learners need to converge or agree on a particular solution).

Task 2 – Reducing Costs

This task was adapted from another business English textbook (Wallwork, 2002: 24). In the task, three options for reducing personnel costs were given, and learners were asked to decide which one to adopt. The task type is "decision-making", in which learners are "expected to work toward a single outcome, but have a number of outcomes available to them" (Pica, Kanagy & Falodun, 1993: 22). The goal orientation of the task is thus convergent. Unlike Task 1, where there are no specific roles, four different roles are specified in Task 2, and each one is told its stance in the discussion (e.g. the trade union member is "against any cuts in salary", and the new member of management prefers job-sharing and a four-day week).

Task 3 – Outsourcing (in the same culture)

This task was designed by me and was intended to be an "information gap" task. It divides a group of learners into two smaller teams to role-play members of staff from two companies, an insurance company and a telesales company. The insurance company is considering outsourcing part of its operation to the telesales company. This is an initial meeting between the two companies to exchange information about services and prices. Only the learners in Class A performed this task (see the description of Task 4 below for the rationale behind this arrangement).

Task 4 – Outsourcing (intercultural)

This task entails the same content as Task 3, except that the two companies are from two different cultures. All the learners were given descriptions of the culture associated with their role. From the perspective of task design, Task 4 involves more task demands; it requires learners not only to exchange information about services and prices, but also to act according to the specified cultural characteristics and to handle cultural differences. To investigate the possible effects of the additional task demand, the learners in Class A were asked to perform both Tasks 3 and 4, whereas the learners in Class B were asked to perform Task 4 only.

The information about the tasks is summarized in **Table 2**.

Task No.	**Task**	**Task type according to Pica, Kanagy and Falodun (1993)**	**Main task features**
Task 1	Social event	Opinion exchange and problem solving	▪ Non-specialist content ▪ Same role for all
Task 2	Reducing costs	Decision making	▪ Business-related content ▪ 4 different roles (from the same company)
Task 3 (Class A only)	Outsourcing (same culture)	Information gap	▪ Business-related content ▪ 2 different roles (from 2 companies)
Task 4	Outsourcing (intercultural)	Information gap	▪ Business-related content ▪ 2 different roles (from 2 companies) ▪ 2 different cultures

Table 2. Features of the four tasks

The implementation conditions were similar for all the tasks. Each group was given 5-10 minutes to read the task rubric and plan for the task. The students were asked to try to finish each meeting within 20 minutes.

3.5 Method

The present study made use of two main data sources – the pre- and post-task questionnaires and the four individual interviews conducted on completion of the course.

3.5.1 Questionnaires

The data on perceptions were collected from two sets of pre- and post-task questionnaires (see Appendices 1 and 2). The questionnaires were used to identify the factors influencing learners' perceptions of task difficulty and their level of motivation for performing the task, as reported by the learners themselves. Questionnaire 1 was used for Tasks 1 and 2. Questionnaire 2, which was designed to gather the perceptions related to the task demands, was used for Tasks 3 and 4.

3.5.2 Interviews

The individual interviews with the four participants were all conducted in English. All the interviews were audio-recorded and transcribed. To ascertain the relationship between task

factors and learner perceptions, all the four interviewees were shown the relevant task rubrics during their interview and asked to do the following:

1. describe what in general makes a task difficult and motivating
2. describe the specific difficulties that they encountered while doing the tasks under investigation
3. describe what they found motivating while doing these tasks
4. rank the tasks by:
    a. level of difficulty
    b. level of motivation
    c. level of usefulness
    d. level of interest
5. explain the reasons behind their rankings and perceptions of each task, and compare and contrast the tasks.

Although the list of interview questions served as a guide, any interesting and relevant points which came up during the interview but were not covered in the list were followed up.

3.6 Data analysis

The qualitative data from the questionnaires and the interviews were categorized and analyzed. During the data analysis, it was found that most of the sources of difficulty and motivation fell into four main categories – they could be factors regarding the task, the learner, the interlocutor, or the implementation conditions. However, it was also found that certain items were somewhat ambiguous; for example, some learners wrote down “interesting”, “useful” and “challenging” as the reason for being motivated to work on the task. As discussed below, it was not clear which category these sources of motivation should belong to (for instance, is “interesting” a task factor or a learner factor?). This ambiguity called for further investigation, and the interviews proved to be a useful source of data for triangulation.

4 Results from the questionnaires

4.1 Sources of difficulty

In the questionnaires, learners could rate the difficulty of the task by circling a number from 1-5. In addition to the ratings, they could provide reasons for their perceptions. While some learners provided more than one reason, others did not provide any. The three most frequently listed reasons, both pre- and post-task, are given in **Table 3**, with the number of learners who offered them being shown in brackets. All the items in the table are sources of difficulty, except where they are shown in italics, which indicates that the item was given as a reason why the learner(s) in question thought the task was easy.

Task	Pre-task difficulty	Post-task difficulty
Task 1 N=24	**Classes A and B** ▪ Time limit (9) ▪ Content – Lack of details (4) ▪ Lack of familiarity with content/prior experience (3)	**Classes A and B** ▪ Time limit (2) ▪ Lack of proficiency (2) ▪ Content – Lack of details (2)
Task 2 N=25	**Classes A and B** ▪ Position (9) ▪ Lack of familiarity with content/prior experience (4) ▪ Time limit (2)	**Classes A and B** ▪ Position (9) ▪ Lack of proficiency (4) ▪ Convergent goal orientation (2)
Task 3 N=14	**Class A only** ▪ Lack of familiarity with content/lack of prior experience (4) ▪ Position (1) ▪ *(Easy) Familiarity with the insurance field* (1) ▪ *(Easy) Sufficient information provided* (1)	**Class A only** ▪ Lack of familiarity with content/lack of prior experience (2) ▪ Position (2) ▪ Cognitive complexity – dealing with numbers (2)
Task 4 N=16	**Class A** ▪ Dealing with cultural differences (5) ▪ Role-playing in another culture (4) ▪ (*Easy) Prior experience from Task 3* (4)	**Class A** ▪ *(Easy) Prior experience from Task 3* (5) ▪ *(Easy) Culture A is easy* (2) ▪ Dealing with cultural differences (2)
Task 4 N=16	**Class B** ▪ Position (1) ▪ No need to converge (1) ▪ Culture (1) ▪ Lack of familiarity with content/prior experience (1)	**Class B** ▪ Task demands (4) ▪ Culture (4) ▪ Lack of details (1)

Table 3. Reasons provided by learners in support of their perceptions of difficulty

The source of difficulty most frequently cited pre-task for Task 1 was an implementation factor (the time given for learners to complete the task). The learners thought that the time given might not have been enough, probably because this was their first business meeting role-play in the course. The sources of difficulty cited post-task included an implementation factor (time limit), a learner factor (their perceived lack of proficiency to handle the task) and a task factor (lack of details given in the task to facilitate the discussion).

The source of difficulty for Task 2 most frequently cited by learners, both pre- and post-task, was a task factor, which I call "position". This source of difficulty arose from the fact that all the different roles have different interests to defend: as some learners put it, "everybody represents different positions". The different positions made the task difficult because, as the reasons given by the learners show, it was difficult to "disagree with others", "persuade each other" and "compromise [on] different opinions".

The major source of the pre- and post-task difficulty for Task 3 for the learners in Class A was the lack of familiarity with the content, or lack of prior experience. Other sources of task

difficulty included the conflicting positions between the two companies and the cognitive complexity involved in dealing with numbers. Still, two learners found the task easy, the reasons being familiarity with the insurance field and the presence of sufficient information given in the task rubric.

The main source of difficulty listed for Task 4 by the learners in Class A (who performed both Tasks 3 and 4) was mainly related to the cultural element of the task. Although Task 4 involved the same business content as Task 3 (outsourcing of services, checking prices, etc.), the learners in this class did not list the business-related aspects as sources of difficulty. In addition, because of their previous experience from Task 3, there were learners who perceived the task to be easy, both pre- and post-task.

The learners in Class B, who did not perform Task 3, perceived the task somewhat differently. Not many qualitative responses were given in either the pre- or post-task questionnaire, but from the few responses given, it can be seen that, while culture was listed as a source of difficulty both pre- and post-task, four learners also perceived the task to be difficult because there were many task demands (as one learner put it, there were "many considerations"). This can be seen also from some of the responses to Q5 in Questionnaire 2 (the question asking if learners thought there were many things to pay attention to), which include the need to "sell [their] services" and to "get to know the other side's culture".

The above results from the questionnaires show that most sources of difficulty fall into the categories of task factors (e.g. the amount of detail provided, position, culture, etc.), learner factors (e.g. lack of proficiency) and implementation factors (e.g. the time allowed). An interesting finding here is that Task 4, which involved more task demands than Task 3, was not consistently perceived as more difficult, a point which is further explored below (in Section 5.2.3).

4.2 Sources of motivation

In the questionnaires, learners could indicate whether they found the task motivating or not, and could then provide reasons. Some of the learners, however, did not provide any reasons. The three most frequently cited reasons, both pre- and post-task, are given in **Table 4** with the number of learners offering them shown in brackets. All the items in the table are sources of motivation, except the one shown in italics, which was given as a reason why the learners were not motivated when working on the task.

Task	Pre-task motivation	Post-task motivation
Task 1 N=24	**Classes A and B** ▪ Practical content (4) ▪ Interesting (3) ▪ Having prior experience (2)	**Classes A and B** ▪ Interesting (2) ▪ Role – chair of meeting (2) ▪ *(Demotivating) Lack of interaction/ discussion (2)*
Task 2 N=25	**Classes A and B** ▪ Interesting (4) ▪ Position (3) ▪ More challenging than Task 1 (3)	**Classes A and B** ▪ Interesting (4) ▪ Position (3) ▪ Challenging (2)
Task 3 N=14	**Class A only** ▪ Real-life (3) ▪ Interesting (3) ▪ New experience (2)	**Class A only** ▪ Real-life (3) ▪ Challenging (3) ▪ Interesting (2)
Task 4 N=16	**Class A** ▪ Interesting (9) ▪ Good partners (1) ▪ Useful (1)	**Class A** ▪ Interesting (4) ▪ Good partners (3) ▪ Role A was fun (2)
Task 4 N=16	**Class B** ▪ Useful (1)	**Class B** ▪ Interesting (5)

Table 4. Reasons provided by learners for being or not being motivated

The most frequently cited pre-task source of motivation for Task 1 was its practical content. Both pre- and post-task, learners said that they were motivated because the task was "interesting", but they did not elaborate on what made it interesting. Two of the learners who performed the role of the chair in their group's meeting also found that this role was motivating. Two learners reported that they were not motivated because there was a lack of interaction or discussion during the task.

The most frequently cited sources of motivation for Task 2, both pre- and post-task, were the same. Four learners were motivated because the task was "interesting". Three learners considered the task motivating because of the conflicting positions involved (e.g. "people have different opinions and we have to debate", "we need to argue with others", "to keep convincing others", etc.), which shows the role of the "position" factor in influencing not only perceptions of task difficulty but also task motivation.

As regards Task 3, the source of motivation most often listed by learners pre- and post-task was related to its being "real-life", with learners commenting that the task provided "real-life practice" or was "applicable to real life". Other sources of motivation included the task's being "challenging" and "interesting", but no learner elaborated on possible reasons for this. Two learners were motivated because it was a new experience for them.

Task 4 had more task demands than Task 3 because of the additional cultural element. Both pre- and post-task, the most frequently cited source of motivation for learners in Class A was that the task was "interesting". Having good partners was also cited as a source of motivation. For Class B, only one learner provided a reason in the pre-task questionnaire for being motivated to work on Task 4, namely that it was "useful". After the task was completed, five learners considered the task motivating because it was "interesting".

The above results from the questionnaire responses indicate that the sources of motivation included task factors (e.g. the position factor, the real-life content, etc.), learner factors (e.g. having prior experience) and interlocutor factors (e.g. having good partners). For all the tasks, there were some learners who said they were motivated because they found them "interesting", "useful" or "challenging". These responses, however, raise the question: "Is the task interesting/useful/challenging because of some inherent task design features, or is it so because of some characteristics of the learners?" In other words, does the element which makes a task interesting, useful or challenging reside in the task itself or in the learner? Or could it be a result of the interaction between the task and the learner? This prompted Item 5 of the interview questions, which was designed to reveal the nature of the motivation captured by these somewhat ambiguous responses.

5 Findings from the interviews

5.1 Overall rankings

The interviewees were asked to compare the tasks and rank them. **Table 5** shows the rankings:

Perceptions	Ray	Vicky	Ada	William
Difficult	2, 4, 3, 1	2, 3, 4, 1	2, 4, 1	2, 4, 1
Motivating	4, 3, 2, 1	2, 4, 3, 1	2, 4, 1	2, 4, 1
Interesting	4, 3, 2, 1	3, 4, 2, 1	2, 4, 1	4, 2, 1
Useful	4, 3, 2, 1	2, 3 / 4*, 1	4, 1, 2	2, 4, 1

Table 5. Ranking of tasks by interviewees
(from the most difficult/motivating/interesting/useful task to the least)
* To Vicky, Tasks 3 and 4 were the same in terms of usefulness.

It can be seen from **Table 5** that all the interviewees perceived Task 2 to be the most difficult, while Task 1 was considered the easiest and the least motivating or interesting of all the tasks that they worked on. The following sub-sections explore the sources of difficulty and motivation in greater detail.

5.2 Task difficulty

Intuitively, task factors such as the content, task type and number of task demands would seem to have an influence on task difficulty. This section illustrates that the relationship between these three factors and learners' perceptions of task difficulty is not straightforward.

5.2.1 Task content

From the data, it can be seen that the interviewees related their perceptions of difficulty to the level of their familiarity with the task content. Task 1 was considered easy, mainly because the interviewees were "familiar" or "too familiar" with the content of the task. This familiarity stemmed from the learners' experience as local students, who, as secondary school candidates preparing for local English public examinations, often performed tasks with content resembling that of Task 1. As Ray and William noted in turn:

> [Task 1] is just like the [local public] oral exam … It's too easy. (Ray)
>
> I think Task 1 is even easier than the [oral section of a local English public examination]. (William)

While the interviewees had similar perceptions of Task 1, their perceptions of other tasks, which involved business content, were different. William considered the business content of these tasks difficult ("we're students, we don't have the [business] sense"). The tasks about the business activity of telesales (Tasks 3 and 4) were, however, not difficult for Ray, who had worked as a part-time employee in a telesales company; as he said:

> I found it not difficult because I've been working in telemarketing. That's why I know some basics … (Ray)

These differing perceptions of the difficulty show that, while William and Ray had done similar tasks in school as they prepared for public examinations, their life outside school had made a difference to their perceptions of task difficulty. Thus, the content of the task alone does not determine perceptions of difficulty; instead, it interacts with the learner's life history and previous experiences to shape perceptions.

5.2.2 Task type – goal orientation and position

As shown in **Table 5** above, Task 2, which is a decision-making task, was considered by all the interviewees to be the most difficult. The convergent goal orientation of the task (i.e. the need to agree on a particular proposal to cut costs) was a source of its difficulty, because the interviewees found it difficult to arrive at a "conclusion", "compromise" or "consensus". It seems that the learners considered it important to arrive at a conclusion or a consensus because they related it to the satisfactory completion of the task:

> I think that sometimes we may feel like we did not complete the task if we cannot come up with a conclusion. This may be one of the difficulties. (William)

What is worth noting is that Task 1, which was perceived as the easiest by all the interviewees, was also a convergent task (learners needed to agree on the details of the social event after brainstorming their ideas). However, no interviewees mentioned that it had been difficult to reach a consensus in Task 1, whereas they mentioned this with regard to Task 2. This suggests that the convergent goal orientation of Task 2 does not in itself fully explain the difference in its perceived difficulty. Bringing the "position" factor identified earlier (see Section 4.1) into the picture may account for the difference. In Task 2, arriving at a consensus was considered difficult due to the conflicting positions inherent in the task design through the four different roles, as shown in the following comment:

> We need to insist on our interest [in Task 2], and the interests are very contradicting to each other. (Ada)

Conversely, part of the reason why Task 1 was considered easy by all the interviewees was that they were not given different positions and did not have conflicting interests. As Ray and Vicky both said, the task was easy because they did not have to come into conflict with the others.

The differing perceptions of Tasks 1 and 2 suggest that goal orientation interacts with position to influence perceptions of difficulty, at least in the role-plays under investigation. Using the terminology of negotiation theory (see, for example, Goldman and Rojot (2003)), position can either be "integrative", where all parties have the same standpoint and are working towards the same goal, as in Task 1, or "distributive", where all parties have different standpoints and hence possibly mutually conflicting stances towards the issue in hand, as in Task 2. The interview data show that a convergent goal orientation, when coupled with a distributive position, makes a task difficult.

5.2.3 Task demands

Although from the perspective of task design, Task 4 involved more task demands than Task 3 with the additional element of cultural difference (see **Table 2**), neither interviewee from Class A thought that the additional task demand made Task 4 more difficult. Both Ray and Vicky, who had performed both tasks, thought that Task 4 was mainly about cultural differences:

> [Task 4] is mainly focus on the cultural difference, rather than how to convince. (Ray)
>
> We just had to show that we have a different culture than the others, it's easier [than Task 3] … There's an issue to argue here, but the main point is to show that our culture is different from the others'… We just keep pretending [to be from the assigned culture], not discussing about anything, not discussing the issue or the business things. (Vicky)

By contrast, Ada, who had not performed Task 3 but only Task 4, thought the task was about "maximizing [her side's] profit and benefit". The difference in perceptions was probably due to the difference in history between Class A and Class B. Ray and Vicky, who had performed Task 3 the previous day, perceived the primary purpose of Task 4 to be the experience of cultural differences and gave little weight to the business part of the meeting, which had been their focus when working on Task 3. This shows that, although Task 4 had one more task demand than Task 3 had, the additional demand did not necessarily make the task more difficult, as might have been supposed. In fact, the new task demand in Task 4 (role-playing to show cultural traits) overshadowed the old one (discussing business with the other side). This suggests that the learners had their own way of prioritizing the learning objectives according to their perceptions of the objective of the task, which was influenced by their experience during the course, for example, the tasks that they had already worked on.

5.3 Task motivation

The interview data show that the learners' level of motivation was influenced not only by the task features, but also by the interaction between the task and the learners' perceptions pertaining to the past, the present and the future.

5.3.1 Past-focused perceptions

Learners' past experiences were found to be a factor affecting their motivation when working on a task. As mentioned in 5.2.1, above, the interviewees considered Task 1 easy because the content was familiar to them. Vicky, for example, was not motivated to work on the task because she did not think she was learning anything "new". As she explained,

> [Task 1] is very similar to secondary school tasks. We did it many, many times. (Vicky)

But, while in Vicky's case previous learning experience made a task demotivating, as in the case of Task 1, for Ray previous experience helped to increase motivation. According to him, his experience of working as a part-time telesales agent made him feel motivated when working on Tasks 3 and 4:

> I found [Tasks 3 and 4] interesting maybe because I worked in those company, so the motivation is also high. (Ray)

The above examples show that the content of a task alone does not determine task motivation; rather, the learners' motivation to work on the task is determined by the interaction between the task content and the learners' life history, such as their past learning experience and work experience.

5.3.2 Present-focused perceptions

While the learners' past can exert some influence on motivation, their present-focused perceptions, i.e. the perceptions pertaining to the immediate situation of working on the task, also play an important role. This can be inferred from the learners' motives and goals, as shown in William's comment:

> We took the initiative to join the class and it already showed we care about what we can learn in the course and from the tasks, so we would work on the task to learn … I concerned about whether I and groupmates together can complete the task correctly. (William)

The fact that William cared about what he could learn shows that his motive for taking the course was to learn. Actuated by this motive, his goal when working on individual tasks was to "complete the task correctly", an attitude which was echoed by Vicky, who expressed her "desire to complete the task smoothly and successfully". Whether or not learners expect themselves to be able to achieve their goal of completing the task was found to influence their level of motivation, which is evident from Ada's definition of what a motivating task should be like:

> [A motivating task] is not easy, I need to spend effort to do it, but after my hard working, I can still do it, it's achievable … If it's very very very difficult, I think it can't motivate me to do it. But if it's difficult but not very very difficult, I think it can motivate me to do it. (Ada)

This shows that perceived difficulty can influence the motivation to perform a task and suggests that learners sometimes form expectations of how likely they are, given their abilities, to complete the task successfully.

The challenge brought by a task was also found to be a source of motivation. As shown earlier, Task 2, which involved convergent goal orientation and distributive position, was perceived by all the interviewees to be the most difficult, but the very same task features also made the process motivating for three of them:

> As I had a role to play, I really try to act as if I were really the worker. I really want to convince others and tell others what I really want to choose. (Vicky)
>
> You want to win the others, it will motivate you. (Ada)
>
> If you don't try your best, the others will become very strong in the discussion, you'll lose. (William)

The combined effect of goal orientation and position created a sense of competition in performing the task, as can be seen from the words "win" and "lose" in the above comments from Ada and William respectively. The competitive nature of the task and the learners' goal of winning made the task "challenging", and this, according to both interviewees, was what made it motivating.

5.3.3 Future-focused perceptions

Motivation to work on a task was also found to be related to the learner's motive for taking the course. As the background information in **Table 1** shows, all the interviewees were able to list the business communication skill(s) that they thought they would need in their future professional life. In the interviews, Ray, Vicky and William all stated that their motivation to work on the tasks was influenced by whether they were "useful" for the future, which is consistent with their ranking of the tasks shown in **Table 5**; all three ranked the most motivating task as also the most useful. It was also found from the interview data that the interviewees had different perceptions of what would be useful for their future career, and this future-focused perception had an effect on their level of motivation. The following comments show why Task 2 was considered by Vicky to be more useful than Tasks 3 and 4, and why Ada considered it less useful than Task 4:

> In a company with very limited cultural difference, I may still face the situation of cutting cost. (Vicky)
>
> [Task 4 is about] customer service, salespeople, I am more likely to deal with clients … [Task 2 involves] a member of new management, very few people will do this kind of job. It will take me a number of years before I can be a management person. (Ada)

These comments show that the motivation arising from the usefulness of the task is influenced by the interaction between the task content and the learners' perceptions. Relevant perceptions include the likelihood that they will face situations like those described in the task, and the urgency of the need to practice handling those situations. Interestingly, "usefulness" was defined by all the interviewees in terms of workplace needs and business relevance and not of its effect on improving their English skills. This is probably due to the nature of the course, which was a course in business communication rather than in general English proficiency, and which probably attracted learners whose motive was to learn business communication skills rather than simply practicing English. As William said, "Actually if we are just learning to talk in English, Task 1 may be a good task". This shows that he expected to learn more than English from the course.

6 Discussion of findings

The findings from both the questionnaires and the interviews show that learners' perceptions of task difficulty and their motivation to work on a task are not only influenced by the design features of a task, but also by learner factors. The present study gives support to sociocultural studies of tasks which highlight the pivotal role of learners' motives in task-based language learning, and at the same time also shows how task design features can interact with learner factors to influence learners' perceptions.

In terms of task difficulty, the present study shows that the factor that I called "position" interacted with the goal orientation factor in determining learners' perceptions. From the questionnaire data, it can be seen that position was a source of difficulty for Tasks 2, 3 and 4. From the interview data, we can see that the combination of convergent goal orientation and distributive position made Task 2 the most difficult of the four tasks for all the four interviewees. The finding that a convergent goal orientation with a distributive position was perceived as more difficult than a convergent task with an integrative position suggests that goal orientation alone may be too broad a feature to characterize tasks and that existing typologies of tasks, such as the one proposed by Pica, Kanagy and Falodun (1993), may need to be refined when used in research on business role-plays.

This study also shows that task content and the number of task demands did not have a consistent effect on the learners' perceptions of difficulty. The same task feature may have different effects on perceptions, depending on the learner's life history as well as his/her classroom learning history (e.g. what s/he has done in the course). As shown in this study, the learners' history, including their prior learning experiences and part-time work experience, affected their familiarity with the task content, and thus the level of task difficulty perceived. The classroom learning history also had a bearing on the way in which learners prioritized the demands of the current task; hence, given the same task, learners who had performed a similar task might give more attention to the new task demands and less to the old ones, which in turn influenced the perceived difficulty of the task, as well as the activity generated by the task. The familiarity of the content and the number of task demands, therefore, do not necessarily have a consistent one-to-one relationship with task difficulty.

As regards task motivation, two design features of the tasks, namely, the factors of goal orientation and position, were found to have an impact on motivation. The combination of convergent goal orientation and distributive position influenced the present-focused motivation of the task, making it challenging and thus motivating because of its competitive nature. Task content, however, did not have a consistent effect on motivation. The content of a task was found to interact with learners' history and motives, which respectively shaped their past-focused and future-focused perceptions. Past experiences influenced learners' perceptions of whether they were learning something new from the task, whereas what learners perceived as relevant content for their future career influenced their perceptions of the usefulness of the task. Learners' motivation to perform a task, therefore, relates not only to the circumstances arising in the discrete time-frame of the performance of the task, but also further back to the past and forward to the future.

The findings of the present study show that the same task can invoke different perceptions, which are shaped not only by the task but also by the learner's motives and history. This

phenomenon of "same task, different perceptions" means that one can hardly predict how difficult or motivating a task is without reference to the specific learner working on it.

7 Implications

In ESP research, issues such as task difficulty and task motivation have rarely been investigated, despite their pedagogical relevance. Although the present study is small in scale and exploratory in nature, it shows that, when investigating tasks in an ESP context, we can apply concepts from SLA research. The present study has several implications for research and pedagogy.

First, the study shows that sociocultural perspectives on SLA can be usefully applied to task-based research conducted in ESP contexts. ESP researchers and practitioners have acknowledged the central role of the learner, as evidenced by the emphasis on analyzing learning needs and subjective needs (Dudley-Evans & St John, 1998; Hutchinson & Waters, 1987). Activity theory, which highlights the role of motive (Leont'ev, 1978), is highly relevant to research conducted in ESP contexts, where learners tend to have more specific needs and wants than those who learn English for general purposes. Activity theory also captures the interaction between the different elements in an activity system (Engeström, 1987, 2001), and can therefore serve as a useful theoretical framework for task-based studies investigating the interaction between the task, the learner and other elements in an activity system.

Second, this study shows that the practice of specifying task features using task typologies can be applied to task-based research conducted in ESP contexts and to that conducted from a sociocultural perspective. In role-plays of business meetings and negotiations, differences of opinion and conflicts are often built in to the task through differences in the roles played by the learners to simulate real-life situations. Although these differences in role are not captured in existing task typologies, relevant dimensions, such as the position factor identified in this study, may be added in order to develop more refined typologies for the tasks used in business English teaching. Future sociocultural task-based research, whether on general English or ESP tasks, can also benefit from the use of task typologies. With an appropriate task typology, sociocultural researchers can pinpoint in a more precise way the different task features from which the different effects originate.

Finally, from a pedagogical perspective, while it has been proposed by researchers in the cognitive tradition that tasks should be sequenced on the basis of task factors alone (Robinson, 2001), this study illustrates the relevance of learner factors in determining learners' perceptions of difficulty and their level of motivation in a classroom context. While preliminary sequencing may be done at the stage of curriculum or materials development, it is suggested that the syllabus should be flexible enough to allow teachers to make adjustments in response to learner factors, as appropriate. The learner factors to consider should include learners' histories and the motives which they bring to their learning. Syllabus designers and teachers alike would be in a much better position to make decisions on and adjustments to their task-based syllabus if more research could be conducted to reveal what shapes the perceptions of learners and to suggest methods by which teachers may adapt tasks to make them sufficiently challenging and more motivating.

Much SLA research has investigated issues that are highly relevant to ESP researchers and practitioners. It is hoped that more ESP research, in particular that related to learning and the

learner, can be conducted by referring to insights from SLA research and that research done in ESP contexts can also inform and broaden the scope of SLA research. It is believed that cross-fertilization between traditionally separate fields in this way would be most beneficial to research and practice.

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9 Appendices

Appendix 1

Questionnaire 1 (Pre-task)

1. I think the level of difficulty of the task is:
   Extremely easy 1 2 3 4 5 Extremely difficult
2. I think the following things make the task difficult:
3. I think I *can / cannot* complete the task successfully because:
4. I am *motivated / not motivated* to work on the task because:
5. I *like / do not like* the task because:
6. Any other comments:

Questionnaire 1 (Post-task)

1. I think the level of difficulty of the task was:
   Extremely easy 1 2 3 4 5 Extremely difficult
2. I encountered the following difficulties while doing the task:
3. I think I *completed / did not complete* the task successfully because:
4. I was *motivated / not motivated* to work on the task because:
5. I *liked / did not like* the task because:
6. Any other comments:

Appendix 2

Questionnaire 2 (Pre-task)

1. The level of difficulty of the task is:

   Extremely easy 1 2 3 4 5 Extremely difficult

   Reasons:

2. I think the topic is relevant for business:

   Strongly disagree 1 2 3 4 5 Strongly agree

3. I am familiar with the situation practiced in the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

4. I am familiar with the topic/content of the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

5. I think there are many things to pay attention to when doing the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

   For example:

6. I think the task is useful:

   Strongly disagree 1 2 3 4 5 Strongly agree

   Reasons:

7. I am motivated to do the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

   Reasons:

8. I think I *can / cannot* complete the task successfully because:

9. Any other comments:

Questionnaire 2 (Post-task)

1. The level of difficulty of the task was:

   Extremely easy 1 2 3 4 5 Extremely difficult

   Reasons:

2. I think the topic was relevant for business:

   Strongly disagree 1 2 3 4 5 Strongly agree

3. I am familiar with the situation practiced in the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

4. I am familiar with the topic/content of the task:

   Strongly disagree 1 2 3 4 5 Strongly agree

5. I think there were many things to pay attention to when doing the task:

Strongly disagree 1 2 3 4 5 Strongly agree

For example:

6. I think the task is useful:

Strongly disagree 1 2 3 4 5 Strongly agree

Reasons:

7. I was motivated to do the task:

Strongly disagree 1 2 3 4 5 Strongly agree

Reasons:

8. I think I *completed / did not complete* the task successfully because:

9. Any other comments:

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i-Term/i-Model versus FunGramKB: two different approaches to ontological organization

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Abstract

There is a constant need for terminological models of information, precisely, in specialized contexts. One way of describing conceptual information is through knowledge representation resources e.g. knowledge bases and ontologies. The objective of this paper is to compare how these resources organise terminological information for users. In particular, we will compare the conceptual representations in i-Term, a terminology and knowledge management application with its ontology module i-Model, and in FunGramKB, a multipurpose knowledge base for natural language understanding. With this aim in mind, we will introduce and discuss the concept modelling principles governing both i-Term/i-Model and FunGramKB in a practical and comparative way.

1 Introduction

In the multicultural professional world in which we live, there is a clear need for explicit models of semantic information (terminologies) to facilitate information exchange (Faber et al., 2011). One way of approaching this need for specialized and structured information is through different types of knowledge representation resources e.g. knowledge bases and ontologies.

In general, these resources have been criticized for not being sufficiently flexible and having little or no connection with the general knowledge represented in upper level ontologies or in other domain-specific ontologies.

Furthermore, nowadays there is no single methodology for knowledge representation resources. The determination of an adequate methodology and principles should contribute to avoid some common difficulties in conceptual modelling such as insufficient expressive power and redundancy.

When describing meaning in computational lexicography, the cognitive meaning in a lexical unit can be described by means of semantic features or primitives (i.e. conceptual meaning), or by means of associations with other lexical units in the lexicon (i.e. relational meaning). Obviously, the latter does not provide a definition as such of the lexical unit, but it describes its usage through meaning relations with other lexical units. Although it is easier to establish associations among lexical units in the form of meaning relations rather than formally describing the conceptual content of the lexical units, the inference power of conceptual meaning is stronger. In this regard, it could be said that i-Term/i-Model adopts a relational approach to represent lexical meaning while FunGramKB relies on a cognitive approach, that is to say, it formally describes the cognitive content of lexical units (Periñan & Arcas, 2007).

Within this context, the goal of this paper is to describe the concept modelling governing both i-Term/i-Model and FunGramKB in a comparative way. In other words, we compare and describe how concepts can be represented conceptually in their respective ontological modules since the ontology is the key element where conceptual meaning is modelled.

This paper is organised as follows. In Section 2, we provide the most relevant aspects of both i-Term/i-Model and FunGramKB. In section 3, we mainly describe the types of concepts used for concept modelling in both systems and other aspects related to conceptual organization. In section 4, we explain the conceptual meaning representation highlighting the most representative characteristics of both systems. And finally, we provide some concluding remarks in section 5.

2 i-Term/i-Model and FunGramKB: An overview

As noted earlier, there is a need for different semantic information models in professional and working contexts. In this respect, we present a general overview of i-Term/i-Model and FunGramKB as two different types of knowledge representation resources.

In this context, i-Term/i-Model is a terminology and knowledge management application with its graphical concept modelling module i-Model for concept clarification, whereas FunGramKB is a multipurpose and multifunctional knowledge base for Natural Language Processing (NLP) systems as explained in section 2.2.

2.1 i-Term/i-Model

The Danish Centre for Terminology (DANTERM) has developed i-Term, a state-of-the-art terminology and knowledge management application (Madsen, 2005). i-Term stores, structures and searches for knowledge about concepts, and has been mainly developed for registering and maintaining company- and institution-specific terminology (Madsen et al., 2005). i-Term has a graphical concept modelling module, i-Model, which organises the concepts in i-Term and which allows the user to create a domain-specific ontology (i.e. concept system), comprising all kinds of relations between concepts, characteristics of concepts and subdivision criteria (Madsen, 2006).

The development of i-Term is based on experience gained from co-operation with Danish companies as well as on the results of the CAOS project, which was carried out at CBS (Computer-Aided Ontology Structuring), and whose aim was to develop a computer system designed to enable semiautomatic construction of concept systems, or ontologies, cf. (Madsen et al., 2005).

The research and development project CAOS has been developed on the basis of some terminological ontology principles likewise i-Term/i-Model. i-Term/i-Model has specific characteristics to terminological ontologies as outlined in the following lines. Terminological ontologies are used herein as a synonym of *concept system* which is normally used in terminology work. A terminological ontology is a domain-specific ontology, cf. Guarino (1998). In terminological ontologies, one refers to the nodes as concepts which are described by means of characteristics that denote properties of individual referents belonging to the extension of a concept. By terminological ontology we mean an ontology which is based on the analysis and specification of concept characteristics, and the use of subdivision criteria, which is focused on differences among concepts (Madsen, 2006; Madsen et al., 2008a; Madsen & Thomsen, 2009a).

2.2 FunGramKB

FunGramKB is a user-friendly online environment for the semiautomatic construction of a multi-purpose lexico conceptual knowledge base for natural language processing (NLP) systems and for natural language understanding. On the other hand, FunGramKB is both multifunctional as well as multilingual. In other words, FunGramKB can be reused in various NLP tasks (e.g. information retrieval and extraction, machine translation, dialogue-based systems etc.) and can be reused with several natural languages, in particular, English, Spanish, German, French and Italian (Periñan & Arcas, 2007a).

FunGramKB consists of three information levels: Lexical level, Grammatical level and Conceptual level. In turn, these levels are made up of several independent but interrelated modules, as explained below. In FunGramKB, the Ontology becomes the key module for the whole system (Periñán & Arcas, 2010a) and therefore we will focus on the Ontology:

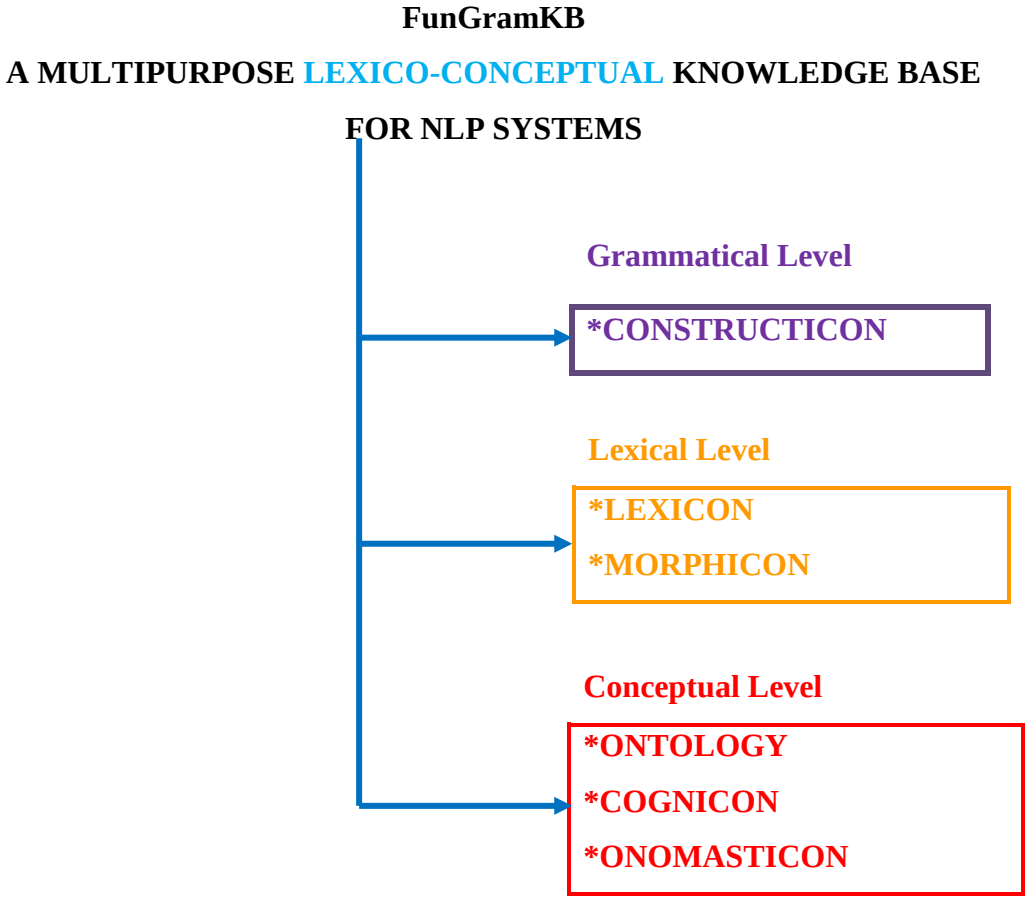

Figure 1. FungramKB Knowledge levels

The conceptual level is formed by three modules: the Ontology, the Cognicon and the Onomasticon. Firstly, the Ontology presents the hierarchical structure of all the concepts that a person has in mind when talking about everyday situations. The Ontology consists of a general-purpose module (i.e. Core Ontology) and several domain-specific terminological modules (Satellite Ontologies). Secondly, the Cognicon stores procedural knowledge by means of cognitive macrostructures, in other words, script-like schemata in which a sequence of stereo typical actions is organised on temporal continuity basis. And, finally, the Onomasticon stores information about instances of entities and events (e.g. people, cities, products etc.).

In FunGramKB, every lexical or grammatical module is language-dependent whereas every conceptual module is shared by all the language and therefore is not language-dependent (Periñán & Arcas, 2010a, 2010b):

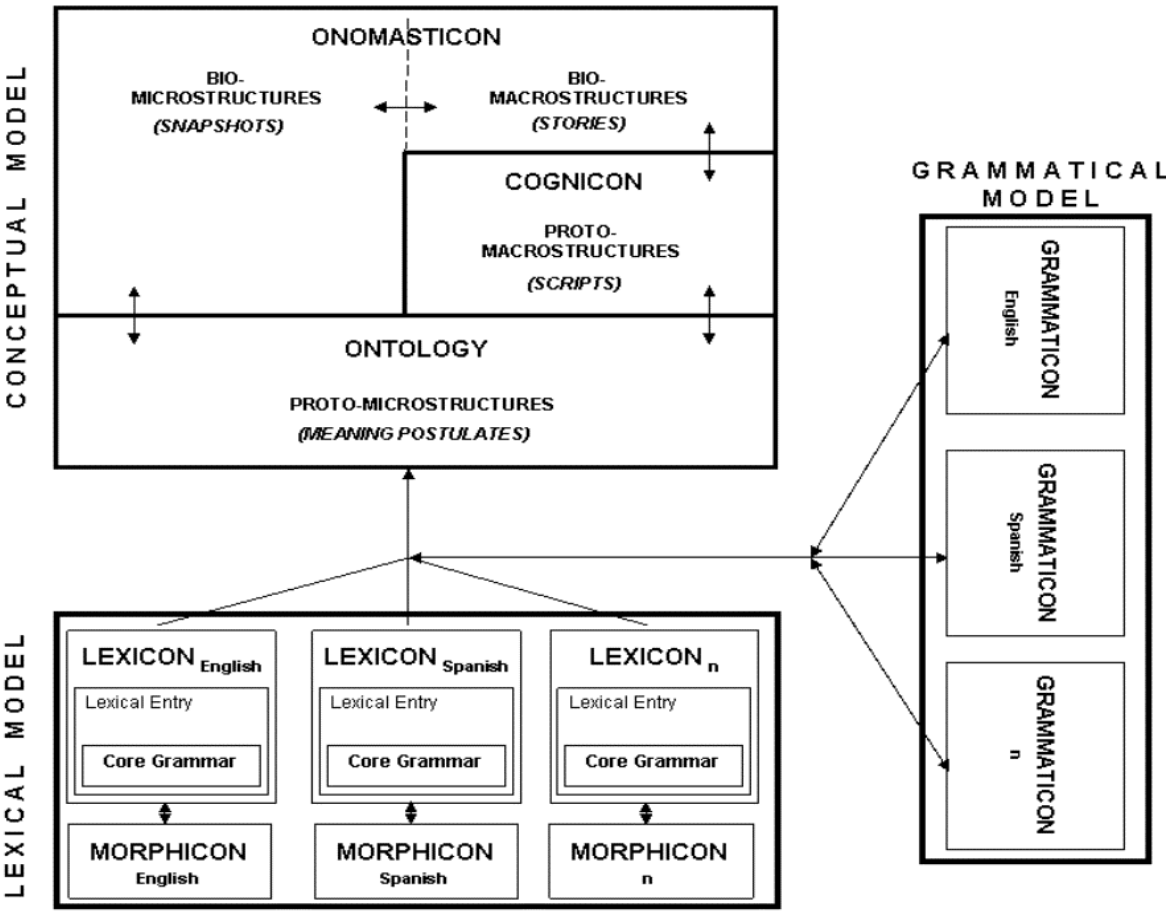

Figure 2. FungramKB architecture

All the knowledge included in the conceptual modules is represented through COREL (Conceptual Representation Language) (Periñán & Arcas, 2010), which is a key factor for successful reasoning. In this way, the information sharing could take place effectively among all the cognitive modules. This formal language is partially founded on Dik's model of semantic representation (1978, 1989, 1997) and was initially created for machine translation (Periñán & Arcas, 2007a).

3 Conceptual organization: concept types

In this section, the conceptual organization of both knowledge representation resources i-Term/i-Model and FunGramKB will be described. Basically in i-Term/i-Model concepts are structured according to a set of relations established among them, while in FunGramKB concepts show a more abstract approach as they are connected through semantic properties as explained in section 4.

3.1 i-Term/i-Model

In i-Term/i-Model information about concepts is culture (language) dependent and concepts are structured into *superordinate*, *subordinate* and *coordinate* concepts establishing a range of relations among them (i.e. generic, partitive, termporal and associative relations (Madsen, 2006). The terminologist inserts these type relations when building concept systems (Madsen et al., 2005). See the table 1 below for a graphical view of relations:

Concept relation	Equivalent symbol
type relation (generic)	symbol:
part-whole relation (partitive)	symbol:
temporal relation	symbol:
associative relation	symbol:

Table 1. Concept relations

In the following figure 3, relations organise and structure the conceptual hierarchy in the concept system. To illustrate how relations work, we provide the concept system of ”windmill”, where only generic, part-whole and associate relations operate:

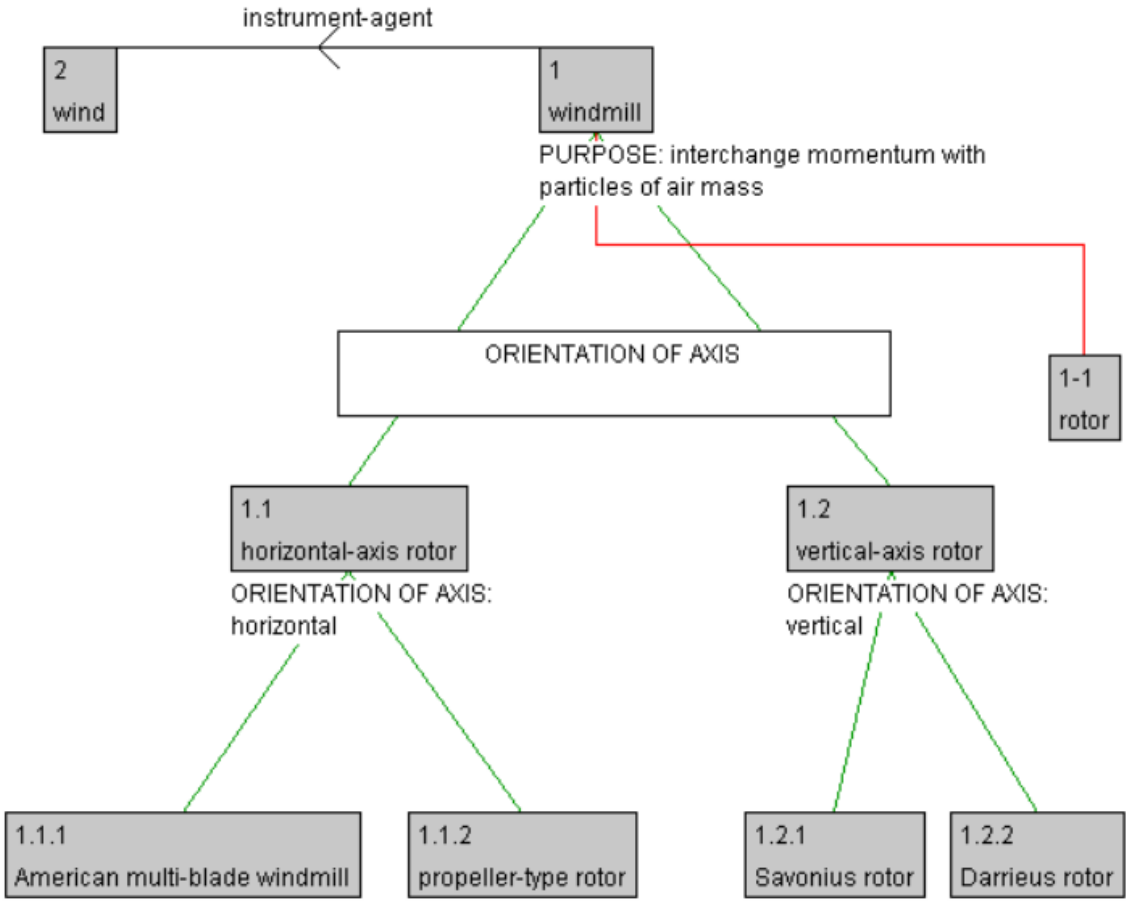

Figure 3. Type relations (Madsen et al., 2005)

In the following figure 4, we can also observe temporal relations in the concept system:

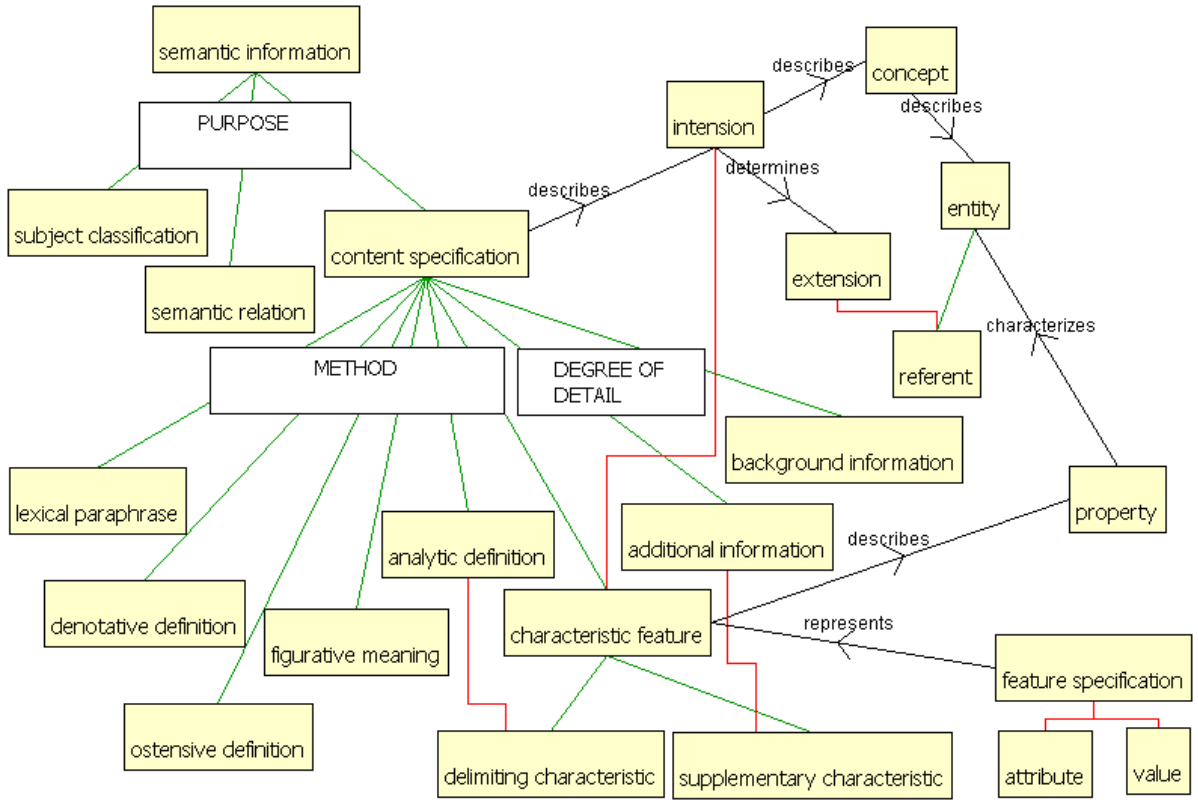

Figure 4. Concept system including temporal relations Madsen & Thomsen, 2008b)

Firstly, concepts located in one level higher up in the concept system (the one of which the current concept is a part or type) is that concept's *superordinate concept*. Secondly, *subordinate concepts* refer to a concept divided into parts or types, or a smaller part of an object, or a narrower range of objects, for example, 'wheel' has the subordinate concepts 'rim'and 'hub'. (Madsen et al., 2007). And, finally, those concepts which have the same superordinate concept and which therefore appear on the same level in the concept system are denominated *coordinate concepts*.

In the following figure (5) we can see the different types of concepts and the relations established among them which build the concept system of "molecular structure", where the different conceptual levels are also indicated through a notation system. For example, "molecular structure" is the first superordinate concept in the system indicated by number "1", followed by subordinate concepts indicated through a subdivision of the notation (e.g. the subordinates concepts of "molecular structure": "constitution" noted as 1-1 or "conformation" noted as 1-2).Coordinate concepts are placed at the same level in the conceptual system and are numbered in sequence (e.g. "N-terminal residue" (1-1-2-1.1) and "C-terminal residue" (1-1-2-1.2) and fall under the same dimension "location" created in the conceptual system:

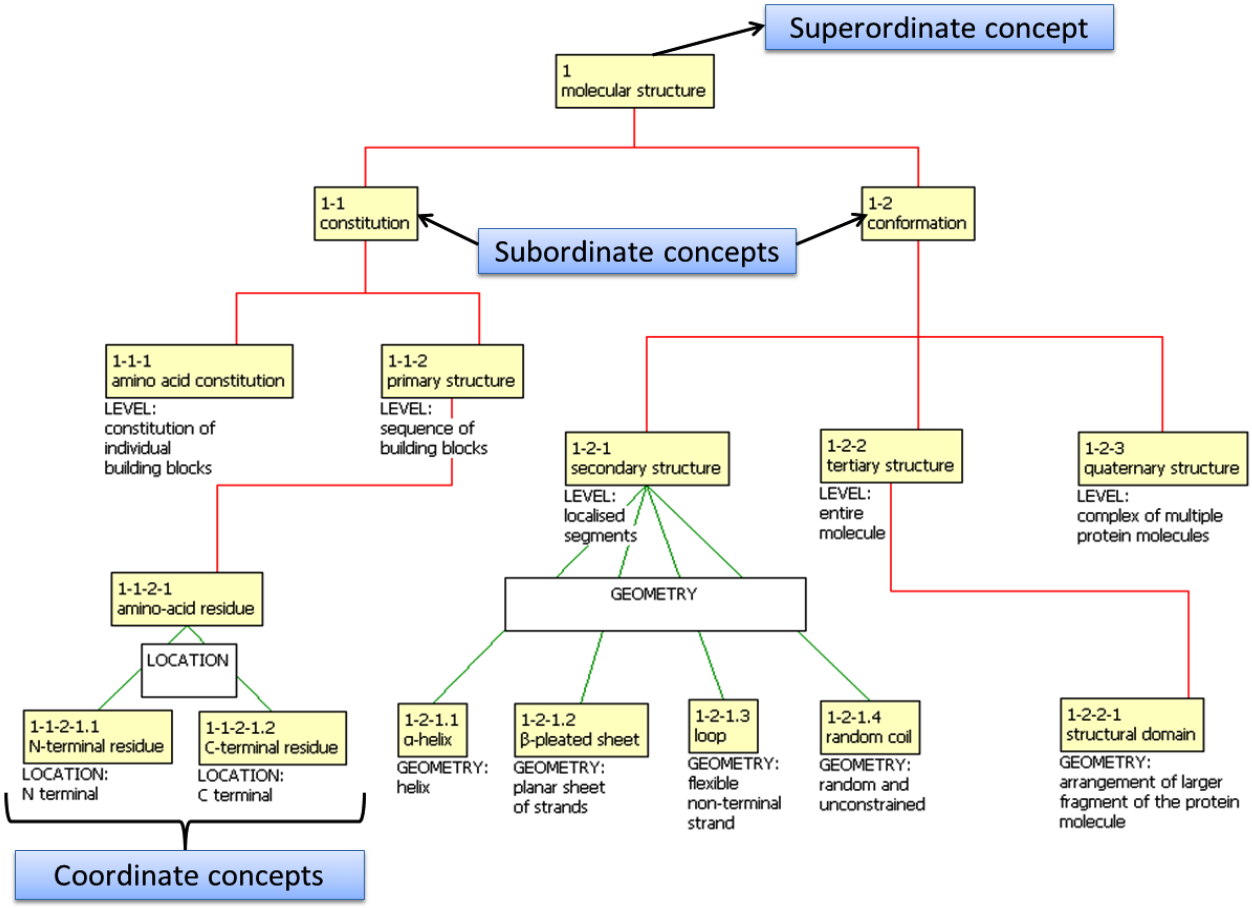

Figure 5. Concept types in i-Term/i-Model

Next, we present the types of concepts existing in the Ontology of FunGramKB and how they are arranged through a subsumption relation as explained in the following section.

3.2 FunGramKB

As noted earlier, in FunGramKB the Ontology consists of a general-purpose module (i.e. Core Ontology) and several domain-specific terminological modules (Satellite Ontologies). In this

article we will focus on the Core Ontology as this is the one which includes and reflects the speaker´s knowledge of the world (i.e. human beings' cognitive system):

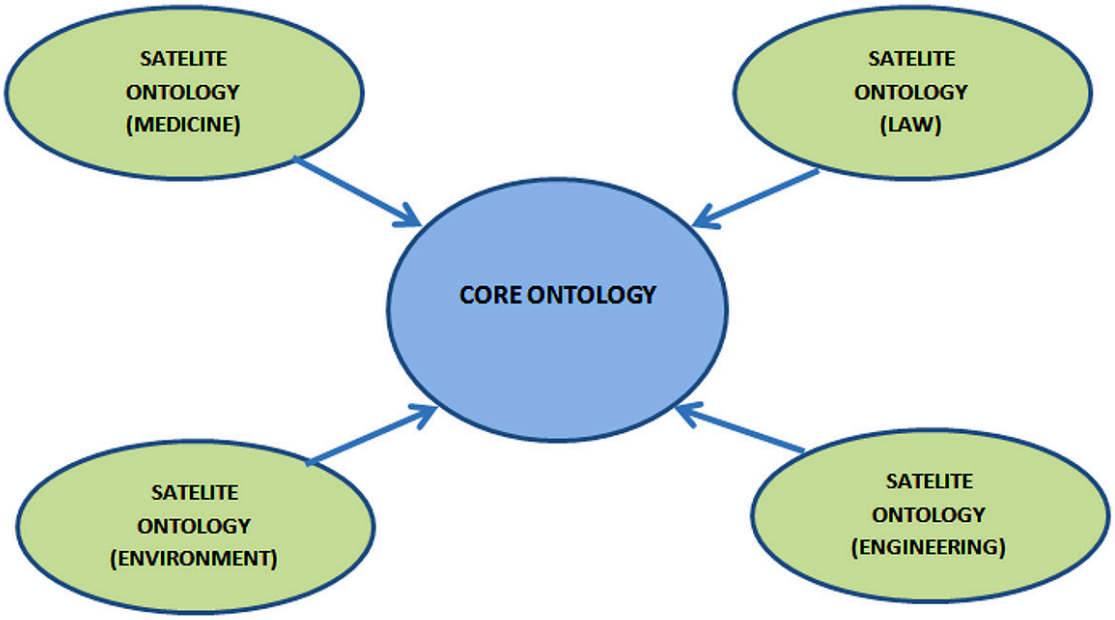

Figure 6. Core Ontology and Satellite Ontologies

FunGramKB Core Ontology distinguishes three different conceptual levels*: metaconcepts*, *basic conc*epts and *terminal concepts* (Periñán & Arcas, 2004; Periñán & Arcas, 2007a; Periñán & Arcas, 2010b). Unlike i-Term /i-Model, concepts in FunGramKB provide an abstract view of the world with different degrees of abstraction ranging from high to low:

ONTOLOGY LAYERS

METACONCEPTS
BASIC CONCEPTS
TERMINAL CONCEPTS

Figure 7. Conceptual hierarchy in FunGramKB

We go on to describe the main characteristics of the concepts presented above. In the first place, M*etaconcepts*, preceded by symbol # (e.g. #COMMUNICATION, #PHYSICAL, etc.), constitute the upper level in the taxonomy. The analysis of the main upper-level in the main linguistic ontologies - DOLCE (Gangemi et al., 2002), Generalized Upper Model (Bateman, Henschel and Rinaldi, 1995), Mikrokosmos (Mahesh and Nirenburg, 1995), SIMPLE (Lenci et al., 2000), SUMO (Niles and Pease, 2001) - led to a metaconceptual model whose design contributes to the integration and exchange of information with other ontologies. Since subsumption is the only taxonomic relation permitted, the FunGramKB Ontology is actually divided into three subontologies. Therefore, each subontology arranges lexical units of a different grammatical category: #ENTITY, #EVENT, and #QUALITY account for nouns, verbs and adjectives respectively (e.g. +HUMAM_00, +SAY_00 and +HAPPY_00) (Jiménez-Briones and Luzondo, 20011). The result amounts to forty-two metaconcepts distributed into the three subontologies (i.e. #ENTITY, #EVENT, and #QUALITY).

Secondly, *Basic concepts*, preceded by + (e.g. +BIRD_00, +HUNGRY_00 and +TRANSLATE_00), are used as defining units which allow the construction of meaning postulates (henceforth MP) for basic concepts and terminals as well as taking part as selection preferences in thematic frames (henceforth TF). MPs and TFs provide the semantic properties of the concepts and will be explained in detail in the following paragraphs. The starting point for the identification of basic concepts was the defining vocabulary in *Longman Dictionary of Contemporary English* (Procter, 1978) and as a result of a deep revision, the inventory employed in FunGramKB amounts to 1,300 basic concepts.

Finally, *Terminals*, preceded by $ (e.g. $METEORITE_00, $SKYSCRAPER_00, $VARNISH_00), are those concepts that lack definitory potential in the construction of meaning postulates. The borderline between basic concepts and terminals is just based on their definitory potential to take part in meaning postulates. In this sense, FunGramKB uses an “integrated top-down and bottom-up”, where conceptual promotion and demotion can occur between the basic and terminal levels.

Therefore, some terminal concepts can be promoted to basic concepts when the inclusion of a new language demands a different approach to the world model. On the contrary, basic concepts can be depromoted to terminal concepts whenever they cannot be used to define other concepts. In any case, the metaconceptual level always remains stable. In other words, the FunGramKB Ontology is grounded on a spiral model, where conceptual promotion and depromotion can occur between basic and terminal concepts as illustrated in Figure 8:

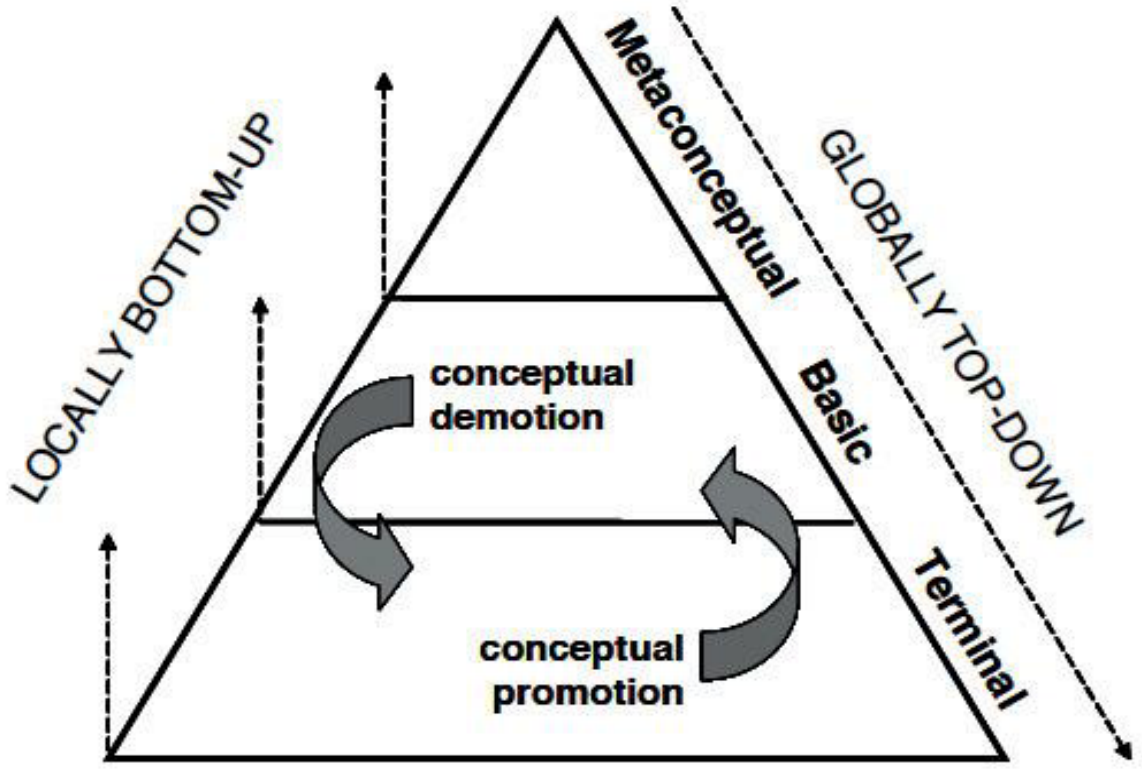

Figure 8. FunGramKB Ontology design

The design of the FunGramKB Ontology responds to the need of a core level of knowledge (i.e. basic concepts) which plays a pivotal role between those universal categories that can favour ontology interoperability (i.e. metaconcepts) and those particular concepts which can provide immediate applicability (i.e. terminals).

4 Conceptual Meaning Representation

In i-Term/i-Model concept representation is built on concept relations and their characteristics, while FunGramKB provides a cognitive representation of the meanings of a lexical unit by means of meaning postuales (MPs) and thematic frames (TFs) understood as conceptual properties.

In this study we will focus on the comparison of concepts integrated within the Ontology of FunGramKB and i-Term/i-Model respectively. In particular, we will compare the concepts “printer” and“$TOASTER_00” from i-Term/i-Model and FunGramKB, on account of their definitions and their representativeness. On the one hand, both concepts can be defined in terms of belonging or being in the category of “machines” and, on the other hand, both

concepts enable us to illustrate the most relevant characteristics in meaning representation (i.e. relational and conceptual meaning representations in i-Term/i-Model and FunGramKB respectively).

4.1 i-Term/i-Model Conceptual Meaning Representation: *Characteristics*

Although conceptual representation and definitions are closely related processes in i-Term/i-Model, we firstly show how conceptual representation is carried out and then we explain how definitions are elaborated and fit into i-Term/i-Model conceptual representation.

In i-Term/i-Model we understand the term ontology as a "concept model", i.e. a model that describes knowledge about concepts (information about concepts) as opposed to ontologies understood as "conceptual data model" that represents an abstract view of the real world (Madsen & Thomsen, 2008a: 12). In this sense, ontology understood as a "concept model" provides information about concepts in the form of *feature specifications* and concept relations as we will see in subsequent paragraphs. *Feature specifications* are the formal modelling of the terminologist's *characteristics* (Madsen et al., 2005).

In i-Term/i-Model the concept *characteristics* is the starting point for concept representation, since the analysis of the characteristics of concepts is the basis of the elaboration of concept systems and definitions, the evaluation of equivalence between concepts in different languages as well as the selection of the most appropriate terms (Madsen, 1998a).

In i-Term/i-Model *characteristics* correspond to a *feature-value pair*, this means that a characteristic of a concept consists of *a relation from this concept and another concept, the associated concept*. Then, the links and relations to concepts are encoded as features in the concept system, this indicates that relations among concepts should play a role in the definition of *characteristics*, or in other words, *characteristics* must be understood as a relation from the concept being defined plus the concept thus related to the one being defined. These *feature specifications* are appropriate according to Thomsen (1998b) because the relation between the concept being defined and the associated one is important for definitions. Therefore, identification of the differentiating characteristics is very important when defining concepts in concept systems (Madsen et al., 2007).

In i-Term/i-Model the first step to define terms is to formalize the relations between the concepts and to introduce characteristics delimiting related concepts (feature specifications, consisting of attribute-value pairs). On the basis of these *feature specifications*, subdivision criteria are introduced, which group concepts and thereby give a good overview.

As previously mentioned, we provide the example of printer in which the *genus proximum* is "printer", the subdivision criterion or attribute is "character transfer", one of the features are "character transfer, noise and copy" and, finally, their corresponding attribute values are "non-impact, quiet, simple". The superordinate concept and the attribute of the feature specification must be the same in the definitions of subordinate concepts falling under one subdivision criterion, e.g. noise and copy (Damhus et al., 2009):

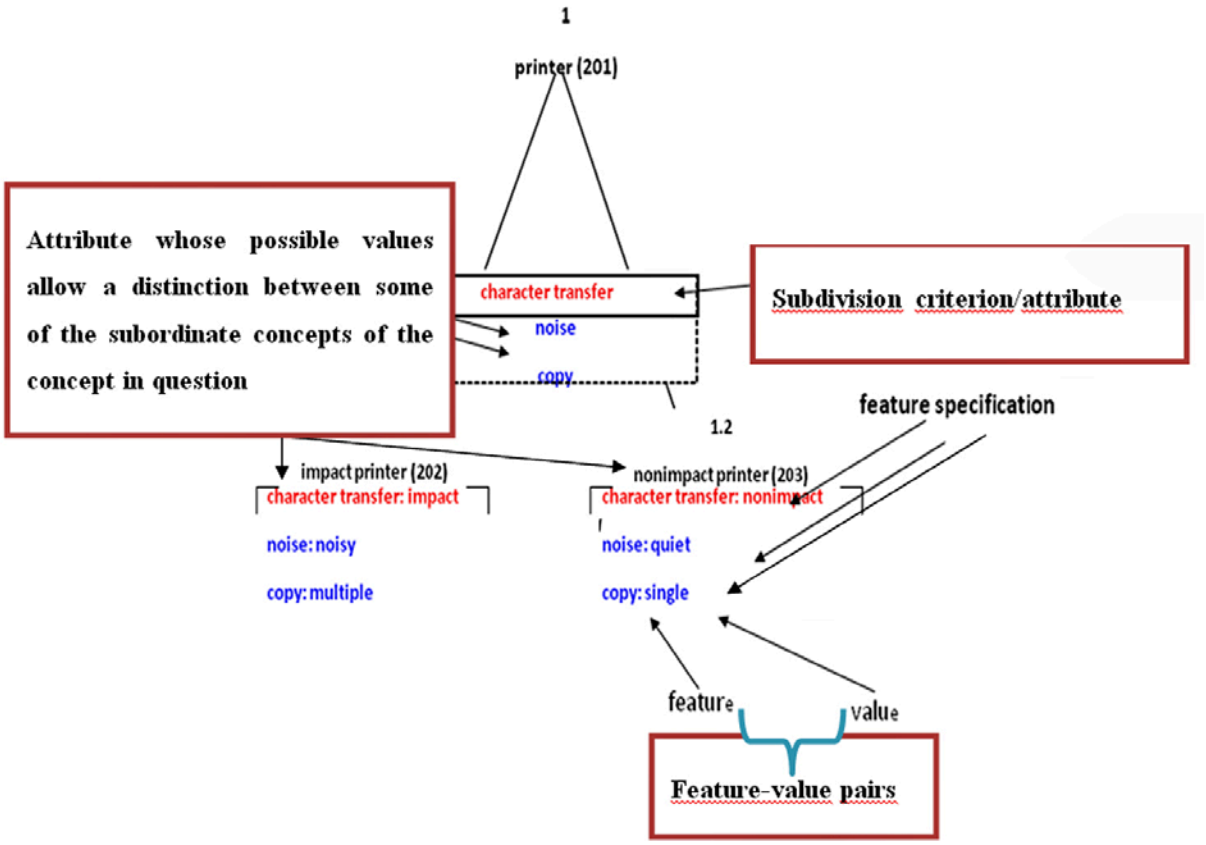

Figure 9. Subdivision criteria and feature-value pairs in the concept system of printer

The notions of feature-value pairs or characteristics and subdivision criteria in i-Term/i-Model, as already mentioned, are built on some of the principles developed in the CAOS prototype. Here we only mention some of the principles that build the basis for i-Term/i-Model and which can be applied to both domain-specific ontologies and general ontologies (Madsen et al. 2005). The principle of *Uniqueness of Dimension* (Madsen et al., 2008a) states that a given dimension may occur on only one concept in an ontology. This principle helps to create coherence and simplicity in the ontological structure since concepts characterised by primary feature specifications with the same dimension must appear as coordinate concepts on the same level having in common a superordinate concept. According to *uniqueness of feature specifications*, a feature specification may occur only once in a terminological ontology as primary and inherited feature specifications are inherited from superordinate concepts. On account of this principle, characteristics will always distinguish concepts and common characteristics should be located on a common superordinate concept (Madsen et al., 2008a). Finally, the principle of *grouping by subdividing dimensions* establishes that a concept (with only one mother concept) may contain, at the most, one delimiting feature specification; for example, a concept of level 2 or below must contain at least one delimiting feature specification:

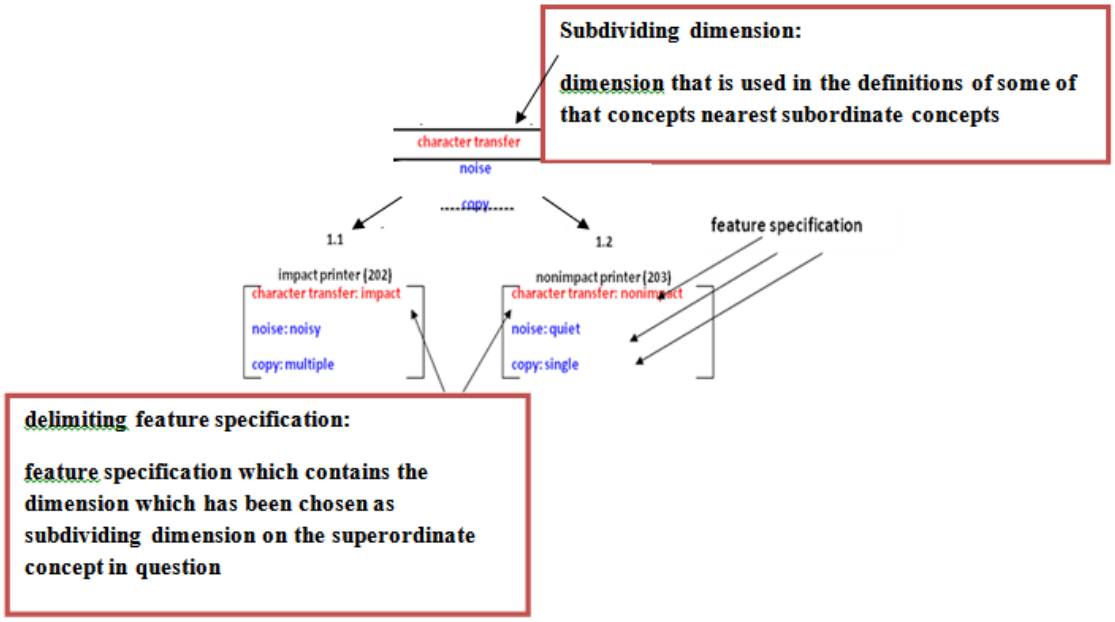

Figure 10. *Subdividing dimensions* and *delimiting feature specifications*

Next we will move on to show how definitions are elaborated in i-Term/i-Model. In i-Term/i-Model concept representation conveys an iterative process which implies: analyzing the concepts as well as placing them in draft concept systems in the form of hierarchies or networks on the basis of their characteristics, then drafting definitions, and, finally, refining concept systems as well as definitions. In this way, they arrive at consistent definitions referring to the superordinate concept (i.e. *genus proximum* or nearest kind) and followed by the delimiting characteristics.

In order to conclude this section, we would like to explain some aspects related to the nature of definitions in i-Term/i-Model. All analytic definitions (intensional, extensional and partitive) are related to concept systems, however, the intensional definition, which analyses the concept's characteristic features, is by far the most widely used in i-Term/i-Model[i] (Madsen et al., 2007). This type of definition implies, on the one hand, that a concept 'consists of' a unique combination of characteristics, and, on the other, that by the identification of these characteristics concepts can be explained and defined. On account of this definition, the superordinate concept and delimiting characteristics from their own concept can be read off. For example, *impact printer* is defined as: *A type of printer, which makes noise and can produce multiple copies* (Madsen et al., 2007).

Finally, in i-Term/i-Model concept representation implies analyzing the concepts on account of their characteristics of relational nature. On the contrary, in FungramKB concept representation is provided by two semantic properties, i.e. thematic frames (TFs) and meaning postulates (MPs) as explained in the following section.

[i] It is recommended to write intensional definitions in i-Term, however, the system technically allows the user to use any kind of method for defining concepts. i-Term does not provide any definition validation tools.

4.2 FunGramKB's Conceptual Meaning Representation: thematic frames and meaning postulates

In FunGramKB Ontology, concepts are not stored as atomic symbols but are provided with an internal structure consisting of semantic properties in the form of TFs and MPs and (Periñán & Arcas, 2007a).

On the one hand, a TF is a cognitive construct which specifies the number and type of participants involved in the cognitive situation portrayed by the event (Periñán & Arcas, 2007a). These participants are expressed by the variables (x1), (x2), etc. and their corresponding thematic roles (e. g. Agent, Theme, Referent, Goal etc.) in COREL, which is the metalanguage used in all cognitive modules. It is important to point out that in FunGramKB, unlike other ontologies, every event and quality is assigned one TF whereas this is not the case for entities (i.e. they are not assigned a TF). In the case of entities, the number and type of participants are determined by the events that are included as part of the definition of the entity as explained in the paragraphs below.

On the other hand, a MP is a set of one or more logically connected predications (e_1, e_2, ….e_n) that are cognitive constructs implying the generic features of the concept (Periñán & Arcas, 2004). FunGramKB employs concepts and not words for the formal description of meaning postulates, therefore a meaning postulate can be defined as a language-independent semantic knowledge representation (Periñán & Arcas, 2007b) and this results in a representation of meaning with great expressive power employing COREL notation. A MP is basically formed by: predications which represent features "e1, e2, e3 ..." and required arguments "x" and satellites "f" (e.g. Manner, Purpose, Location, Reason, Condition, etc.). In addition, MPs organise concepts and this implies that: i) all subordinate concepts share their superordinate MP, and ii) that the conceptual differences among subordinate concepts are encoded in the MP by means of distinctive features or *differentiae*.

To illustrate the above mentioned information, we propose the case of concept terminal $TOASTER_00. Before providing the MP and TF of this concept, we would like to point out that all the concepts in the Ontology have a cognitive dimension and are linked to one another by inheritance relationship, in such a way that each subordinate concept inherits the characteristics of its superordinate concept.

As far as cognitive dimension is concerned, the terminal concept $TOASTER_00 belongs to the metacognitive dimensions: #ENTITY > #PHYSICAL > #SELF_CONECTED_OBJECT > +ARTIFICIAL_OBJECT_00 > +SUBSTANCE_00> +SOLID_00> +MACHINE_00> +$TOASTER_00.

On the other hand, regarding inheritance relationship, $TOASTER_00 inherits the characteristics of its superordinate +MACHINE_00, like the rest of the subordinate concepts of the concept +MACHINE_00 (i.e. $REMOTE_00, $VACUUM_00, $CALCULATOR_00, $CAMARA_00, $COMPUTER_00 and $MOTOR_00):

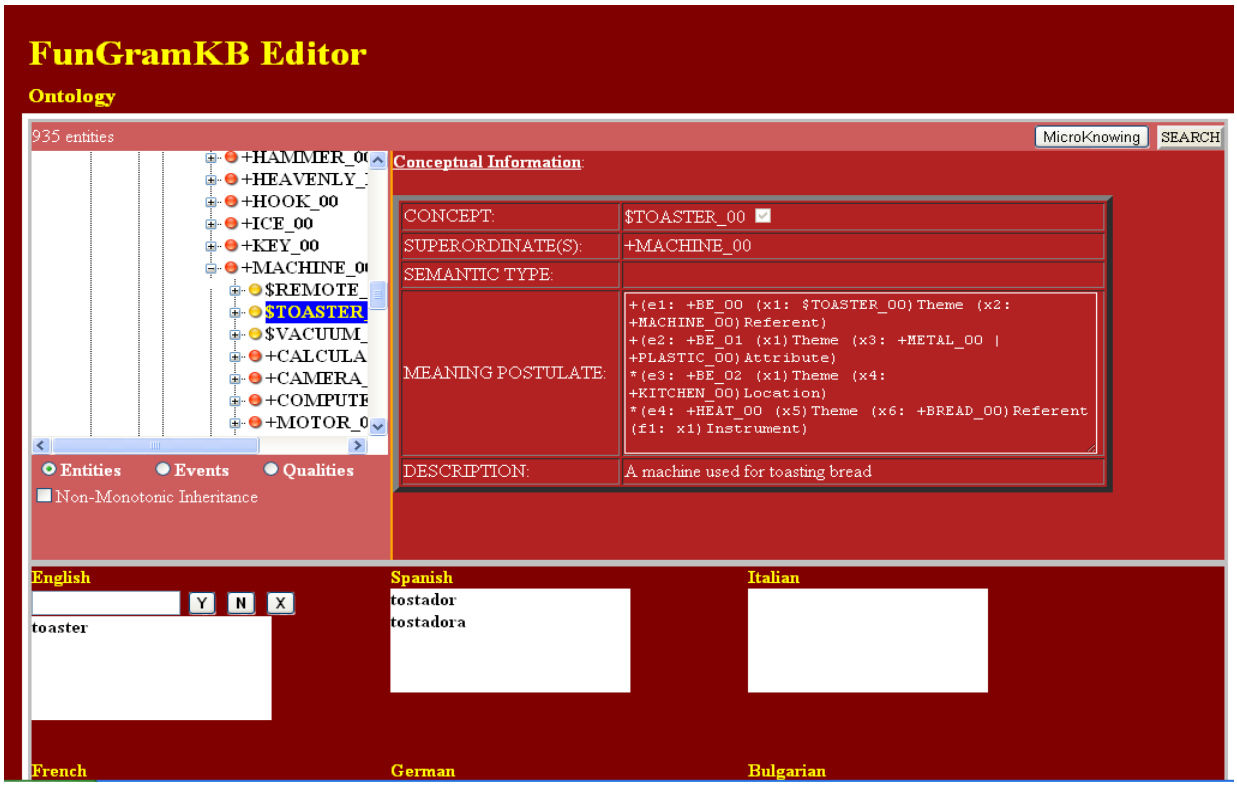

Figure 11. Inheritance relationships among concepts

Regarding the MPs and TFs, these are formalized using COREL notation as follows:

COREL	Natural Language
+(e1: +BE_00 (x1: $TOASTER_00)Theme (x2: +MACHINE_00) Referent)	e1: A Toaster is a machine.
+(e2: +BE_01 (x1)Theme (x3: +METAL_00 | +PLASTIC_00) Attribute)	e2: A typical toaster is of metal or plastic.
*(e3: +BE_02 (x1)Theme (x4:+KITCHEN_00)Location)	e3: A typical toaster is in the kitchen.
*(e4: +TOAST_00 (x5: +HUMAN_00) Theme (x6: +BREAD_00)Referent (f1: x1)Instrument)	e4: Someone toasts bread with a toaster.

Table 2. MP and TF of $TOASTER_00

As seen in Table 2, $TOASTER_00 contains the first predication of the superordinate concept +MACHINE_00. This predication specifies that "$TOASTER_00 is or belongs to +MACHINE_00", which is represented in COREL as follows: +(e1: +BE_00 (x1: $TOASTER_00) Theme (x2: +MACHINE_00) Referent). Furthermore, the concept $TOASTER_00 has some distinctive features included in the rest of predications and expressed in COREL: "is of metal or plastic", "is in the kitchen" and "Someone with a toaster toasts bread" (predications e2, e3 and e4 respectively).

In addition, a MP also includes the information stated in a TF by the co-indexation of the participants. As noted earlier, entities are not assigned a TF but the number and type of participants are determined by the events included in their MP. For example, in the first

predication (e1) of $TOASTER_00, the presence of +BE_00 provides the thematic roles that must be interpreted according to the metacognitive dimension of #IDENTIFICATION:

(1) TF = (x1) Theme [x2] Referent [x3] Attribute

The thematic frame of +BE_00 depicts a situation in which three participants are typically involved: *Theme* refers to an entity that is identified by means of another entity, *Referent* makes reference to an entity that serves to define the identity of another entity and, finally, *Attribute* is the quality ascribed to an entity. The participants of the predication are represented by an indexed label *x* and the parentheses indicate that a particular participant is optional. For example, in the case of $TOASTER_00 the participant *Attribute* is not necessary in the construction of its MP. Therefore, a Calculator (x1=Theme) is a machine (X2 0 Referent).

In relation to terminal concepts, there is always a narrowing on the MPs of the basic concept. In this sense, the terminal concept $TOASTER_00 is a further specification of the basic concept +MACHINE_00. In the following example we can see the MP of +MACHINE_00:

(2) MP = +(e1:+BE_00(x1:+MACHINE_00)Theme(x2:+ARTIFICIAL_OBJECT_00 & +CORPUSCULAR_00 & +SOLID_00)Referent)
('a machine (x1 = Theme) is typically an artificial object, corpuscular and solid' (x2: Referent))

If compared with the MP of +MACHINE_00, the terminal concept $TOASTER_00 comes as a result of further specifying this basic concept: firstly, by specifying other attributes (x3: +METAL_00 | +PLASTIC_00), by adding the parameter location (x4: +KITCHEN_00) and, finally, by including the parameter Instrument (f1: x1).

In conclusion, when representing one of the meanings of a lexical unit, we are really representing the meaning of a concept. That is to say, handling lexical meaning as a cognitive representation which reflects the speaker´s shared knowledge about the referent linked to a given linguistic expression. This is why MPs are processed as a conceptual property in FunGramKB (Periñan & Arcas, 2004). Moreover, lexical units are associated with much more semantic information which becomes apparent in the meaning postulate of the concept to which that lexical units are linked. All in all, lexical units are always linked to one or more concepts in the ontology, and the same concept, in turn, is lexicalized by one or more words in the several FunGramKB lexica (Jiménez-Briones & Luzondo, 2011).

Based on the previous observations, we may argue that FungramKB is a knowledge base where MPs and TFs provide a rich conceptual description to which lexical units are thus associated.

5 Conclusions

In this paper we have proved that i-Term/i-Model and FunGramKB adopt a different approach to ontological organization and in particular, we have shown how both systems structure conceptual representation in a comparative way. In this scenario, i-Term/i-Model adopts a relational approach (i.e. associations among lexical units), whereas FunGramKB relies on a cognitive approach (i.e. description of semantic features or primitives).

In brief, in i-Term/i-Model concept representation is based on relations among related concepts and their characteristics, which not only differentiate related concepts but also group them by providing a general view of the whole group of concepts. Unlike i-Term/i-Model, FunGramKB provides a cognitive representation of lexical units by means of MPs and TFs understood as conceptual properties and the related concepts are not grouped together but concepts are arranged according to the taxonomic relation of subsumption (i.e. #ENTITY, #EVENT, and #QUALITY which account for nouns, verbs and adjectives respectively).

In addition, concept representation in i-Term/i-Model must be interpreted as an iterative process which involves, firstly, a draft and, then, a final version of the concept system and their definitions. In FunGramKB, there is a process of conceptual promotion and demotion whereby certain concepts (i.e. basic and terminal concepts) can be promoted and depromoted on account of their definitory potential.

Regarding definitions, both knowledge representation resources include the *genus* plus the specific or delimiting characteristics in i-Term/i-Model and FunGramKB respectively; through this combination the consistency of definitions is guaranteed. In both systems their definitions are of an analytical nature, are linked to the concept system and have a concise formulation. In this regard, it is important to note that unlike i-Term/i-Model, FunGramKB employs concepts and not words for the formal description of meaning postulates through the use of the COREL language.

Finally, we believe that the comparison of different ontological approaches is useful so that the different systems for ontological organization can reciprocally benefit from their advantages and disadvantages in order to improve their ontological organization.

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Lay readers in the Q&A column in a popular science magazine

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Abstract

Although studies on science popularization in recent decades have emphasized its difference from other science writings in its expert-lay configuration, and claim that the communication is not only a one-way simplification of knowledge but a two-way interaction, studies on this genre focus almost exclusively on the discourse of the experts. This paper bridges the gap by investigating how the lay public interact with expert scientists in order to explore how the public perceives their role and the scientists' role in science popularization. The data is drawn from the Q&A column in an influential science magazine in Taiwan, and linguistic strategies used in making requests for answers are analysed. Moves in questions over three decades are analysed, and the findings reveal that the changing attitudes towards science and scientist have had an impact on how the public interact with the experts and how the conventions of the Q&A column are understood and practiced by the genre users.

1 Introduction

This paper investigates how readers of popular science magazines interact with science experts in the Q&A column of the magazines. In the study of communication between scientists and lay people, the focus has always been on texts (oral or written) produced by scientists, especially in contrast with how they usually communicate with their peers, i.e. in academic science. The findings from previous studies suggest that in popular science, experts focus more on constructing solidarity with readers rather than preserving the negative faces of their audience (Myers, 1989; Parkinson & Adendorff, 2004), foregrounding people rather than events (Myers, 1994), and using more reader-friendly strategies such as second person pronouns, cohesive links, hedging, questions, etc. (Crismore & Farnsworth, 1990; Varttala, 1999; Hyland, 2005). Linguistic and communication studies on popular science have demonstrated that the genre is not simply a process of simplification of knowledge – for example, avoiding jargon, excluding complicated reasoning processes, as most people would have thought; rather, the genre has its own pattern of communication and genre schemas (Whitley, 1985; Nwogu, 1991; Myers, 2003). As argued by Myers (2003, p. 267), "popularization is a routinized social activity that has led to the creation of a number of fairly stable genres."

While interaction between experts and lay public is often discussed in the study of popular science, the studies on readers' participation in science communication mostly investigate how they respond to experts' textual production, such as coverage in newspaper or science

policies, through survey, questionnaires or focus groups (e.g. Lowe *et al*., 2006; Falchetti, Caravita & Speraduti, 2007; Lorenzoni & Hulme, 2009). However, there has not been any direct investigation on the texts produced by the lay public in their communication with the expert. This may be due to the difficulties in data collection. Voices of the readers of science books, magazines, or other publications of popular science are not often heard, let alone recorded. Identifying this gap, this study has selected the Q&A columns in science magazines as data, because they provide the most direct platform for interaction between scientists and readers, and are rich sources for the analysis of readers' voices. A corpus of readers' letters sent to the Q&A column in a popular science magazine in Taiwan, *Science Monthly*, over a period of three decades was compiled for the purpose of this study. The research question of this paper is: what linguistic strategies do lay readers in the Q&A column in this popular science magazine use to interact with science experts, and how do their choices of linguistic strategies reflect their perception of their roles and the roles of scientists? The analysis will be based on the model of move analysis proposed in genre studies (Swales 1990; Bhatia, 1993, 2004) and the act of making requests in pragmatic studies (Blum-Kulka, House, & Kasper, 1989). To situate the present study in its social context, the following section will consider the social changes in Taiwan during these three decades.

2 Science popularization in Taiwan in the late 20th century

This study is set in the late 20th century in Taiwan, from 1970 to 1999. These thirty years witnessed a significant shift in the relationship between scientists and the public, and the development of popular science writings is closely tied to the social and political background. When *Science Monthly* was published in 1970, the political situation in Taiwan was complex. For many intellectuals at the time, science was the only way to strengthen the country and to raise the status of Taiwan in the international community. It is against this background that a group of Taiwanese scientists studying in the U.S. decided to launch a science magazine for the public.

This group of scientists could be viewed as true intellectuals who intended to educate the public and to strengthen the country through science education, as the motivation behind this magazine was their love for the country (Lin, 2010, p. 20). The launch of the magazine met with huge success in the 1970s when scientists, especially those who had studied in the U.S, were viewed as elite members of society. In the seventies, only the top students with scholarships could afford to study abroad, so overseas Taiwanese students were highly privileged.

The success of the magazine did not last long, and very soon it faced financial problems, which forced the editors to reflect on the needs of the public and consider the best way for a science magazine to communicate with its readers. The anti-nuclear movement in Taiwan in the 1980s particularly enhanced people's doubts about whether science was neutral or a tool to meet political purposes. The authority of scientists seemed to be demystified. Against this background, there was a growing feeling of distrust in the scientific information disseminated to the public. The relationship between scientists and lay readers underwent even more significant changes in the late nineties, when Taiwanese people, as in other places of the world, gradually became aware of the negative impacts caused by the so-called science advancement, and lost their trust in scientists.

This developmental phase of popular science writing in Taiwan has seen changes in the way experts manage their relationship with the lay audience in order to achieve the purpose of

science popularization. The changes are particularly manifested in articles published in *Science Monthly* and in other media which argued that popular science writings in Taiwan were still not interesting enough, not easy enough to understand, and still did not appeal to readers. Solutions to these problems were suggested by editors, leading scientists, journalists, and even from readers. In the light of such significant changes in public attitude towards the value of science and the status of scientists, this paper examines how communication between readers of *Science Monthly* and its scientist-writers has evolved. To answer this question, this study has chosen to investigate the questions sent in by readers in the Q&A column of the magazine in this period.

3 Data

The data for this analysis are collected from questions sent in by readers to the Q&A column in *Science Monthly*. To explore how views have changed towards science and links to linguistic variation, we have selected the three decades from 1970 to1999 for investigation because these decades mark one of the most significant changes in the attitude of the public towards science in Taiwanese society – from utter admiration to disappointment.

The Q&A column is used as a general term here, as the column has undergone several changes of name during the period covered by this study – which also interestingly reflect different perceptions of the notion of popular science. The Q&A column, named *Readers' Letters*, appeared in the first issue, but from 1975 to 1979 the column disappeared without explanation. In the March 1979 issue, the editor announced that the column would resume in response to requests from readers, but he did not explain why the column had been stopped.

In the 1980s, far fewer questions were published in the magazine. Both editors and other experts commented on the decline not only in the numbers of letters received, but also in the sales of the magazine. The *Science Monthly* editors linked this crisis to an increase in the number of other similar popular science magazines coming on to the market, especially well-presented translated foreign titles. For example, the Chinese translation of *Newton* had a glossy cover and contained colourful illustrations. Within *Science Monthly*, there was heated debate as to whether the magazine should be repackaged and the content made more appealing to younger readers, or whether, as most editors seemed to favour, it was important to resist such commercialization of science, i.e. to maintain all the formulaic and scientific terms in the magazine in order to present science knowledge accurately.

In 1985, the Q&A column was renamed *Readers, Editors, and Writers* to encourage dialogue between the three, but most of the letters sent into this forum were opinions from experts rather than questions from lay readers.

Owing to difficulties faced by the magazine, only a few letters were published in the 1980s and early 1990s. In 1997, a new column called *Science Talk* was launched. The purpose of this column, as stated by the editor, was to offer a platform for readers to pose questions and exchange ideas. One of the special features of this column was that readers were not only invited to send questions, they were also encouraged to answer other readers' questions. Moreover, the magazine provided prizes and rewards for those whose questions or answers were published. The new column was a success and the number of questions increased.

This study compiled three sets of data which roughly correspond to the three transition periods of the column: *Readers' Letters* (1970-1975, 1979), *Reader, Editors, Writers* (1980-

1985, 1996), and *Science Talk* (1997-1999). Our initial plan was to compare the changes of the genre across the three decades; however, the 1980s set only consists of 17 letters and is too small to be comparable with the other two decades. Therefore, we decided to focus on the comparison of the 1970s and the 1990s corpus in the following analysis. Table 1 below has the details of the two corpora.

	No. Questions	Word count
1970s	176	45,237
1990s	140	21,293

Table 1. Corpora size

A quick glance at Table 1 shows that although the number of letters in the 1970s corpus is only 26% higher than that in the 1990s corpus, the word count in 1970s is more than the double that of the 1990s corpus. This shows that the average length of the letters in 1970s is longer than in the 1990s. The analysis below will show that the difference is closely related to how readers in these two decades chose to interact with experts in different ways, and therefore through different linguistic strategies.

4 Features of Q&A columns

The study also bears in mind that interaction between writers and readers in our corpora are realized in the genre of the Q&A column. This means that the analysis of interactive linguistic features cannot ignore the potential generic constraints on the column. Society's attitude towards science and scientists influences how questioners perceive their relationship with science experts in our study. Questioners' writing is further constrained or influenced by the genre in which their questions are realized, i.e. the Q&A column in a popular science magazine. It is important to be aware that the questioners do not have unlimited linguistic resources to achieve the interactional goal because of generic conventions. Below, the Q&A column will be discussed in terms of the communicative goal, the generic conventions, and the relationship between genre users.

The most straightforward goal of the questioners in this forum is to elicit answers from their addressees. To be specific, each question carries out an act of request, which, in its broad sense can be defined as "an attempt by the speaker to get the hearer to perform some action by virtue of the hearer having recognized that such an attempt is being made (Jacobs & Jackson, 1983, p. 287)." In this sense, the act of request can cover from the weak illocutionary end of *invitation* to the strong illocutionary force of *order* (Bargiela-Chiappini & Harris, 1996, p. 640). Some letters in our corpus contain explicit linguistic expression of requests, whereas others do not. However, given that the purpose of this forum is to invite readers to send their questions to science experts to answer, we can assume that all the questioners who send in their questions to the magazine are at the same time asking for answers.

Second, the texts in the Q&A column are presented in a unique format (Kreuz & Graesser, 1993; Locher & Hoffmann, 2006). The most notable feature of these written Q&A forums in

the mass media is that the interaction only involves one exchange, i.e. one question followed by one answer, both of which are usually restricted in length. This generic constraint may contribute to some interactive features in our corpus which are against the norms of request which are often found in other studies. For example, previous studies on requests or interaction in general all point out that deductive patterns are preferred in Chinese (Hong, 1996; Scollon & Scollon, 2001; Dong, 2008). Before making explicit the interactional goal, it is common to have pre-grounders (such as apology, compliment, justification, etc.) which pave the path to the request acts. However, in our corpus, it is found that request acts are often presented at the beginning of a text, usually just following addressing and greeting. One of the reasons accounting for this unconventional interactional pattern may be related to the fact that the questioner only has one opportunity to make the request and does not have the opportunity to explain or develop the writing. Therefore, it is important to make the intention explicit enough for the answerers to notice it. To effectively achieve the communicative goal, text participants are required to be familiar with the generic conventions of a Q&A column, and to textualise their letters in a way that is acceptable in the genre.

Another feature noted by the studies of advice columns is that the letters sent to such forums are open letters, and this feature has an impact on how genre users construct a mutual relationship. The letters may be addressed to a specific person, but both questioners and answerers know that the letters are read by many people, including the addressees, editors, and all readers[1]. The influence of this feature on interactants is that they are clear that their private interaction is seen by others (or even participated in, such as by the editors). Therefore, their choices of interactive strategies are not only based on how they perceive each other as individuals, but even more on how the community (the scientists' community, the public, etc.) perceives each other. This feature of interaction further justifies our choice to investigate the social role of the public and the scientists through the study of exchanges between individuals.

5 Analytical framework

To achieve an effective communication, participants need to make assumptions about their addressees or any people involved in the context, and how the addressees or others may perceive them (Scollon and Scollon, 2001, p.35). These assumptions on respective roles can be encoded in a wide range of linguistic resources from which a speaker can choose to perform the most optimal communication with their target audience. Address terms, for example, are one of the most easily recognized devices of such kind. However, the interpersonal assumptions can also be realized in larger linguistic units, such as move structures, which, according to Swales (1990) is the basic unit of a genre. The analytical framework of this paper is based on move analysis, while also consulting the model of requesting strategies by Blum-Kulka, House and Kasper (1989).

[1] This audience can be understood as "referee group" in the model of audience design (Bell, 1984), which in a written context can be defined as "any third-party group (or discourse community) whose attributes, including their speech/writing style, are valued by either the addresser or the addressee or both" (Mason, 2000, p. 6). Although other readers of the magazines may not seem to be direct participants in interaction in the Q&A columns, they may still have an influence how text producers select their communication strategies.

5.1 Moves analysis

From the perspective of genre studies (Bhatia, 1993, p.13), we can see texts in our corpora as instances of structured and conventionalized communicative events with their own communicative purposes identified and understood by the genre users. Thus, texts can be analyzed into a series of moves, each "serv[ing] a typical communicative intention which always subservient to the overall communicative purpose of the genre" (ibid, p.30). Move analysis has been widely used as an investigating tool in genre studies to capture the macro-level text pattern in various professional settings (e.g. Zhu, 2000; Vergaro, 2005; Ding, 2007; Ho, 2011).

Moves in this study are defined as units of the texts performing a particular pragmatic function which are related to the communicative goal. In genre studies, it is maintained that shared communicative goals among genre users give rise to the conventionalized features of the genre, including the move structure. Therefore, we can hypothesize that since the social context of our selected data has changed over the three decades and resulted in different relationships between the genre users, these changes will also lead to different patterns of moves. The analysis below aims to investigate the interaction between experts and lay people by identifying what rhetorical moves are involved and how they are structured to achieve different communicative goals in the 1970s and in the 1990s.

5.2 Making requests

To assign the rhetorical functions of moves in the Q&A column, we have reviewed various studies on the act of requests, mainly based on Kulka, House and Kasper (1989), but also others who have applied the framework of request moves to various written genres, such as Kong (1998), Dong (2008), and Ho (2011).

Requests are often achieved through a sequence of moves, such as alerters (such as address terms), head moves and supportive moves. A head move is "the minimal unit which can realize a request" (Blum-Kulka, House and Kasper, 1989, p. 18), and can in itself perform the act of requesting. However, text producers often employ other moves to mitigate the potential threat of making requests to other people. Supportive moves are defined as those units of texts which do not form part of the core act of requests but help to realize the goal (ibid, p. 17). Some supportive moves identified in previous studies include attention getters, preparators, grounders (giving reasons for the request), disarmers (indicating awareness of a potential offense), promises of reward, imposition minimizers, etc[2]. In our corpus, we will identify the function of each move by considering what roles they play in achieving the overall communicative goal of requesting an answer.

Based on this analytical framework, in the following, we will first identify the moves used by the questioners to request an answer from the experts, and compare the percentages of these moves in the 1970s and the 1990s. Next, we will explain how different patterns of moves in the two decades are related to the social changes discussed in section 2.

[2] A comprehensive list can be found in the CCSARP coding manual in Blum-Kulka, House & Kasper (1989).

6 Findings

6.1 Moves identified in the corpus

Based on the key studies mentioned above along with some other studies which apply labels to their analysis, we went through the corpus and identified 12 moves. Apart from the statement of questions, not all the moves appear in every question. These moves are labeled and explained in table 2:

Moves	Explanation
Addressing	Address terms include the names or titles of the addressees, and usually occur at the beginning of the questions. The questioner may address the editors, the magazines, the general (e.g. everybody), or a particular person (e.g. Professor Li).
Self-introduction	The move involves information about the questioner besides their name in the signing off, for example, their occupation or age.
Compliment	This move may include a compliment on the quality of the magazine in general, or on the achievement of a particular scientist.
Head acts (Request proper)	This move is the minimal unit required in making requests. Questioners express their intention to request a response explicitly through specific syntactic structures (e.g. imperatives), verbs (e.g. *ask*) or modal verbs (e.g. *must, have to*).
Questions	This can be regarded as an information-oriented move and describes the scientific questions of which the answer is requested. This is the only move which is included in every letter in our corpus.
Proposed answers	After the description of questions, some questioners proposed what they thought might be the answers. When this move is included, the questioners often request for correction or confirmation.
Convincing strategies	Some questioners further explain why they need an answer from the magazine, in an attempt to persuade the addressee for a response. For example, a questioner may emphasize that he/she has been given different answers from various teachers and really needs an expert who can give him/her a definite answer.
Acknowledgement of trouble	The move shows acknowledgement to the time and efforts spent by the answerers in advance.
Self-denigration	In this move the questioners lower their status

	and thus elevate the status of the answerers, which is a typical feature in Chinese politeness (Pan and Kádár, 2011). For example, "I *am only a high school student, and naturally have only limited knowledge and understanding. Therefore, there must be deficiencies or mistakes in my proof.*[3]" The move is commonly used when proposed answers are given in the letter.
Wishes	This move is conventionally used in the ending of letters. Formulaic expressions of wishes are commonly used in formal Chinese letters, which usually indicate the relationship or hierarchy between the addressers and the addressees.
Thanking	The move expresses gratitude towards the addressee and in the corpus they often appear at the end of the letters as a closing move.
Sign-off	In this move, the questioners give their names, followed by ending verbs such as *jìng shàng*, similar to the expressions such as *yours truly* in English, but often embodies indication to the relationship or hierarchy between addressers and addressees.

Table 2. Request moves in the corpora

6.2 Frequency of moves

Based on the thirteen moves listed, all questions are manually checked for labelling of moves which perform the identified pragmatic functions. The percentage of letters which contain a certain move in a corpus is then calculated. The quantitative findings of the two corpora are presented in table 3.

[3] All the examples taken from the magazine *Science Monthly* were originally written in Chinese, and were translated into English by the author.

	1970s	1990s
Addressing	94%	94%
Self-introduction	16%	11%
Compliment	6%	4%
Request	78%	67%
Questions	100%	100%
Proposed answers	23%	0.7%
Self-denigration	6%	0.7%
Inconvenience	3%	1%
Convincing	13%	5%
Wishes	21%	7%
Sign-off	94%	91%
Thanking	1%	31%

Table 3. Frequency of moves in the corpora

Table 3 shows some interesting figures which are worthy of further exploration. First, "question" is the only moves that all letters have, which suggests that other moves all seem to be optional in this genre, for the communicative goal of requesting an answer. Second, the 1970s corpus has a same or higher percentage in all moves than in the 1990s corpus, except in the move of "thanking". In particular, the 1970s corpus has much higher percentages than the 1990s corpus in proposed answers, self-denigration, and wishes. The next section will further discuss these salient quantitative differences by considering the co-text and the social-historical context.

7 Discussions

The implication of these moves on the interaction in the two decades will be analysed below in terms of the communicative goal, the generic convention, and relationship between genre users, to explore how the nature and function of the Q&A column has changed.

7.1 Communicative goal

As we have pointed out, the communicative goal of the Q&A column is to request answers from experts. The first observation made from table 3 is that in order to achieve the interactional goal, the only move which seems to be compulsory and therefore used in all

questions in both corpora is the description of questions. This may be explained by the fact that in the context of the Q&A column, all genre participants are aware of this shared communicative goal, and therefore, to request an answer in this column, the readers do not need to make their request explicit, or to necessarily follow the convention of a letter (i.e. addressing, signing-off, etc.).

If the description of the question itself is enough to request an answer, i.e. to fulfil the generic conventions as shared and understood by the community members (the editors, the experts, other readers, etc.), it can be argued that the other moves should all be considered as interaction-oriented rather than information-oriented. The function of such interaction-oriented moves is to contribute to the establishment of an interpersonal relationship with the addressees, which may then persuade them to provide an answer. Example 1 illustrates how a high school student presented his question to the editor.

> Example 1 (1970s corpus)
> *Mr. Editor:*
> *I have a question in the field of biology to ask you. I hope that you can grant me an answer. I am a second-year student in Provincial Kee-Lung High School. Last year when I was in the first year, we had a biology class...[followed by a long description of how he wanted to test a theory but failed in the experiment]…I almost lost my confidence. By accident, my teacher introduced me to your publication "Science Monthly". After I had a quick glance, I was so excited. I have finally found the science magazine I have dreamed for; and I have found a column where my question can be answered – "Readers' Column". Therefore, I would like to ask for your advice.*
> *Chen Yi-De, respectfully*

In this example, the text producer uses a series of moves to collectively achieve the communicative goal of requesting an answer. The letter begins by an explicit head act of requesting (*have a question to ask you*), followed by an expression of wishes (*I hope that*), and raising the status of the others by self-denigration (*granting me an answer*). Then, the questioner introduces himself and presents his question in a long story of his experience in the biology class in the school. The letter writers' personal background and the story of problem-encountering may not seem directly relevant to achieve the goal of the communication, but they help construct an interpersonal relationship between the questioners and the answerers – and may be considered by the letter writer as a way to persuade the science experts to answer the question. Finally, the letter closes with the moves of compliment and another clear act of request. This example demonstrates how interaction-oriented moves are built by the letter writers into the communication. The example below presents a much shorter letter which contains fewer moves.

> Example 2 (1990 corpus)
> *Everyone must have the experience of passing through a tunnel in a car. Why is that when inside the tunnel, the car window becomes like a mirror? Outside the car (i.e. in the tunnel) it is supposed to be dark. Why does light reflect but not transmit?*

In example 2, the first sentence can be considered an implicit interaction-oriented move, which appeals to the experience that is assumed to be shared by all readers. However, the letter can be read as a description of question without any other explicit interactional moves, such as addressing, signing off, or expressing gratitude. This is in contrast to example 1, and

shows how the communicative goal of requesting an answer can be achieved with only one move.

Table 3 has shown that in the 1970s corpus, the percentage of all moves, except for the move of thanking (which will be discussed in 6.2), is equal to or higher than those in the 1990s corpus. It is clearly reflected in table 1 that the 1970s corpus has a much higher word count per letter than in the 1990s corpus. The finding suggests that in the 1970s, readers adopted more interactional strategies to request answers than those in the 1990s did. In other words, the 1990s readers simply present the information of the science question when requesting their answers, whereas the 1970s readers expended more effort negotiating their relationship with the addressees, presumably in the hope that the experts would therefore be more willing to provide answers. The different strategies for making requests may be explained by the fact that making a request is generally seen as a "face-threatening act" (Brown & Levinson, 1987), and making requests involves consideration of the relative position of requesters and requestees, in terms of power, social distance, and the weight of imposition. In this case, taking the social context into consideration, we may explain that the privileged status of scientists in the 1970s was perceived by readers as powerful and socially-distant, and therefore they felt the need to use more interactional moves to avoid potential offence to their addressees; whereas in the 1990s, the more direct requesting acts suggest that addressees did not perceive their answerers to be as powerful and distant as those did two decades ago. In other words, lay people's perception of experts has a clear impact on the generic structure of the Q&A column in a popular science magazine: to achieve the same communicative goal, moves to mitigate face-threatening acts by making requests are understood and practiced by most genre users of the 1970s corpus as an essential generic feature, but not by those of the 1990s corpus.

7.2 Genre conventions

Although the 1970s corpus features an equal or higher percentage in almost all moves in making requests than in the 1990s, the exception is the move of thanking. As a commonly used politeness strategy, it is only used 1% in the 1970s corpus, but has a much higher percentage of 31% in the 1990s corpus. The move was used most before the signing off. The reason for this might be that in the 1970s corpus the most common move before signing off is the move of giving wishes (21%), whereas only 7% give wishes in the 1990s corpus. The difference between performing the moves of wishes and thanking can be related to the generic conventions, that in which questioners chose to embody the act of request. Wishes are more often associated with letter writing in Chinese, especially those formulaic wishes which indicate the relationship between letter writers and addressees; whereas thanking as a closing move in written interactions is more often seen in quick exchanges of information and the register is usually less formal. Examples 3 and 4 show the contrast.

> Example 3 (1970 corpus)
> *Mr. Editor*
> *I have several questions and would like to bother the honourable magazine to solve them.*
> *[Question]*
> *Best wishes for the publishing company.*
> *Reader Du He, respectfully.*

Example 3 shows the format of a formal letter in Chinese, which is particularly featured in its closing remarks: a standard expression of wishes, and a conventional form of signing off. In formal Chinese letters, the choices of such closing remarks are highly standardised and are strictly governed by interpersonal relationships, for example, according to different family members (grandparents, parents, elder or younger family members), or different occupations (businessman, teachers, etc.). These features, however, disappear in less formal exchanges. Example 4 represents a more informal writing style, showing the features of a quick exchange of message.

> Example 4 (1990 corpus)
> *Science Monthly:*
> *The photos of the moon show clearly dark and bright zones. May [I] ask, what are the names of the two zones, and what are the substances that form the two zones? What are the causes? Thanks!*
> *Cheeky Pig from MiaoLi*

The formulaic closing remarks are replaced by just a word *thanks*, and the closing-off phrases which indicate interpersonal relationship are omitted in this example. A close investigation of self-reference may also show similar features to those in advice columns or pen pal letters, which were popular among youngsters in Taiwan in the 1990s, as shown in example 4 (Cheeky Pig).

The different moves to close the letters also tell us how the Q&A column was perceived by the questioners in the two corpora, and therefore influences the generic conventions they chose to follow. In the 1970s, most questioners chose to present their questions in the format of letters, and to follow the conventions of letter writings. A set of moves are therefore expected, such as the formulaic opening and closing of the letters, and wishes towards the end of the letters. More formal linguistic expressions are used to construct a socially distant relationship. On the other hand, the format most often adopted by the questioners in the 1990s tends to be shorter and less formal.

In terms of written convention, we can argue that because questioners chose the genre of short messages, their language was inevitably less formal and more straightforward. However, the choice of genre should also be regarded as a reflection of how questioners perceived their relationship with their addressees.

7.3 Genre users

Next we would like to further explore how questioners perceive the lay-expert relationship. This relates to the two most significant differences in the moves of proposing answers and giving wishes.

The move of proposing answers features in 23% of the 1970s corpus, but in only 0.7% of the 1990s corpus. In the questions containing this move, the questioners presented a question first, and then proposed the solutions they had in mind to the answers. This move may not seem directly related to the interaction between questioners and answers, but they often changed the type of requests being made. It is found that in such letters, questioners tend to make requests for corrections or directions (e.g. *That is how I reasoned. Please correct it*). Presenting one's own answers are also related to more uses of other interactional moves, such as being humble, as illustrated by example 5.

Example 5 (1970 corpus)
I am a high school student, and have not received strict training in physics. There must be many mistakes inside. Please [*you*] *direct and correct* [*me*]. *Thanks.*

A letter like this resembles very much a teacher-student interaction. Further evidence of the classroom discourse embodied in interaction in the 1970s corpus is supported by analysing the calls for letters made by the editors of the magazine. Below is a typical message from the editors in the 1970s.

We particularly welcome readers to raise questions over which they have thought. Your letter will preferably present the process of reasoning and the difficulties encountered, in order to provide a reference for answers and joint efforts in solving the question. The scope of this column excludes those exercises in the textbooks or those with answers which can be easily found in the high school textbooks - excepting those questions of particular value or beyond the level of the textbook.

The editors made reference to the classroom setting, such as "high school textbooks". The authoritative tone was also clear throughout this announcement, specifying what was expected and what was not accepted, reminiscent of how a teacher talks to students about an assignment submission. The editors' words indicate the power of the answerers over the questioners. On the other hand, questioners also constantly refer to their science education, demonstrating how they applied the textbook knowledge in their attempts at solving science questions. Many described experiments they carried out in school and discussions they had with peers or teachers. All these rhetorical moves and lexical features suggest that popular science in the 1970s seems to be perceived by the genre users as an extension of classroom science education, and this understanding is jointly shaped by different genre participants – firstly initiated by the editors (through the call for letters), and then consolidated by questioners through following the same classroom terms. Therefore the teacher-student interaction was used as a model by the genre users in the 1970s. Moreover, respecting the answerers as teachers also reflects the prevailing admiration for scientists in society. The public attitude towards scientists in the 1970s influenced how readers chose to interact with the answerers in a public forum in a magazine.

Following changes in society (i.e. the crisis in the reputation of scientists) and in the magazine (a drop in sales), a different relationship between genre users was shown in the call for letters made by the editors in the 1990s:

“Science Talk” is a forum provided to readers for questions and exchange of knowledge. Please [*everyone*] *dig out some interesting questions from your life and process of learning. Exchange your thoughts through the method of group discussion. Do not worry that your questions are ignorant; do not worry that your answers are not professional enough. We sincerely hope that readers can react passionately and join together to help the seeds of science bud and grow. […]*

Prize: Those who send in questions can receive one A1 poster of astronomy or one copy of a book on science topics. If your opinions or thoughts are published, the publisher will pay rewards.

The classroom discourse from the 1970s has shifted to a promotional discourse. The call for papers in this period read like an advertisement with the purpose of attracting customers, by persuading them not only linguistically but also materially (with rewards offered). The role adopted by questioners and answerers in this decade resembles the relationship between customers and service providers. The questioners were no longer powerless, because the magazine needed questions as much as or even more so than the questioners needed answers, in order to increase sales, for example. Also, by inviting readers to participate in answering questions, the boundary between the answerers – being high up in the social hierarchy whereas the questioners were low on the ladder – was also blurred. Therefore, the power relationship between genre users changed.

Questioners are released from the classroom interaction with teachers high up, and are engaged in a promotional activity launched by a commercial magazine. Compared with the 1970s corpus, the 1990s corpus features shorter questions (as indicated in the corpus word count), less interactional moves, less proposed answers, and a more informal style, and sometime even challenge the role of scientists, as shown in example 6.

> Example 6 (1990 corpus)
> *All editors, please allow me to ask another troublesome question:*
> *Regarding the HIV viruses which are difficult to tackle, since scientists already know that they are mutations to fight against medicine or other substances, can [scientists] not find out the ways to control the genes or to amend them? I know this may be easier said than done, but someone must have thought about this, no?*
> *[…]*
> *Duck from YiLan, who even goes to sleep with Science Monthly in her arms*

This question seems to move away from asking about scientific knowledge to asking about the capability of scientists. In the 1990s, readers show more interest in the practical uses of science or its impact on society rather than simply pursuing science as pure knowledge. Readers' perception on the value of science therefore leads to a change in the generic structure of the Q&A column, and this has an impact on all genre users. Not only has the readers' understanding of what moves are necessary in the genre changed, the editors and the experts' management of the Q&A column has also changed.

8 Conclusion

Although this study is restricted to the context of the late 20th century in Taiwan, in this set of data we have demonstrated that the way genre users perceive each other can have a significant impact on the generic features. Our data covers a period in Taiwan when the public attitude towards scientists shifted greatly, and the analysis of request moves in the two corpora (1970s and 1990s) has shown that generic features of the Q&A column were understood differently by genre users, and therefore led to different generic features.

Although the analysis in this section is divided into three genre aspects, they are actually all related to and influenced by one another. For example, because a reader saw the interaction as a student-teacher interaction, he/she would use more interaction-oriented moves to soften the face-threatening acts of making a request, and the generic format he/she chose would be more formal. On the other hand, a reader who felt they had the right to ask a question in the magazine, would probably think it unnecessary to build up an interpersonal relationship with the answerers, and a quick message a more suitable form for this communicative purpose.

Overall the different profiles of moves in the two corpora reflect the impact of the social changes on how lay readers chose to interact with science experts in a public forum. In the 1970s, the questioner modeled the communication with scientists on classroom interaction, and therefore chose a formal genre (letters) and adopted more interactional strategies to build up a relationship with the answerers. Moves which function to value science and scientists and to mitigate face-threatening acts were perceived by genre participants as a norm, and were shared practice in most letters in the 1970s. In the 1990s, we notice that texts produced by both editors and readers show features of promotional genres and we argue that the relationship between genre users seems to have shifted to the model of service providers and customers. This is reflected in shorter questions with far fewer interactive moves, and the choice of messages as the communicative vehicle. Although still aiming to achieve the same communicative goal as in the 1970s corpus, the generic conventions understood and practiced by community members have changed significantly.

Overall, this study presents the picture of the other side of expert-lay interaction in popular science. While scientists have gradually moved from information-oriented and detached interaction to more involved and interpersonal style in their writing to the public, as suggested in previous studies on popular science (e.g. Crismore & Fransworth, 1990; Hyland, 2005). This study shows that the lay public has moved away from building up interpersonal relationship to a more direct and information-oriented styled in their writing to the experts. It seems that this trend of doubt on the value of science or trustworthiness of scientists continues to prevail until now. However, the nature and functions of the Q&A genre can also be influenced by other factors, such as the mode of communication. Many science magazines now have interactive forums on their websites or other social networking platforms. It would be interesting for further studies into the interaction between experts and lay science readers to investigate whether the generic features of the Q&A column have continued to change in the past decade under the influence of these new modes of communication.

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American and British English - Polish - Russian semantic analysis of the automotive specialized lexicon

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Abstract

The article is devoted to investigating British English, American English, Polish and Russian automotive specialized lexicon. There are three main tasks to be accomplished: conducting componentional analysis, comparing British and American versions, identifying automotive borrowings in Polish and Russian. The first one allowed to determine paradigmatic relations, designate thematic groups and systematize the microsystem. The second analysis revealed discrepancies between British and American sets, including different or partially different lexemes nominating the same real objects, as well as examples of compounds with various spelling rules being applied to. Finally, we have identified numerous automotive borrowings from English into Polish and Russian, which confirms the leading role of British and American English as source languages for Polish and Russian automotive lexicons.

1 Introduction

In this paper we explore the nature of a lexicon referring to the automotive subject field. According to J. Lukszyn, specialized lexicon is a structured set of language signs representing concepts as units of human knowledge[1]. We choose four language versions of the microsystem, namely, British English, American English, Polish and Russian as a subject of investigation.

We try to accomplish three main tasks. The first one covers conducting semantic, componentional, analysis of the automotive lexicon. The second one involves comparison of British and American versions. The last one is to emphasize the role of English borrowings in Polish and Russian automotive lexicons.

2 Practical material

To achieve these goals we analyze sales materials referring to a passenger car, precisely Volkswagen Golf. These materials were extracted from British, American, Polish and Russian official Volkswagen webpages. As far as British English is concerned, the source documents include *Price and Specification Guide*, *Accessories Brochure* and *Technical Specification*. In case of American English, the analyzed lexicon was found in *Trims and Specs* tab available at

[1] Lukszyn, J. (2005): *Wiedza zawodowa a leksykon specjalistyczny*. In M. Balowski, W. Chlebda (eds.): *Ogród nauk filologicznych. Księga jubileuszowa poświęcona Profesorowi Stanisławowi Kochmanowi* (p. 391). Opole.

Volkswagen Golf subpage. As for Polish, two documents have been used: *Pricelist - New 3-door Golf* and *Pricelist - New 5-door Golf*. Finally, for Russian the following materials have been chosen: *Новый Golf - Каталог* and lexis found in *Комплектации* tab available at Volkswagen Golf subpage.

How were the investigated lexical units chosen? The objective was to create a complementary, multilingual, comparison of all the lexemes used by car sellers to present their product features to a customer. The only units not included in the analysis were the ones that did not appear in all four language versions. Moreover British version is treated as a point of reference.

Why have we chosen materials referring to a Volkswagen Golf and not a different car? The vehicle has been produced for thirty eight years, and the manufacturer has already released six versions of it. It is the most popular passenger car in the world. That is why we may assume that the corresponding product information should be a relatively reliable and stable language source. Of course, it surely reflects idiosyncrasies of the analyzed texts authors, however I would like to stress that we compare four living specialized language versions[2] and not four sets of dictionary equivalents. Such a choice has been made on purpose, because as shown in the material, lexicon used by professionals, journalists and people interested in the automotive subject field may be quite distinct from standardized vocabulary sets. Please consider the following exemplifications: 'CD-чейнджер', 'CD-плейер', 'SD-слот' or 'Bi-Xenonowy'. Such an investigation might give us a chance, for example, to assess which forms that have already been normalized by linguists[3] are still used incorrectly or we may observe how new language units interact with the 'normalized' ones, which however is not the objective of this paper.

3 Methodology

As already mentioned, first we are going to conduct a componential analysis[4]. At the beginning of the 1940s L. Hjelmslev made an assumption that language signs can be divided into smaller elements called semes. The corresponding methodology was evolving for tens of years and its main objective is to determine semes that cannot be further divided[5]. Nowadays componentional analysis is one of the most frequently used methods of investigating word semantics. It is considered to be the basis of every semantic description[6]. Componentional analysis gives a possibility of identifying the whole network of semes characteristic for a particular language sign, starting from major grammatical ones and ending with the smallest ones - potential[7]. It is worth adding here a few words about the concept versus meaning relation. According to N. A. Gunina "The meaning conveys certain cognitive features and components that make up the concept, but it is always only part of the semantic content of the

[2] LSP – Language for special purposes. This expression came into use in the 1970s and is understood as a part of a national language consisting of terminology and nomenclature. It is also considered to be highly active as far as meanings changes are concerned. Люциньски, К. (2009): *Система семантических параллелей в некоторых спецязыках*. In M. Kornacka, M. Górnicz (eds.): *Języki specjalistyczne 9. Wyraz – Tekst – Interpretacja* (p. 62). Warszawa.

[3] Three procedures are meant here: unification, harmonization and normalization. Lukszyn, J. (2005): *Leksykon specjalistyczny jako nośnik wiedzy zawodowej*. In F. Grucza, W. Wiśniewski (eds.): *Teoria i praktyka upowszechniania nauki. Wczoraj i jutro* (p. 112). Warszawa.

[4] General principles of the analysis methodology were first applied in my PhD thesis defended at the Kazimierz Wielki University in 2011.

[5] Timoszuk, M. (2005): *Język a teoria lingwistyczna* (p. 130). Warszawa.

[6] Grzegorczykowa, R. (1995): *Wprowadzenie do semantyki językoznawczej* (p. 78). Warszawa.

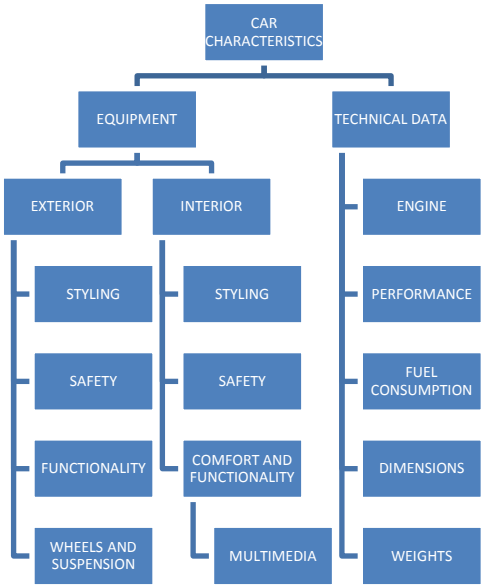
[7] Кузнецова, Э. В. (1982): *Лексикология русского языка* (pp. 34-35). Москва.

concept. For the explication of the content of the concept numerous lexical items as well as experimental studies to complement the results of linguistic analysis are required. Thus, the meaning and the concept are correlated as communicatively relevant part and a mental whole"[8]. Theoretically, in this paper we are interested in meanings, however, are we able to operate on meanings and concepts separately? I believe they both use the same medium, which is human mind. Thus creating an ultimate set of features characteristic for a single concept or meaning seems to be impossible.

The first stage of our analysis involves determining an archiseme, a seme that is present in meanings of all the words in a particular group. Next we are going to identify semantic differential features that divide the material. They can be determined with the help of dictionary definitions or lexical material and intuition[9]. In case of our analysis there is no specialized definition that could describe such a complex phenomenon as a particular car characteristics, that is why semantic features are identified basing on the second method. Furthermore, in order to make the whole classification more comprehensible, I am introducing a division into groups based on a hyponym - hypernym opposition. We need to bear in mind that the same semantic feature can be an archiseme in one group and a differential feature in a different one. In our investigation numerous hyponyms (differential features) identified in the initial stage become hypernyms in further stages[10].

4 Componentional analysis

The below mentioned semantic tree presents relations occurring within the network of notions referring to the analyzed lexical units.



[8] Gunina, N. A. (2011): Concept vs. meaning: cognitive approach. *Вестник Тамбовского Государственного Технического Университета.* Том 17. № 1: 249.
[9] Посох, А. В. (1975): *Компонентный анализ семантики.* In А. Е. Супрун (ed.), *Методы изучения лексики* (p. 42). Минск.
[10] Карвовски, С. (2008): *Названия средств дорожного транспорта (парадигматический аспект)*. In Т. А. Лисицына (ed.), *Язык и образование: Межвузовский сборник научных трудов* (p. 47). Великий Новгород.

As illustrated on the above chart, 'car characteristics' would be an archiseme for a group of lexical units referring to the chosen car specification. Basing on the catalogue of collected language units and intuition we can identify two differential semantic features (hyponyms): 'equipment' and 'technical data'. These features become archisemes (hypernyms) of the corresponding thematic groups. 'Equipment' is further differentiated by two semes (hyponyms): 'exterior' and 'interior'. 'Exterior' becomes an archiseme (hypernym) of a lexical set divided by four differential features (hyponyms): 'styling', 'safety', 'functionality', 'wheels and suspension'. At this point we may ascribe lexical units to the first differential feature, namely 'styling', as it becomes a hypernym of the below-mentioned signs:

	American English	**British English**	**Polish**	**Russian**
	Styling	**Styling**	**Stylistyka**	**Дизайн**
1.	Non-metallic paint	Non-metallic paint	Lakier uniwersalny	Цвет кузова стандарт
2.	Metallic paint	Mettalic paint	Lakier metaliczny	Цвет кузова металлик
3.	Pearl paint	Pearl effect paint	Lakier perłowy	Цвет кузова перламутр
4.	Galvanized sheet metal	Galvanised body	Galwanizowane nadwozie	Оцинкованный кузов
5.	Body color / Body-colored door handles	Body-coloured door handles	Klamki lakierowane w kolorze nadwozia	Корпус ручки дверей в цвет кузова
6.	Body color / Body-colored front grille	Body-coloured front grille	Listwy na osłonie chłod-nicy w kolorze nadwozia	Решётка радиатора в цвет кузова
7.	Body color / Body-colored bumpers	Body-coloured bumpers	Zderzaki lakierowane w kolorze nadwozia	Бамперы спереди и сзади, окрашенные в цвет кузова
8.	Body color / Body-colored side mirrors with integrated turn signals	Body-coloured door mirrors with integrated indicators	Obudowy lusterek z kierunkowskazami bocznymi lakierowane w kolorze nadwozia	Корпуса зеркал с интегрированными показателями поворота в цвет кузова
9.	Chrome trimmed radiator grille	Chrome trimmed radiator grille	Listwy na osłonie chłodnicy chromowane	Хромированная решётка радиатора
10.	Rear diffuser	Rear diffuser	Tylny dyfuzor	Задний диффузор
11.	Unique badging	Unique badging	Emblematy	Логотипы
12.	Red brake calipers	Red brake calipers	Obudowa zacisku hamulcowego w kolorze czerwonym	Тормозные суппорта окрашенные в красный цвет
13.	Front spoiler	Front spoiler	Spojler przedni	Передний спойлер
14.	Side skirts	Side skirt set	Komplet spojlerów progowych	Комплект накладок на пороги
15.	Rear spoiler	Rear spoiler	Spojler tylny	Задний спойлер
16.	Roof edge spoiler	Rear roof spoiler	Spojler dachowy	Задний спойлер крыши

The second differential feature, that is 'safety', has become a hypernym of the following language units:

	American English	**British English**	**Polish**	**Russian**
	Safety	**Safety and security**	**Bezpieczeństwo**	**Безопасность**
1.	Brake pad wear indicator	Brake pad wear indicator	Czujnik zużycia klocków hamulcowych	Индикация износа тормозных колодок
2.	Front and rear disc brakes	Front and rear disc brakes	Hamulce tarczowe z przodu i z tyłu	Дисковые тормозные механизмы спереди и сзади
3.	Brake light in top center of rear hatch	High level 3rd brake light	Trzecie światło "Stop"	Стоп-сигнал

The third feature 'functionality' has changed its status to a hypernym of these language sings:

	American English	**British English**	**Polish**	**Russian**
	Functionality	**Functionality**	**Funkcjonalność**	**Функциональность**
1.	Power tilting / sliding tinted sunroof	Electric tilt / sliding glass sunroof	Dach szklany, sterowany elektrycznie	Панорамная подъемно-сдвижная крыша с электро-приводом и шторкой
2.	LED license plate lighting	Rear number plate lights incorporating LED technology	Oświetlenie tylnej tablicy rejestracyjnej w technologii LED	Светодиодная подсветка номерного знака
3.	Side mirrors with integrated turn signals	Door mirrors with integrated indicators	Obudowy lusterek z kierunkowskazami bocznymi	Корпуса зеркал с интегрированными показателями поворота
4.	Halogen headlights	Halogen headlights	Światła halogenowe	Галогеновые фары
5.	Heat-insulating glass	Heat insulating glass	Termoizolacyjne szyby	Атермальное остекление
6.	Rear window wiper and washer system	Rear screen wash / wipe	Wycieraczka szyby tylnej ze spryskiwaczem	Очиститель / омыватель заднего стекла
7.	Foglights	Front fog lights	Reflektory przeciwmgielne	Передние противотуманные фары
8.	Rear LED lights	Rear lights incorporating LED tech	Światła tylne wykonane w technologii LED	Светодиодные задние фонари
9.	Bi-Xenon high-intensity headlights with LED daytime running lights and adaptive front-lighting system	Bi-xenon headlights with automatic range adjustment, dynamic curve lighting	Reflektory Bi-Xenonowe (bi-ksenonowe / biksenonowe) z funkcją doświetlania zakrętów, regulacją zasięgu, światłami LED do jazdy dziennej	Биксеноновые фары с адаптивным, динамическим поворотным светом и светодиодными ходовыми огнями
10.	Daytime running lights	LED daytime running lights	Światła do jazdy dziennej	Режим дневного света фар
11.	Coming home and leaving home feature	Automatic coming / leaving home lighting function	Coming Home / Leaving Home – funkcja automatycznego włączania świateł oświetlających otoczenie	Функция "Coming home" / "Leaving home"
12.	Roof box	Roof box	Bagażnik dachowy	Бокс-багажник
13.	Base carrier bars	Roof bars	Belki bagażnika dachowego	Поперечины на крышу
14.	Bike holder attachment	Bicycle holder	Uchwyt na rower	Крепление для велосипеда
15.	Trailer hitch	Towbar	Hak holowniczy	Тягово-сцепное устройство
16.	Hitch mount bike attachment	Bicycle carrier for the towbar	Bagażnik na rowery do samochodów z hakiem holowniczym	Дополнительное крепление для третьего велосипеда
17.	Kayak holder attachment	Kayak holder	Uchwyt na kajak	Крепление для перевозки лодок
18.	Sliding ski /snowboard attachment	Ski and snowboard holder	Uchwyt na narty i deskę snowboardową	Крепление для лыж или сноубордов
19.	Splash guards	Mudflaps	Chlapacze tylne	Брызговики
20.	Body side moldings	Door side mouldings	Listwy ochronne boczne	Боковые молдинги

The fourth differential semantic feature 'wheels and suspension' becoming a hypernym, unites such lexemes as:

	American English	**British English**	**Polish**	**Russian**
	Wheel and suspension	**Wheel and suspension**	**Koła i zawieszenie**	**Колеса и подвеска**
1.	Anti-theft wheel locks	Anti-theft wheel bolts	Śruby kół z zabezpieczeniem antykradzieżowym	Болты-секретки
2.	Alloy wheels	Alloy wheels	Obręcze aluminiowe	Легкосплавные диски
3.	Steel wheels	Steel wheels	Obręcze stalowe	Литые диски
4.	Low rolling resistance tires	Low rolling resistance tyres	Opony o zmniejszonym oporze toczenia	Шины с низким сопротивлением качению
5.	Wheel covers	Wheel trims	Kołpaki	Колпаки
6.	Temporary-use spare tire	Steel space saver spare wheel	Koło zapasowe, dojazdowe	Аварийное колесо
7.	All-season / All weather tires	All-season tyres	Opony całoroczne / wielosezonowe	Всесезонные шины
8.	Sport suspension	Sports suspension	Zawieszenie sportowe	Спортивная подвеска

Now we are getting back to the second-level differential semantic feature, that is 'interior'. This feature becomes a hypernym of a numerous thematic group, divided by the following differential features: 'styling', 'safety', 'comfort and functionality'. 'Styling' as a hypernym now can be found in meanings of the following signs:

	American English	**British English**	**Polish**	**Russian**
	Styling	**Styling**	**Stylistyka**	**Дизайн**
1.	Leather-wrapped, multi-function steering wheel	Leather trimmed three-spoke steering wheel	Kierownica multifunkcyjna, trójramienna, obszyta skórą	3-спицевое рулевое колесо с кожаной отделкой
2.	Decorative accents	Decorative inserts	Aplikacje dekoracyjne	Декоративные вставки
3.	Front and rear carpet floor mats	Carpet mats, front and rear	Dywaniki materiałowe z przodu i z tyłu	Тканевые коврики спереди и сзади
4.	Brushed aluminum appearance footrest and pedal covers	Aluminium-look pedals, clutch, brake and accelerator	Pedały hamulca, sprzęgła i gazu wykończone aluminium	Металлические накладки на педали
5.	Chrome trimmed surrounds	Chrome-plated surrounds	Chromowane elementy wykończeniowe przełączników	Хромированная окантовка приборов
6.	Cloth seating surfaces	Cloth upholstery	Tapicerka siedzeń materiałowa	Тканевая обивка сидений
7.	Leather seating surfaces	Leather upholstery	Tapicerka siedzeń skórzana	Кожаная обивка сидений
8.	Leather-wrapped shift knob and brake handle	Leather trimmed gear knob and handbrake grip	Dźwignie zmiany biegów i hamulca ręcznego obszyte skórą	Рукоятки рычага КП и ручного тормоза отделаны кожей
9.	Door sil protectors	Door sill trim	Chromowane listwy na progach	Алюминиевые накладки на порогах

The second differential feature, that is 'safety' has become a hypernym of the below-presented lexemes:

	American English	**British English**	**Polish**	**Russian**
	Safety	**Safety and security**	**Bezpieczeństwo**	**Безопасность**
1.	Side airbags	Side airbag system	Poduszki powietrzne boczne	Боковые подушки безопасности
2.	Electronic Stability Control (ESC)	ESP (Electronic Stabilisation Programme)	ESP (elektroniczny system stabilizacji toru jazdy)	Электронная система курсовой устойчивости (ESP)
3.	Anti-lock Braking System (ABS)	ABS (Anti-lock Braking System)	System antypoślizgowy ABS	Антиблокировочная система (ABS)
4.	Anti-theft alarm system	Alarm	Autoalarm	Противоугонная система
5.	Side curtain protection head airbags	Curtain airbag system	Kurtyny powietrzne	Шторки безопасности для защиты головы
6.	Optimized head restraints (driver and front passenger)	Driver's and front passenger's optimized head restraints	Zagłówki z przodu, z regulacją wysokości	Травмобезопасные подголовники на передних сиденьях
7.	Driver's side knee airbag	Driver's knee airbag	Poduszka kolanowa dla kierowcy	Подушка безопасности для защиты коленей водителя
8.	Immobilizer	Electronic engine immobiliser	Immobiliser	Электронный иммобилайзер
9.	Anti-Slip Regulation (ASR)	ASR (Traction Control)	ASR (system przeciwdziałający ślizganiu się kół przy przyspieszaniu)	Антипробуксовочная система (ASR)
10.	Height-adjustable, 3-point, front safety belts	Height-adjustable front three-point seat belts with tensioners	Pasy bezpieczeństwa, bezwładnościowe, 3-punktowe, z regulacją wysokości dla foteli przednich	3-точечные ремни безопасности спереди, с преднатяжителями и регулировкой по высоте
11.	Dual tone horns	Two-tone horn	Sygnał dźwiękowy, dwutonowy	Двухтональный звуковой сигнал
12.	Seat belt reminder, visual and audible	Warning buzzer and light for front seat belts if unfastened	Sygnalizator niezapiętych pasów bezpieczeństwa dla kierowcy i pasażera z przodu, akustyczny	Звуковая и визуальная сигнализация о непристегнутых передних ремнях безопасности
13.	Rear seat head restraints	3 rear head restraints	3 zagłówki z tyłu	3 подголовника на задних сиденьях
14.	Electronic differential lock	Electronic differential lock	Blokada mechanizmu różnicowego	Электронная блокировка дифференциала
15.	LATCH (Lower Anchors and Tethers for children) child seat anchor points	Isofix child seat preparation	Isofix - mocowanie fotelika dziecięcego	Крепления Isofix
16.	First aid kit	First-aid kit	Apteczka samochodowa	Аптечка

In case of the third differential feature - 'comfort and functionality', there is a clear lexical subgroup that can be separated. That is why apart from 'comfort and functionality' we are going to consider a 'multimedia' feature. 'Comfort and functionality' playing the role of a hypernym, unites the below-mentioned units:

	American English	British English	Polish	Russian
	Comfort and functionality	**Comfort and functionality**	**Komfort i funkcjonalność**	**Комфорт и функциональность**
1.	2 front cupholders	Cup holders, front x 2	2 uchwyty na napoje	2 подстаканника спереди
2.	Driver's seat height-adjustable	Driver's seat height adjustment	Fotel kierowcy, z regulacją wysokości	Водительское сиденье с регулировкой по высоте
3.	Easy entry system	Easy entry sliding seats	System Easy Entry dla foteli przednich	Функция Easy Entry для передних сидений
4.	Glovebox illuminated, lockable, with adjustable cooling feature	Glovebox, illuminated, cooled and lockable	Schowek pasażera, zamykany, klimatyzowany i podświetlany	Перчаточный ящик, запираемый с подсветкой и функцией охлаждения
5.	Height-adjustable and telescopic steering column	Height and reach adjustable steering wheel	Kolumna kierownicy z możliwością regulacji w dwóch płaszczyznach	Рулевая колонка, регулируемая по высоте и вылету
6.	Luggage compartment light	Luggage compartment light	Oświetlenie bagażnika	Освещение багажника
7.	Two front reading lights	Reading lights, front x 2	Lampki do czytania z przodu	2 светильника для чтения спереди
8.	60/40-split folding rear seat	Split folding rear seat backrest 60:40	Oparcie tylnej kanapy składane w proporcji 40:60	Спинка заднего сиденья складная с ассиметричным разделением
9.	Roof console with integrated sunglasses holder	Storage compartment in roof console	Konsola dachowa z przykrywanym schowkiem	Ниша в потолочной консоли с крышкой
10.	Front door storage pockets	Storage compartments in front doors	Schowki w drzwiach	Карманы в дверях
11.	Vanity mirrors, illuminated	Vanity mirrors, illuminated	Podświetlane lusterka "make-up" w osłonach przeciwsłonecznych po stronie kierowcy i pasażera	Макияжные зеркала слева и справа
12.	Remote central power locking system	Remote central locking	Centralny zamek sterowany droga radiową	Центральный замок с дистанционным управлением
13.	Climatic air-conditioning	Air conditioning, 'Climatic' semi-automatic control	Klimatyzacja z regulacją manualną "Climatic"	Кондиционер полуавтоматический «Climatic»
14.	Power windows	Electric windows	Szyby sterowane elektrycznie	Электростеклоподъёмники
15.	Power-operated, heated side mirrors	Electrically heated and adjustable door mirrors	Lusterka boczne, elektrycznie ustawiane i podgrzewane	Наружные зеркала - с электроуправлением и подогревом
16.	Multi-function trip computer	Multifunction computer	Komputer pokładowy	Многофункциональный индикатор / путевой компьютер
17.	Electromechanical power steering with variable assistance	Power-assisted steering, speed-sensitive	Wspomaganie układu kierowniczego, elektromechaniczne, regulowane w zależności od prędkości samochodu	Электромеханический усилитель рулевого управления с переменной эффективностью в зависимости от скорости
18.	2 tie-down hooks in trunk	Bag hooks in luggage compartment x 2	Uchwyty do mocowania bagażu w przestrzeni bagażowej	Крючок для сумок в багажнике
19.	Front center armrest with storage compartment	Front centre armrest, with storage compartment	Podłokietnik z przodu ze schowkiem	Центральный подлокотник спереди с вещевым отсеком
20.	Lumbar support for	Front comfort seats	Fotele komfortowe z	Регулировка поясничного

	driver and front passenger	with height and lumbar adjustment	przodu, z regulacją podparcia odcinka lędźwiowego kręgosłupa	подпора на передних сиденьях
21.	Footwell lighting	Front footwell illumination	Oświetlenie przestrzeni wokół nóg z przodu	Подсветка пространства для ног
22.	Pass-through	Load-through provision	Wnęka do przewożenia długich przedmiotów	Лючок в заднем сиденьи
23.	12V power outlet in rear	12V socket in luggage compartment	Gniazdo 12V w bagażniku	Розетка 12В в багажнике
24.	Rain sensor and self-dimming rearview mirror	Rain sensor and automatic dimming interior rear-view mirror	Czujnik deszczu z automatycznie przyciemnianym lusterkiem wstecznym	Датчик дождя и зеркало заднего вида с автозатемнением
25.	Cruise control	Cruise control	Tempomat	Круиз-контроль
26.	Heated front seats	Heated front seats	Podgrzewane fotele przednie	Электроподогрев передних сидений
27.	Shifter paddles	Steering wheel including paddle shift	Łopatki do zmiany biegów pod kierownicą	Подрулевые клавиши переключения передач
28.	Climatronic, dual-zone automatic climate control system	2-zone electronic climate control	Klimatyzacja dwustrefowa, z regulacją automatyczną "Climatronic"	Климат-контроль двухзонный Climatronic
29.	Park Distance Control	Park Assist	System wspomagający parkowanie "Park Assist"	Park Assist
30.	Rearview camera	Rear-view camera	Kamera cofania "Rear Assist"	Камера заднего вида Rear Assist
31.	Parking sensors	Parking sensors, front and rear	Czujniki parkowania z przodu i z tyłu	Парковочные датчики спереди и сзади
32.	Hill Descent Assist	Hill hold function	Asystent podjazdu	Система Hill Hold Control
33.	Cargo net	Luggage net	Siatka do mocowania bagażu	Багажная сетка
34.	Sun shields	Sunblinds	Osłony przeciwsłoneczne	Солнцезащитные шторки
35.	Cooler	Cool / warm box	Lodówka – termos samochodowy	Холодильник-термос
36.	Trunk mat	Floor mats	Mata bagażnika	Напольное покрытие для багажного отделения

The 'multimedia' feature has changed its status to a hypernym of such language signs as:

	American English	**British English**	**Polish**	**Russian**
	Technology	**In-car entertainment**	**Multimedia**	**Мультимедиа**
1.	8-speaker sound system with MP3 compatible in-dash CD player, AM/FM radio and AUX-in for portable audio players	Radio system / MP 3 compatible CD player with 8 speakers and AUX-in socket for connection to an external multimedia	System radiowy, z odtwarzaczem CD, MP3, 8 głośnikami, gniazdem AUX-IN	Радиосистема с встроенным CD-MP3-плейером, 8 динамиками, разъемом для подключения внешних аудио-устройств
2.	Bluetooth with audio streaming	Bluetooth telephone connection	Instalacja telefonu Bluetooth	Беспроводное подключение через Bluetooth для мобильных телефонов
3.	Media Device Interface (MDI) with iPod cable	MDI (Multi Device Interface) with USB and iPod connection cables	Złącze multimedialne - Media-In dla iPod / iPhone	Media-IN с разъемом USB
4.	CD changer	CD autochanger	Zmieniarka CD	CD-чейнджер
5.	Touchscreen navigation system	Touch-screen navigation system	System nawigacji satelitarnej z dotykowym wyświetlaczem	Навигационная система с сенсорным дисплеем

6.	Multi-function color display	Multi-function colour display	Wielofunkcyjny kolorowy wyświetlacz	Многофункциональный дисплей
7.	SD card reader	SD card reader	Czytnik kart SD	SD-слот

Finally, we will focus our attention on the first-level differential feature - 'technical data', which changes its status to a hypernym of a thematic group divided by five differential features: 'engine', 'performance', 'fuel consumption', 'dimensions' and 'weights'. The first one unites the following lexemes:

	American English	**British English**	**Polish**	**Russian**
	Engine	**Engine**	**Silnik**	**Двигатель**
1.	Engine displacement	Cubic capacity	Pojemność, l/cm3	Рабочий объем л/куб. см
2.	Horsepower (SAE) @ rpm	Max. output, PS (01)/kW at rpm	Moc maksymalna, kW(KM) przy obr./min.	Макс. мощность кВт/л.с. /при оборотах/мин.
3.	Maximum torque, lbs - ft @ rpm	Max. torque, lbs.ft/Nm at rpm	Maks. moment obr., Nm przy obr./min.	Макс. крутящий момент Нм/при оборотах/мин.

The second feature 'performance', being a hypernym now, may be found in meanings of such units as:

	American English	**British English**	**Polish**	**Russian**
	Performance	**Performance**	**Osiągi**	**Динамика**
1.	Top speed	Top speed	Prędkość maksymalna	Макс. скорость
2.	Acceleration	Acceleration	Przyspieszenie	Время разгона

The third differential feature, namely 'safety', as a hypernym takes the superordinate position in the following group:

	American English	**British English**	**Polish**	**Russian**
	Fuel consumption	**Fuel consumption**	**Zużycie paliwa**	**Расход топлива**
1.	City	Urban	Cykl miejski	Городской цикл
2.	Highway	Extra-urban	Cykl pozamiejski	Загородный цикл
3.	Combined	Combined	Średnio	Смешанный цикл

As far as the fourth feature is concerned, we may qualify this group of subordinate units:

	American English	**British English**	**Polish**	**Russian**
	Dimensions	**Dimensions**	**Wymiary**	**Размеры**
1.	Length	Length	Długość	Длина
2.	Width	Width	Szerokość	Ширина
3.	Height	Height	Wysokość	Высота
4.	Wheelbase	Wheelbase	Rozstaw osi	Колесная база
5.	Turning circle	Turning circle	Średnica zawracania	Диаметр разворота
6.	Cargo volume (with rear seats folded down)	Maximum luggage capacity with rear seats upright, folded	Objętość bagażnika, siedzenia złożone / rozłożone	Объем багажного отделения (при сложенных задних сиденьях)
7.	Head room	Effective headroom	Odległość od siedzenia do dachu z przodu / z tyłu	Высота салона
8.	Shoulder room	Elbow width	Szerokość wnętrza z przodu / z tyłu	Ширина салона на уровне плеч

The last feature 'weights' is a part of the following lexemes meanings:

	American English	**British English**	**Polish**	**Russian**
	Weights	**Weights**	**Waga**	**Macca**
1.	Unloaded weight	Unladen weight	Masa własna pojazdu	Снаряженная масса
2.	GVWR (gross vehicle weight rating)	Gross vehicle weight	Dopuszczalna masa całkowita	Полная масса
3.	Payload	Payload	Ładowność	Полезная нагрузка
4.	Front and rear axle weight rating	Axle load limit: front and rear	Dopuszczalny nacisk na oś przednią / tylną	Допуст. нагрузка на ось переднюю / заднюю
5.	Towing capacity	Trailer load limits	Dopuszczalna masa holowanej przyczepy	Макс. масса прицепа
6.	Maximum roof cargo weight	Maximum roof load	Dopuszczalne obciążenie dachu	Макс. нагрузка на крышу

5 Comparison of British and American versions

At this point we will focus our attention on comparing British and American language versions. British lexical system exists side by side with the American one. There are numerous British - American word pairs referring to the automotive subject field. But are they interchangeable in all the contexts they might appear in? Words change in meaning according to time, place and circumstance. Word pairs may differ, for example, in the degree of abstraction or formality of discourse. Let us consider the following ones: *window* and *screen*, *cargo* and *load*. In a given context one seems to be more appropriate than the other[11]. A wrong choice may lead to a mistake or a misunderstanding. David Crystal gives an example of the word 'caravan', which in the meaning of a 'group of travelers in the desert' is common to both microsystems, but in the sense of a 'vehicle towed by a car' it is characteristic only for British English. In American English it is a 'trailer'[12]. That is why it is important to make language users aware of how the two dialects differ from each other.

The analyzed material allows to identify numerous word pairs that have been divided into two groups. The first one includes examples when one signifier is being referred to by different units in the two languages. The second one includes word pairs with partial differences in their form.

	Different units		**Partially different units**	
	AmE	BrE	AmE	BrE
1.	Sheet metal	Body	Exhaust tip	Exhaust tailpipe
2.	Turn signal	Indicator	Body-colored	Body-coloured
3.	Trailer hitch	Towbar	Power tilting / sliding	Electric tilt / sliding
4.	Splash guard	Mudflap	License plate	Number plate
5.	Seating surface	Upholstery	Side mirror	Door mirror
6.	Trunk	Luggage compartment	Rear window	Rear screen
7.	Cargo	Luggage	Base carrier bars	Roof bars
8.	Engine displacement	Cubic capacity	Body side molding	Door side moulding
9.	Horsepower	Maximum output	Wheel lock	Wheel bolt
10.	City	Urban	Wheel cover	Wheel trim
11.	Highway	Extra-urban	Temporary-use spare tire	Steel space saver spare wheel

[11] Hayakawa, S. I. (1994): *The Penguin Guide to Synonyms and Related Words* (pp. 8-9). London.
[12] Crystal, D. (2003): *The Cambridge Encyklopedia of the English Language*. Cambridge.

12.	Cargo volume	Maximum luggage capacity	Leather-wrapped	Leather trimmed
13.	Towing Capacity	Trailer load limits	Decorative accents	Decorative inserts
14.	Tire	Tyre	Floor mat	Carpet mat
15.			Chrome trimmed	Chrome-plated
16.			Shift knob	Gear knob
17.			Door sil protector	Door sill trim
18.			Safety belt	Seat belt
19.			Storage pocket	Storage compartment
20.			Power windows	Electric windows
21.			Pass-through	Load-through provision
22.			12V power outlet	12V socket
23.			Sun shield	Sunblind
24.			Cooler	Cool / warm box
25.			CD changer	CD autochanger
26.			Unloaded weight	Unladen weight
27.			Gross vehicle weight rating	Gross vehicle weight
28.			Axle weight rating	Axle load limit
29.			Maximum roof cargo weight	Maximum roof load

Moreover there is a group of word pairs differentiated by spelling rules being applied to. Some compounds are solid or hyphenated in British variant and written separately in American version or the other way round.

	Hyphenated, solid or open compounds		**Solid compounds**	**Open compunds**
	AmE	BrE	AmE	BrE
1.	First aid	First-aid	Foglight	Fog light
2.	Air-conditioning	Air conditioning	Cupholder	Cup holder
3.	Multi-function	Multifunction		
4.	Rearview	Rear-view		
5.	Touchscreen	Touch-screen		
6.	Heat-insulating	Heat insulating		

6 English automotive borrowings

Finally, we shall emphasize the role of automotive borrowings[13] in Polish and Russian. It is not surprising that they play a crucial role in both microsystems. It is also not a surprise that English delivers the highest number of borrowings in this field. What is the reason standing behind it? British English has grown over many centuries by incorporating words from Latin, Greek, Celtic, Scandinavian, French and many other languages. English speaking community fought and traded all over the world spreading their language. But also American English has gained recognition and prestige. The United States being currently the most influential country in politics, science, industry or popular arts sets standards in many spheres of our lives, including language[14].

The below-presented table presents explicit examples of calques, foreign words and partial substitutions functioning within Polish and Russian automotive lexicons. It clearly indicates that Russian is more susceptible to the borrowing process than Polish. That is why a short diachronic overview of automotive borrowings in Russian is worth presenting. E. I. Golanova

[13] Automotive borrowings are often applied to concepts that are not native in the target language. English is usually not only the source of vocabulary but also corresponding concepts.
[14] Hayakawa, S. I. (1994): *The Penguin Guide to Synonyms and Related Words* (p. 8). London.

characterizes two main groups: 'old' borrowings and 'young' borrowings. The first ones appeared in Russian between the beginning of the 20th century and the 1930s, for example, *шоссе*, *такси*, *мотор*. The second group includes units borrowed between the 1950s and the 1970s, for example, *паркинг*, *картинг*, *кар*[15]. Starting from the 1980s the borrowing process has been developing rapidly. The demand for names denotating new real objects is still considerable.

	AmE	BrE	PL	RU
1.	Metallic	Metallic	-	Металлик
2.	Bumper	Bumper	-	Бампер
3.	Diffuser	Diffuser	Dyfuzor	Диффузор
4.	Spoiler	Spoiler	Spoiler	Спойлер
5.	LED	LED	LED	-
6.	Halogen	Halogen	Halogen	Галоген
7.	Bi-xenon	Bi-xenon	Bi-Xenonowy (bi-ksenonowy / biksenonowy)	Биксеноновый
8.	Coming home and leaving home feature	Coming / leaving home lighting function	Funkcja Coming home / Leaving home	Функция Coming home / Leaving home
9.	Box	Box	-	Бокс
10.	Molding	Moulding	-	Молдинг
11.	Multi-function	Multifunction	Multifunkcyjna	Многофункциональный
12.	Immobilizer	Immobiliser	Immobiliser	Иммобилайзер
13.	-	Isofix	Isofix	Isofix
14.	Easy entry	Easy entry	Easy entry	Easy entry
15.	Climatic	Climatic	Climatic	Climatic
16.	Cruise control	Cruise control	-	Круиз-контроль
17.	Climate control	Climate control	-	Климат-контроль
18.	Climatronic	-	Climatronic	Climatronic
19.	-	Park Assist	Park Assist	Park Assist
20.	-	Hill hold	-	Hill Hold Control
21.	CD player	CD player	-	CD-плейер
22.	Bluetooth	Bluetooth	Bluetooth	Bluetooth
23.	CD changer	-	-	CD-чейнджер
24.	Display	Display	-	Дисплей

7 Conclusion

Summing up, the first analysis - componentional - conducted at the notions level allowed to identify chains of paradigmatic relations, designate thematic groups, determine superordinate and subordinate units and systematize the investigated automotive lexicon. The obtained results might turn out to be useful while determining ultimate translation equivalents.

The second analysis allowed to identify fourteen cases of two different lexemes referring to the same real object, twenty nine word pairs with partially different forms and eight compounds (open, solid or hyphenated) written down differently in both languages. In this phase we have analyzed fifty one word pairs altogether, which makes thirty seven percent of all the investigated lexical units. Although seemingly very similar, the British English and American English automotive lexicons reveal numerous discrepancies. Thanks to broad exposure to both American and British cultures, language users are able to decode the

[15] Голанова Е. И. (1982): *Номинация в сфере автолексики*. In Д. Н. Шмелев (ed.): *Способы номинации в современном русском языке* (p. 159). Москва.

meaning of 'petrol' and 'gasoline'. However in case of less frequently used words, such as 'trailer hitch' and 'towbar', it is necessary to communicate differences to both communities.

The third analysis proved that American English and British English are important vocabulary sources for Polish and Russian automotive lexicons. The number of identified calques, partial substitutions and foreign words constitutes seventeen percent of the investigated lexis total.

The three investigations show that the presented automotive lexicon is a living and diverse microsystem. Considering the fact that it is an extremely important knowledge transfer tool[16], its further exploration is essential.

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[16] Lukszyn, J (ed.) (2005): *Języki specjalistyczne. Słownik terminologii przedmiotowej* (p. 127). Warszawa.

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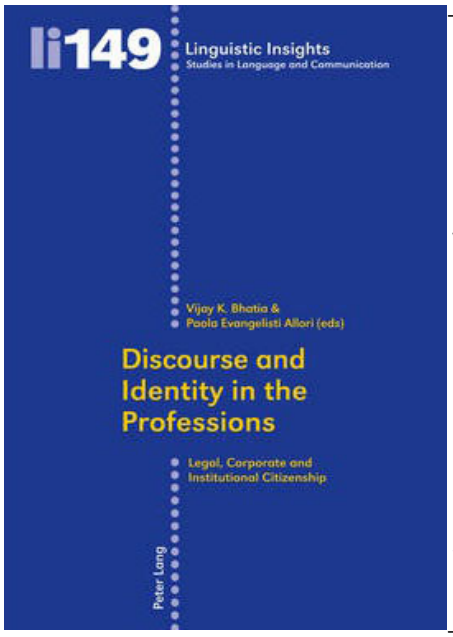
Book Review



Discourse and Identity in the Professions. Legal, Corporate and Institutional Citizenship

Vijay K. Bhatia and Paola Evangelisti Allori (eds)

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Volume 149 in the Peter Lang series *Linguistic Insights* is a collection of studies based on papers originally presented at the international conference Issues of Identity in and across Cultures in the Professional World organized within the framework of a research project (Identity and Culture in English Domain-specific Discourse) financed by the Italian Ministry for University. The focus of this collection is on the ways the in-group identity of a given professional community affects, and is affected by, the norms for communicative behaviour elaborated by the social group and followed, but also re-created, by its participants in the performance of their social practice, as exhibited in discourse. The main interest is to investigate the ways and means by which discourse is used, sometimes strategically manipulated, to make typical identity traits stand out for even or even to provide a specifically intended identity.

Discourse and communication behaviour are one of the characterizing properties, probably the most evident, or a professional community. Other definitions stress that "professional discourse is discourse produced by professionals, in professional

contexts, for professional purposes", thus relating to any domain or fields of action whenever it is used for professional purposes. A third approach is the one adopted by genre analysts, who prioritize the role of "genre" in shaping the schematic structure of the discourse and influence and constraining choice of content and style. All three frameworks are used in the studies either singularly or in various combinations. The linguistic and sociological aspects of professional identity in its multifaceted expressions are mostly investigated with the help of corpus linguistic tools.

The volume contains three sections: Corporate citizenships, Legal citizenships and Institutional and socio-political domains. In the first chapter it is stressed how corporate identity and citizenships are constructed by companies to project a positive image onto their stakeholders, spanning from how to rebuild a challenged reputation and a socially responsible identity of the company till the social identities created by motor-cycle brands. In the next chapter a number of cases, from arbitration and legal settings, analyse the difference between professional legals or professions acting as legal arbitrators in for instance sports. Overall the conclusion is that although the practice is identity-forming, the original background of the stakeholders is reflected in their terminology and choices. In the last chapter the power of language in identity building in the institutional and socio-political domains is brought to the foreground. Specific linguistic strategies are used for the purpose of stressing or denying certain aspects to achieve political objectives and set specific norms in accordance with the views of the sender of the communication.

The Insight series promote specialist language studies that focus on specific aspects of language use in one or several language. The themes of discourse and genre make up for a remarkable number of studies/volumes published in the series reflecting the fact that society is affected by the communicative behaviour of influential stakeholders who are in their turn affected by their own specific objectives in the performance of their professional practice. To understand the spin and how we are all targeted in various domains is essential to our actions and how to deal with decision-making in both business, politics and daily life.

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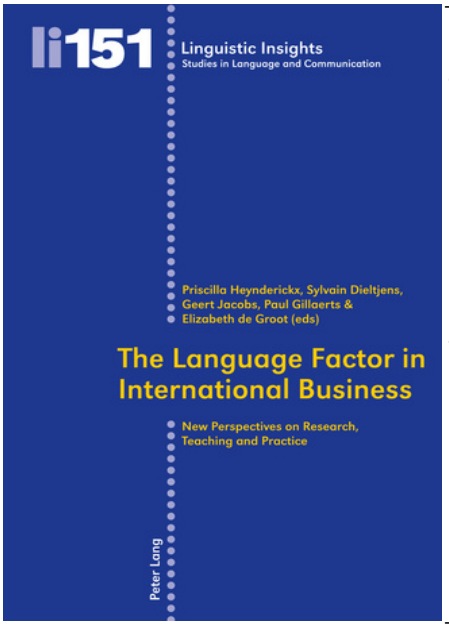

The Language Factor in International Business. New Perspectives on Research, Training and Practice.

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This volume in the Peter Lang series *Linguistic Insights* aims at providing an exploration of the field of business communication and specifically what has been accomplished to date and where it is heading. Business communication today is a field of scientific inquiry in its own right, and interaction between organizations and their stakeholders is now studied from a wide range of perspectives and on the basis of many different methods. New research is presented and it is discussed in a number of the chapters how business communication scholarship may be relevant to education and practice. The language factor in international business is more than linguistic competence in a globalized world, rather a mix of communicative skills that are incorporated in both academic and practice-oriented programmes.

The book is divided into five sections, each dealing with a specific aspect, the first

being an overview of state of the art. One chapter explores the link between research and practice and advocates for a research approach where both the design of the research and the results are communicated through non-academic journal outlets. The real life approach is developed in the second section that focuses on intercultural communication and the communication skills as parameters for improved employability. The issue of global English is approached showing that this in actual fact is not in itself a solution to intercultural communication, unless students understand the diversity of global English and the diversity of its use, not only for presentations but also for day-to-day tasks, in short as the language of communication at all levels of a multinational business. This becomes particularly important in decision-making meetings with a multicultural team communicating in the lingua franca.

Persuasive communication and CSR communication are dealt with in two sections to show how important linguistic choices are for sending a message of a particular kind in a particular setting. Finally the last section deals with the grammar of business communication, including the use of numbers.

The overall message of the articles is that a lot of research is going on for business communication and in spite of the challenges of reconciling the subject with real life as stated by one of the authors the results are rarely published in non-research oriented publications., Data are gathered in the business environment and are based on observations in companies which should contribute to easier implementation in both teaching and business. However, the Insight series does not have its target audience among managers and it is therefore unlikely that they will read these articles, although the results could be highly interesting for the daily running of an international business. So there is still ground to cover before true interaction will take place. In the meantime, some of the results will most probably be implemented in the teaching of new generations of business people who will then hopefully take this with them. But it seems a pity that these articles do not find a larger audience.

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