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Concepts and Frameworks in English for Specific Purposes

A proposal to establish epistemological foundations for the study of specialised languages

Proposition pour construire les fondements épistémologiques de l'étude des langues de spécialité

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A proposal to establish epistemological foundations for the study of specialised languages

Proposition pour construire les fondements épistémologiques de l'étude des langues de spécialité

Michel Van der Yeught

Introduction

- 1 In this paper, I propose to establish epistemological foundations for the study of specialised languages (SLs). Specialised languages, e.g. financial English, legal German or medical Spanish, have gained in global importance over the last sixty years as an increasing number of non-linguists have to use them in their professional or research activities. Among them, the demand for English stands ahead in most fields, especially in scientific, business and technical domains. Studies on these SLs have also developed in proportion and the number of teaching and research papers has sharply increased lately all over the world.
- 2 In spite of numerous notable advances and useful propositions in the field, this paper suggests that their epistemological foundations remain shaky and that the study of SLs does not yet form a structured domain of scientific research. The main problem to be solved lies in the puzzling relationship that SLs establish between the language and their “specialities” or specialised domains. This issue has been identified long ago, ever since the study of SLs emerged, but it does not seem to have been addressed thoroughly enough to provide solid foundations for research in the area.
- 3 The paper first examines why available definitions and approaches of SLs fall short of expectations in providing a satisfactory building ground on which their study could be established. Because of the global reach of English in many professional and research activities, a special focus is put on “English for Specific Purposes” (ESP), the generally

accepted umbrella name given to the study of “specialised Englishes” in English-speaking countries. In this part, I show that most perceptions of SLs characterise them by the circumstantial conditions of communications where they are used and I argue that these approaches, although true in their observations of these language phenomena, cannot deliver what would be necessary to develop a robust scientific field of knowledge. From these developments, I draw the conviction that the general linguistic angle of approach should be reversed and that the organising principle of a theory of SLs should not be found in language but in the notion of specialisation.

- 4 In the second part, I develop this premise and I suggest that specialisation can be interpreted as a form of philosophical intentionality. Hence, I progressively derive interconnected descriptions of specialised domains, specialised communities and specialised languages. The third part, devoted to a study of the functionality of SLs, shows that much in the pragmatic approach to linguistics is relevant to distinguish specialised from general language. The notion of “specialised encyclopaedia” is proposed to account for the competence of interpreting coded specialised messages in social and historical contexts. The discussion section examines the debatable character of the theory, the issue of the amount and nature of specialised knowledge to be mastered by teachers, and the legitimate use of specialised fiction (FASP). The ultimate purpose of the paper is to pave the way for methodical descriptions of SLs and to structure disciplinary knowledge for transmission to future generations of teachers and scholars.

1. Local conditions and objective knowledge on specialised languages

1.1. Approaching the nature of specialised languages from circumstantial communicative conditions

- 5 Specialised languages have received many definitions over the years. Yet, the ones we generally come across approach these languages from the circumstantial conditions where they are used for communication. They are characterised by who uses them (specialists), when they are used (in specialised communication), and why they are used (to convey specialised information).
- 6 The two following definitions broadly exemplify these “conditional” approaches. SLs are characterised by the “sphere of communication”, “the subjects” conveyed, the “intentions” of the actors and the “conditions” of use:

Specialised languages: a generic phrase describing languages used in communication situations (oral or written) which imply the transmission of information that pertains to a particular field of experience. (Galisson & Coste 1976: 511; my translation)

By LSP [Languages for Specific Purposes] we understand a complete set of linguistic phenomena occurring within a definite sphere of communication and limited by specific subjects, intentions, and conditions. (Hoffmann 1979: 16)

- 7 Similarly, the following definitions exemplify characterisation by users and purposes:

Special languages, or more precisely special subject languages, are usually thought of as the means of expression of highly qualified subject specialists like engineers, physicians, lawyers, etc. and are often derogatively referred to as ‘jargon’: The fact that humbler occupations like nursing, book-keeping and cooking and even hobbies

also involve special areas of human interest and therefore also require and indeed have their own special languages is much less often acknowledged. (Sager *et al.* 1980: 3)

[specialised languages] are the basic instruments of communication among specialists. Terminology is the major aspect which differentiates specialised languages from the general language but also the different specialised languages. (Cabr 1998: 90; my translation)

- 8 A French expert in SLs, Pierre Lerat, also illustrates this circumstantial approach. He defines an SL as a “natural language regarded as a carrier of specialised knowledge” (1995: 20); as “the use of a natural language to account for specialised knowledge” (1995: 20–21); and as “a language in a situation of professional use” (1995: 21; 1997: 1; my translations).
- 9 Similarly ESP features this circumstantial approach. In *The Handbook of English for Specific Purposes* published in 2013, a work of reference for the ESP community (hereafter *The Handbook*), ESP is defined by its conditions of use as “the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain” (Paltridge & Starfield 2013: 2). Yet, compared with other approaches, ESP has taken this conditional logic particularly far by developing sophisticated methods to take circumstantial determinations into account in order to adapt language learning and teaching as closely as possible to learners’ needs. Indeed, refined needs analyses detail the conditional requirements of language teaching and learning and are the building blocks on which language specificity is based.
- 10 While I readily admit that these definitions and approaches aptly describe the phenomena of SLs when they are put to communicative use, I think that their capacity to characterise SLs’ core nature as an object of knowledge is not satisfactory from an epistemological point of view. More explicitly, the “specialised” nature of SLs, i.e. the central feature by which they differ from general languages, seems to me ill-defined if its characterisation only derives from the circumstances where these languages are used. To clarify this objection, I turn to an Austrian epistemological philosopher, Karl Popper, and make use of his theory of the three worlds.

1.2. Popper’s three worlds and the study of specialised languages as objective knowledge

- 11 Karl Popper (1902–1994) developed his theory of the three worlds in various works, including chapters of *Objective Knowledge* (1994 [1972]) and his Tanner Lecture, *Three Worlds*, delivered at the University of Michigan in 1978. He argues that three different orders of reality, which he calls “three worlds”, coexist:

[...] the first is the physical world or the world of physical states; the second is the mental world or the world of mental states; the third is the world of intelligibles or the world of *ideas in the objective sense* [...]. (1994: 154; Popper’s italics)
- 12 In Popper’s view, the three worlds are largely autonomous although world 2 stems from world 1, and world 3 from world 2. However, one of the crucial differences between worlds 2 and 3 is that world 2 mental states are attached to people and their real life experience whereas world 3 knowledge is “exosomatic” (1994: 120), i.e. it comprises abstractions which exist outside people’s bodies. Popper calls them “knowledge without a knowing subject” or “objective knowledge” or “objective thought content” (1994: 109, 111, 156). On the other hand, world 2 knowledge remains

attached to people's "thought processes", i.e. to particular subjects. Popper calls it "knowledge in the subjective sense" (1978: 156):

I suggest that we must distinguish between world 2 *thought processes* and world 3 *thought contents*. The thought processes are concrete, in the sense that they happen to certain people on certain occasions; at a certain place and at a certain time. (1978: 160)

- 13 Popper's theory helps us to understand the limited relevance of characterising SLs by the circumstances where they occur. These determinations place them in the second world of subjective knowledge because they remain attached to their local conditions of existence. In other words, if an SL only appears when specialists communicate, the presence of these specialists is a prerequisite for the language to exist; and it fails to exist when no specialist uses it. The same demonstration applies to the various external circumstances that are selected to characterise SLs: sphere of communication, conditions of use, intentions, etc. If they are only defined by their conditions of use, SLs cannot exist autonomously as world 3 objects of study.
- 14 This observation emphatically applies to the linguistic knowledge produced by ESP. It is purposefully aimed at real learners and is designed to meet real needs. It is clearly based on concrete world 2 thought processes which develop in certain life contexts. The increasing sophistication of needs analyses to adjust teaching accurately to the requirements of learners only roots the resulting knowledge deeper into world 2 and further from world 3. Indeed, the more specific the needs, the more particular the answers and the more subjective the knowledge. Although English for engineering or accounting clearly serve engineering and accounting "specialities", the very choice of "specific" instead of "specialised" in the name "English for 'Specific' Purposes" deliberately anchors the resulting knowledge in world 2 and precludes the development of world 3 knowledge in SLs.
- 15 I readily admit that, as a consequence of this conditional approach, ESP has produced an impressive amount of valuable second world teaching knowledge to meet learners' needs: for example in English for business, medical or legal purposes. However, this need-driven knowledge has not been consolidated nor generalised along more abstract notional lines to produce world 3 knowledge that could be accumulated and passed on to future teachers and scholars. As far as I know, there are no methodical descriptions of legal or medical English available for study by would-be practitioners and researchers. As recently as 2013, Diane Belcher recognised in *The Handbook* that knowledge building and transmission for ESP teachers remain inadequate:

What we do know about the education of those interested in specific-purpose-driven teaching is that there is little preparatory course-work available. Very few programs in Teaching English to Speakers of Other Languages (TESOL), applied linguistics, or language education offer ESP as an area of specialization, though relatively more provide elective classes in the ESP approach. Given the limited formal ESP pre-service options, it is no surprise that ESP professional education has not been a popular research topic [...]. (2013: 544)
- 16 In a strikingly prescient way, John Swales provided a similar critical analysis of ESP's conditional and local short-termism in a 1983 plenary lecture. Remarkably, he developed a logic akin to Popper's worlds 2 and 3:

Yet, despite 20 years' work in ESP and despite the large number of descriptions and discussions of its theory and practice, ESP practitioners in my experience tend to ignore the past. [They] are concerned with the 'here and now' of their own working situation; in general, they do not look across to see what other people in similar

situations are doing and they do not look *back* to see what people in their own or other situations have done. [...] By locking ourselves into the 'here and now' there are lessons that are not learnt, there are insights that are not gained and there are short cuts that are not made. [...] At this point, it may be objected that such historical information is of little value to the hard-pressed ESP practitioner. However, I would answer this objection by suggesting that background knowledge is useful, perhaps even necessary, if we are to distinguish *local* solutions from *general* conceptual developments [...]. (1983: 2–3: Swales's italics)

- 17 It is clear that the notions of 'here and now' and 'local solutions' point to a Popperian-like second world while his "*general* conceptual developments" hint at some world 3 of a more objective type of knowledge. The passage "there are lessons that are not learnt, there are insights that are not gained and there are short cuts that are not made" means, as I see it, that tailoring language teaching to ever more specific needs makes it hard to generalise and consolidate teaching experience, and that this approach leads to knowledge fragmentation and hampers conceptual knowledge building. Diane Belcher's 2013 remark shows that Swales's concerns largely remain valid today.
- 18 The lack of accumulation and transmission of objective knowledge in ESP should be a cause of worry for the academic community because it does not fit properly with what is generally understood by scientific progress: scientists share results which can then be transmitted to new generations to be criticised and improved over the years. The issue is also a problem in the many countries that suffer from a shortage of qualified ESP teachers and scholars. Teaching the learners fully justifies world 2 approaches to SLs; on the other hand, teaching the teachers and scholars justifies a world 3 approach.
- 19 If objective knowledge in specialised languages cannot be adequately built on the circumstances surrounding specialisation, it follows that it has to be built on its essence, i.e. specialisation described as a world 3 Popperian object, independently from local circumstances. This is what I tentatively propose to do in the following section.

2. Describing specialisation as objective knowledge

2.1. Specialisation as a form of philosophical intentionality

- 20 The concept of specialisation has already been addressed by disciplines such as economics (firms specialise in their activities to be more competitive) and adaptive zoology (species specialise to adapt and survive), but more rarely as the general and human philosophical notion we need to clarify in order to make sense of SLs. I hypothesise that human specialisation is a mental state that entails some type of relationship between the human mind and the world. Further, I suggest that the nature of this relationship is best approached as a specific form of "intentionality" in the philosophical sense of the word – distinct from ordinary intentions as in "I intend to apply for a scholarship this year".
- 21 Philosophical intentionality has been extensively studied by John R. Searle (1983, 2004) who defines it as "that capacity of the mind by which mental states refer to, or are about, or are of objects and states of affairs in the world other than themselves", as for example when I think of the sun or that Caesar crossed the Rubicon (2004: 19, 112; see also 1983: 1). He calls it "the directedness or aboutness of the mind" (2004: 3) and underlines that intentionality always comes with an aspectual shape. In other words, "intentional states, like beliefs and desires, represent the world under some aspects

and not others” (2004: 65, 117). For example, some person may refer to a liquid we drink as “water” while another may refer to the same thing as “H₂O”.

- 22 As a rule, intentional states are rather fleeting mental dispositions, but if a person selects one object for focused and durable reference under the same particular aspectual shape, this disposition may be called a “specialised” type of intentionality because the mind forms a selective, concentrated and durable “directedness” when referring to a particular object in the world. Searle writes that “intending, in the ordinary sense in which I intend to go to the movies tonight, is just one kind of intentionality among others along with belief, hope, fear, desire and perception” (2004: 19). Similarly, I suggest that specialisation also is one such kind of intentionality.
- 23 Searle then explains that intentional states relate to the world in different ways, generally under the forms of beliefs or desires. If a person believes that an object is as it is, he develops a mental state which fits or does not fit the world, depending on whether his belief is right or wrong. Searle calls it a “mind-to-world direction of fit” because the mind tries to adapt to the reality of the world. On the other hand, he calls a desire “a world-to-mind direction of fit” since the mind aims at making the world match the content of the intentional state (1983: 8; 2004: 118). He also identifies a “null direction of fit” when no belief or desire is expressed (as when I am sorry that I stepped on your foot or when I am glad that the sun is shining) because a fitting relation is presupposed instead of believed or desired. The difference between the two former directions of fit and the null one is that the former contain their conditions of satisfaction: the belief is satisfied or succeeds if it is true, it fails if it is false; the desire is fulfilled if it gets reality to match the intentional state, or dissatisfied if not. Null directions of fit, on the other hand, have no conditions of satisfaction because no belief or desire is expressed (2004: 118–119).
- 24 From these considerations, we can derive the idea that “specialised intentionality” is a durable form of intentional state where focusing on one particular object under one single aspect is motivated by specific beliefs and desires and their conditions of satisfaction. The mind concentrates on the object because it develops about it cognitive and volitive mental states which aim at being satisfied. Conversely, null directions of fit seem to be alien to the specialisation process since no aim at knowing the object and no desire to act on it is expressed. Hence, it appears that cognitive and volitive mental states form the “purpose” of specialised intentionality which is either to know more about the object or to make it match our desires. As I see it, these two processes, (1) focusing durably on one object under one aspectual shape and (2) developing a cognitive and/or volitive purpose about it, describe the elementary and structural components of specialisation independently from local circumstances.
- 25 Searle complements his description of intentionality by writing that “intentional states do not in general come in isolated units”, they come attached to other intentional states:

If I believe, for example, that it is raining, I cannot just have that feeling in isolation. I must believe for example that rain consists of drops of water, that these fall out of the sky, that they generally go down not up, that they make the ground wet, [...] and so on more or less indefinitely. [...] [I]n general it seems that the belief that it is raining is only the belief that it is because of its position in a *network* of beliefs and other intentional states. (2004: 121; Searle’s italics)

- 26 Furthermore, intentional states also presuppose certain capacities which are not intentional states themselves, but which are necessary for intentionality to exist at all. Searle calls them “the Background” (1983: 141–159):

If you follow out the threads of the network, you eventually reach a set of abilities, ways of coping with the world, dispositions and capacities generally that I collectively call the “Background”. [...] I hold the controversial thesis that intentional states in general require a background of non-intentional capacities in order to function at all. (2004: 121)

- 27 The following sections will show how specialised intentional states similarly require networks of intentionality and background abilities to function.

2.2. From individual to collective specialised intentionality

- 28 Intentionality, as presented by Searle, describes the mental state of individual minds, and we can indeed observe that individual persons develop specific forms of specialised intentionality when they “specialise” in some form of durable activity, passion, hobby or interest. Yet, the minds of such individual specialists rarely develop SLs and we are principally interested in “collective” forms of specialisation from which SLs may emerge.

- 29 When many minds share an identical type of specialised intentionality and all durably focus on the same object under the same aspect, a collective form of specialised intentionality develops. History provides noteworthy instances of transitions from individual to collective intentionalities when pioneering individual intentionalities turn into collective ones after being adopted by many followers. For example, the intense private interests of Carl von Linné for plants and of Frederick W. Taylor for worker effectiveness can be seen as individual specialised intentionalities that came to be shared by many and evolved into collective ones (and eventually into specialised fields in their own right, respectively modern botany and scientific management).

- 30 If we now pause to relate these advances to Popper’s theory of the three worlds, it appears that specialised intentionalities, whether individual or collective, belong in his second world of subjective mental states because they stem from the real minds of real people. In that respect however, an interesting refinement to Popper’s theory is proposed by Geoffrey Leech and it may help us to gain in analytical accuracy. While admitting much in Popper’s approach, Leech suggests that Popper’s world 2 should be broken into two distinct worlds, namely a world of mental *individual* subjective objects or states (which becomes world 2) and a world of *societal* objects and states (world 3; my italics), thus making of Popper’s world 3 a fourth world (Leech 1983: 51–56). Leech’s argument is that “the missing link, in Popper’s evolutionary epistemology, is a world of societal facts (or what Searle had called ‘institutional facts’) intervening between the second (subjective) and his third (objective) worlds” (1983: 51). Leech goes on justifying this new world 3:

This is no longer a subjective world, but rather an *intersubjective* one, for as the triangulation performed by more than one observer can establish the location of some observed object, so a number of individuals from the same social group can mutually confirm the meaning of some phenomenon which is external to all of them. (1983: 51; Leech’s italics)

- 31 Using Leech’s framework, we may infer that individual specialised intentionalities belong in the second world of individual subjective states and that collective

intersubjective ones belong in world 3. Leech's valuable distinction paves the way for the idea that collective forms of specialised intentionalities may morph into specialised social groups.

2.3. From collective specialised intentionalities to specialised domains via specialised communities

- 32 Popper (1994 [1972]: 119–120) and Leech (1983: 48–56) show how language plays a major role in the constitution of the different worlds they identify. Popper explains that the expressive and signalling functions of language contribute to the development of subjective knowledge. To this, Leech adds that intersubjective communication confirms the meaning of phenomena within social groups and accounts for the formation of institutions:

On the basis of such confirmed communicative values, there may arise social institutions such as ownership, marriage, rights, obligations: these 'institutional facts' could not exist outside a world in which the signalling function of communication has established a reality beyond the individual. The intersubjective world of social facts in turn becomes the prerequisite of the descriptive function of language. Concepts of reference, truth, and falsity could not exist outside a social world in which individuals can share and compare their descriptions of reality. (1983: 51)

- 33 Similarly, I suggest that language contributes to the development of social specialisation. Its expressive and signalling functions enable individuals to share with others their singular intentional states, their related interacting networks of intentional states and their background abilities (as detailed in section 2.1). Interpersonal communication then helps these persons to combine their related interests into collective forms of specialisation. For example, an intentional state focusing on "sick people" develops in an interacting network of other intentional states. These may contain the beliefs that sick people have bodies (and skeletons, brains, muscles, nerves, breathing, digestive and reproductive organs...) and that they suffer from injuries (and germs, poisonous plants, cold weather...). These states may also contain the desires to cure (and relieve, comfort, find treatment...). Additionally, many background abilities combine to contribute to the satisfaction of these beliefs and desires: abilities to observe, diagnose, operate, advise; together with, for instance, the abilities to communicate with colleagues and to write... These interrelated and complementary intentionalities and abilities are distributed among the members of the group depending on their personal inclinations and capacities. They converge on the satisfaction of one common purpose – e.g. cure sick people or preserve health – and form both a complex and homogeneous specialised community of doctors, surgeons, pharmacists, anatomists, etc. The resulting social institution is what we may call a medical community.
- 34 The same demonstration may be proposed for other fields such as law, engineering, banking, from which similar specialised communities may emerge... When the predominant intentional state is a mind-to-world direction of fit, the cognitive purpose of specialisation aims at the development of knowledge and produces disciplinary or scientific communities. When world-to-mind directions of fit dominate, volition-driven specialised action and practice prevail and form professional communities. As a rule, specialisation processes combine beliefs and desires in varied proportions: medical,

legal or banking specialists all need a mix of knowledge and practice to satisfy the purpose of their specialisation. As Michel Petit explains in detail, these specialised groups organise the way they operate. Particularly, they regulate their activities and the way they train new entrants in the group (2010: 10).

- 35 However, specialised communities will produce subjective knowledge as long as it remains attached to the mental representations of their members. They will generate objective knowledge solely when they produce linguistic propositions which are “exosomatic” to them (Popper 1994: 120), i.e. independent from their members’ bodies and minds. Although objective knowledge stems from mental intentional states, it becomes autonomous from them thanks to the higher functions of language – description and argumentation (Popper 1994: 119) – and can thus form fully-fledged specialised domains. In specialised domains, the beliefs and desires of singular men turn into abstract purposes which transcend the specialised communities determined by time and space that have generated them. The final purpose of the specialised domain of medicine is to cure sick men and preserve health, whether in ancient Greece, traditional China, Renaissance Europe or modern America.
- 36 That is the reason why I do not follow Petit’s definition of specialised domains:
 [...] we shall call specialised domain any sector of society built around and with the aim of exercising one main activity which, by its nature, its purpose and its specific modalities, together with the specific competences it puts into play among its actors, defines the recognisable place of this sector within society and among a set of other sectors, and determines its specific composition and organisation. (2010: 9; my translation)
- 37 While I accept much in this definition, I take issue with its major proposition that specialised domains are “sectors of society”. As far as I can see, Petit describes “specialised communities” and not “specialised domains”. Leech’s theory of the four worlds indicates that specialised domains (world 4) cannot be social actors (world 3) because their knowledge would be inseparable from them and so remain subjective. Indeed, considering that a domain is made of people would be a throwback to the medieval trade corporations where knowledge was transmitted by word of mouth down from masters to companions and apprentices. At that time, “domains” were indeed social because they were inseparable from those who mastered them. Scientific advances in the 17th century and the great encyclopaedias of the 18th century put paid to this “knowledge *with* knowing subjects” by carrying out mass transfers of subjective knowledge to the objective world, thus paving the way for the development of our modern specialised domains.
- 38 Similarly, I posit that a domain is not primarily characterised by “one main activity”, but by its purpose. Purposes are the original *raison d’être* of specialised domains because cognitive and volitive specialised intentional states determine activities and not the other way around. Activities are largely subject to time and space determinations and remain attached to persons while purposes transcend local situations and are better suited to the establishment of objective knowledge. Specialised domains are not social in nature, they are sets of knowledge and/or practices which have become independent from their originators and are harnessed to the service of one particular purpose or set of purposes.
- 39 Specialised domains represent the highest stage of the specialisation process where the higher functions of language, description and argumentation, contribute to the

emergence of the idea of truth which is a description that fits the facts and which may be criticised (Popper 1994: 120). In that respect, the invention of writing has proven decisive to develop the argumentative function of language and to create world 4 (Leech) or world 3 (Popper) objects:

[I]t is perhaps not unreasonable to suppose that the argumentative function of language could not have developed its full potential until the invention of writing. Without the means to record linguistic messages, so that addressers and addressees can be widely separated in time and space, it is difficult to conceive of the existence of 'objective knowledge' in Popper's sense, *i.e.* knowledge which exists independently of any knower. Popper's examples of such knowledge (*e.g.* mathematical knowledge, knowledge stored in libraries, scientific knowledge) all presuppose a written medium. (Leech 1983: 53)

- 40 A specialised domain is therefore the autonomous linguistic and generally written expression of a complex intentional universe. It is made of focused and durable intentional states, their related intentional networks and background abilities that combine and interact to satisfy their beliefs and desires. To shorten the definition, I propose that specialised domains are sets of knowledge and practice which transcend their originators and are harnessed to the service of one particular purpose.

3. From specialised domains to specialised languages

3.1. Subjecting communication to purpose

- 41 Among the background abilities that enable specialised domains to function, we find the capacity to create and use semiotic systems to convey meaning among specialised communities. They express the domain in signs in order to serve its purpose. For example, such systems include symbols (the asklepian is the symbol of medicine, a pair of scales represents the law, anchors indicate navies, wings air forces...) and professional attire (military uniforms, legal and academic attire...).
- 42 Yet, the most sophisticated of these semiotic systems is language and it specialises when it loads itself with the specialised intentional states of the domain. An SL is an "intentionalised" form of a natural language that puts its communicative function at the service of the purpose of the domain among specialised communities. In that respect, most scholars in the field think that the foremost function of languages for specific purposes is to enable communication. They share Ken Hyland's view that "ESP itself steadfastly concerns itself with communication" (Hyland 2013: 96). As I see it, SLs have no purely communicative functions. They are background abilities that subject communication to the purposes of the domains. Engineers communicate when they discuss the weather, but when they work to contribute to the conditions of satisfaction of engineering beliefs and desires, they use English for engineering. Specialised languages need not be highly technical or abstruse to qualify as such, the major criterion is that their communicative capacities are not deployed for communication's sake, but are harnessed to the service of the purpose of the domain. Searle clearly explains that the intentionality of the mind cannot be explained by the intentionality of language:

Language is derived from Intentionality and not conversely. The direction of pedagogy is to explain Intentionality in terms of language; the direction of logical analysis is to explain language in terms of Intentionality. (1983: 5)

The intentionality of language has to be explained in terms of the intentionality of the mind and not conversely. [...] The meaning of language is derived intentionality and it has to be derived from the original intentionality of the mind. (2004: 113)

- 43 This is emphatically the case for specialised languages and, for instance, the “discourse communities” carefully described by Swales (1990: 21–29) are indeed discourse communities because they are specialised communities in the first place. They have to share a collective set of intentionalities and their conditions of satisfaction to develop a common discourse. Swales presumably implies as much since his first criterion to characterise a discourse community is “a broadly agreed set of common public *goals*” (1990: 24; my italics); the communicative criterion (“mechanisms of intercommunication among its members”) only takes second place (1990: 25). I fully agree with him when he specifies:

It is commonality of the goal, not shared objects of study that is criterial, even if the former often subsumes the latter. But not always. The fact that the shared object of study is, say, the Vatican, does not imply that students of the Vatican in history departments, the Kremlin, dioceses, birth control agencies and liberation theology seminars form a discourse community. (1990: 25)

- 44 The purpose served by the specialised community is of course a major determining factor, but Swales underplays the criterial importance of objects of study because he does not take into account the “aspectual shape” of the object, and that intentionality first requires an object to develop beliefs and desires. So, if a community first specialises in a *shared object of study under the same aspectual shape*, it is highly likely that it will share a common purpose (or goal or objective) and that it will form a discourse community. For example, if Kremlin specialists, historians and liberation theory seminars all decide to study the Vatican under the aspectual shape of a historical phenomenon, they will presumably share the same beliefs and desires about it and are likely to form a discourse community, even if the practical probabilities of them ever working together are scant. In the last analysis, the fact that communication is subject to specialised purpose in SLs provides the rationale for founding the domain on specialisation and not on language. If indeed, “the philosophy of language is a branch of the philosophy of the mind” (Searle 1983: vii), the epistemological foundations of SLs are to be found in intentionality rather than in communication.

3.2. The social dimension of specialised languages

- 45 Studying SLs implies studying the relationships they establish between Leech’s world 4 objects (specialised domains) and world 3 ones (specialised communities). Because specialised communities are composed of the “bodies” of their members (Popper 1994: 120), they are subject to the physical determinations of world 1. Among these determinations are space and time. Thus, the geographical distribution of languages generates linguistic specialised communities (e.g. English-speaking lawyers who use a specialised variety of English [SVE], legal English). Moreover, the political structuration of human space generates national specialised communities (i.e. Canadian lawyers). These two space factors rarely frame the same territories and national specialised communities may comprise two or more linguistic communities (Canadian lawyers may speak English or French). Conversely, linguistic specialised communities may comprise several national ones (English-speaking lawyers may be British [including the sub-groups of English and Scottish lawyers], American, Australian, etc.).

- 46 These distinctions matter because languages and nations have cultural idiosyncrasies which may shape intentional states and the resulting specialised domains. Certain domains develop background abilities to avoid these cultural influences because, for example, their purpose aims at building culture-proof universal knowledge. This is generally the case for hard sciences that have generalised the use of formalised languages such as mathematics so that their various linguistic and national communities may communicate without cultural distortions in meaning. On the other hand, some domains are highly culture-sensitive. A case in point is English common law which only develops in English-speaking countries and within the English language. In that respect, a general theorem may be proposed that the culture sensitivity of a domain and of its related language is inversely proportional to its universality. For example, serving the purpose of a highly mathematical domain such as nuclear physics is theoretically insensitive to the language or the nationality of its specialised communities. Conversely, a domain such as accounting remains fairly culture-sensitive as outlooks and practices may differ widely among national communities, with significant influences on language. The feedback cultural influence of specialised domains and languages on countries is also of interest in SL studies. Some domains have deeply influenced certain nations' cultures and civilisations and have made their idiom the language of choice to approach the domain. For example, musicians have long enriched the cultural identity of Italy and have given the Italian language its prominence in the domain.
- 47 As far as the temporal determination is concerned, it implies that SLs, as all human phenomena, have a historical dimension. In that respect, the main drawback of needs analysis in ESP is that learners' needs are generally today's needs; sometimes tomorrow's, but never yesterday's. Thus, while ESP has a history of its own, the needs-analysis paradigm generally opens up to synchronicity. Yet, common experience indicates that SLs have a life of their own, that some appear as mature (e.g. medical English, legal English) while others seem younger (e.g. IT English) and that many emerge every year. As a rule, most SLs start as (Leech's) world 3 objects because they are simply the way members of a community communicate with each other in habitual specialised conversation. At that stage, members are generally more concerned with the final purpose of the domain than with its expression in language, and their awareness that a specialised language exists may take decades or centuries. Yet, there comes a time when some languages specialise out of general conversation and the need for specialised word-books, glossaries and dictionaries appears. In itself, this dictionaryisation process does not produce an SL, but it is one of the clear signs that one is in the making. Specialised dictionaries play a crucial role in transferring SLs from world 3 to world 4. Specialised words and expressions leave world 3 of personal interchange and access the world 4 status of objective knowledge. Thanks to a specialised dictionary, a complete outsider may start to learn the language of a specialised community on his own, however exclusive it may be. Objectors may argue that specialised lexis is only a small part of SVEs. This is a fair point, but we must bear in mind that, beyond their singular meaning, specialised words also convey a lot about the directness of the domain, its intentionality, its objects and their aspectual shapes and its related background abilities. Studies in the diachronic dimension of SLs and in the historical developments of specialised dictionaries are still rare (Charpy 2011: 25–42), but they should be encouraged as part of a methodical study of SLs.

3.3. The functional dimension of specialised languages

3.3.1. The pragmatic analysis of specialised functionality

- 48 Because specialised languages serve the purposes of domains, they are functional in essence.

What is meant by a functional explanation? It means explaining why a given phenomenon occurs, by showing what its contribution is to a larger system of which it is itself a sub-system. As far as language is concerned, a functional theory is one which defines language as a form of communication, and therefore is concerned with showing how language works within the larger systems of human society. Talk of purpose, ends goals, plans also presupposes functionalism. (Leech 1983: 48)

- 49 Leech's explanation neatly accounts for the case of SLs. Yet, it is applied to general language and an enduring question in the field bears on the difference between general language and specialised languages. Catherine Resche wonders about the "frontiers between general and specialised language" and asks "at what point can we say that a language is specialised and what criteria can we use?" (2001: 37; my translation). I try to address the issue by resorting to an example. Suppose sentence [1]:

[1] There are many bears in New York and London zoos; but in 2007-08 the most dangerous bears were in Wall Street and in the City.

- 50 The casual reader basically understands what the sentence says, but remains unsure as to what it means, especially in the passage following "but in 2007-08": bears in zoos are familiar but not in financial centres. Nothing in the grammar of the sentence hints at specialisation and general semantics does not really help. We find ourselves in a situation where the conceptual arsenal of pragmatics is of great help (see Leech 1983: 35-45, 13-14, 176). Interpretation here presumably involves the "context of the utterance" and takes the form of a "problem-solving" exercise. The addressee's task is to understand the "goal of the utterance", i.e. the meaning intended by the addresser. The interpretation process takes a "heuristic form" in that the addressee must use a trial-and-error method to form hypotheses and check them against available evidence. Eventually, among likely hypotheses, one will tentatively connect "bear" with Wall Street and the City, and scrutinising the "specialised" entry for bear in an advanced reader's dictionary will reveal that it is a pessimistic investor who expects to speculate on falling prices ("Compare bull"). This decoding key will be found fairly "felicitous" as it introduces some consistency in meaning.

- 51 The correct interpretation of this single word is enough to tip the utterance over from general to specialised language. It summons the whole intentional universe of stock market finance which intervenes as an overall "presupposition" (Grice 1991: 269-282) which pre-determines interpretation. In general English, Wall Street and the City could be places of tourist interest just like the zoos mentioned in the passage. Here, they definitely represent the specialised communities where "bear" makes sense and they confirm that the talk-exchange is taking place in the specialised domain of the stock market. In order to understand the utterance, the addressee must cooperate with the addresser, i.e. resort to the "cooperative principle" (Grice *ibid.*: 28-31; Leech *ibid.*: 79). Here, cooperating means accepting the specialised domain of stock market finance as the relevant "context of the utterance". In doing so, the addressee has access to the "purpose" of the utterance or what is called the "illocutionary point" in pragmatics

(Searle & Vanderveken 1985: 13–15). This illocutionary point conveys the beliefs and/or desires of the addresser within the domain’s intentional universe, which means that it stems from the purpose of the domain and is itself specialised.

3.3.2. Introducing the notion of specialised implicature

- 52 At that stage, the addressee is able to form a broadly satisfactory interpretation of the utterance, but why financial “bears” can happen to be more dangerous than their plantigrade namesakes remains unclear. Further trial-and-error research in the “context of the utterance” (i.e. the domain, the specialised community, the related background abilities together with space and time factors) reveals that “bears” often resort to short-selling techniques to make money on falling prices and that these speculative methods have repeatedly been perceived as dangerous by stock market authorities and often banned as a result. The fact that financial “bears” may be as dangerous as wild beasts is therefore “implied” in the utterance and may be analysed as a specialised form of “conventional implicature” (i.e. directly derived from the meaning of the words as opposed to “conversational implicature”; see Grice *ibid.*: 25–26 and Leech *ibid.*: 11). Specialised implicature is common in SLs and can be analysed in pragmatic terms.

3.3.3. Introducing the notion of specialised encyclopaedia

- 53 A final question has to be addressed: why were bears particularly dangerous in 2007–08? Further contextual trial-and-error research identifies these years as the climax of the subprime crisis when short-selling bears made fortunes on the death throes of prominent investment banks and precipitated their downfall (e.g. Bear Stearns in 2007 and Lehman Brothers in 2008). So much so that short-selling was regarded as a serious threat to the survival of the financial markets by the American and British authorities and was temporarily banned at the time. The analytical outcome is that an apparently unspecialised sentence yields a highly-specialised meaning and requires a highly-specialised interpretation. If the addressee fails to cooperate with the addresser, his likely answer will remain general, puzzled and external to the intentional universe of the domain; something like [2]:

[2] Really? I did not know there were bears in Wall Street and in the City.

- 54 Conversely, if he can cooperate, his answer will probably be highly specialised as in [3]:

[3] Quite so. John Paulson and his friends nearly finished western market finance at the time.

- 55 Answer [3] bears little apparent connection with the addresser’s surface formulation in [1]. While [2] is a reply to what [1] says, [3] is a reply to its pure meaning, the specialised illocutionary force of the utterance. Now, [3] suggests that the felicitous interpretation of [1] implies some prior knowledge that the addressee shares with the addresser. Vijay K. Bathia insists on the role played by prior knowledge that enables insiders to understand specialised messages. He calls it “specific disciplinary cultures”, “prior knowledge of disciplinary or institutional conventions”, “existing knowledge” or “pre-knowledge” (2004: 186–188). Here, prior knowledge is both linguistic – it successfully uses the language game “bear (animal)/bear (speculator)” – and extralinguistic – it is able to connect the language game to an aspect of the specialised domain and to history. Referential connections of this type are unpredictable and

potentially infinite. Language actors cooperate successfully when they can adapt their prior knowledge to the countless contextual requirements of interpretation. I suggest that the competence to make successful interpretive use of such connections is “encyclopaedic” in nature as it may draw from an infinite amount of knowledge.

- 56 I borrow the notion of “encyclopaedia” from Umberto Eco (1986: 68–86) and from Jean-Jacques Lecercle (1990: 140; 1999: 202–204, 211) and I suggest it might be adapted to specialised domains. Eco contrasts dictionaries, which merely apply semantic labels to words, with encyclopaedic knowledge which is required every time a given text is to be interpreted. In the interpretive process, encyclopaedic knowledge operates as a set of instructions that properly insert textual elements in their relevant contexts and achieve the correct disambiguation of terms (1986: 68). It feeds on structured knowledge and culture but is different from both. It represents the infinite potentialities of interpretive processes that can relate any element to any other in any imaginable order.
- 57 In 1990 and 1999, a French literature and linguistics scholar, Jean-Jacques Lecercle, revisited Eco’s concept of encyclopaedia to adapt it more closely to literary interpretation. Yet his elaborations fittingly accommodate specialised domains. For Lecercle, encyclopaedias “provide contextual meaning and deal with pragmatic interpretation” (1990: 140). They are linked to sets of contexts, that is, to cultures, and to sets of beliefs and knowledge held by speech communities or social (religious, ethnic, professional...) subparts of them. They provide “the link between the abstract system of language and the extralinguistic, not so much ‘the world’ itself as the lived and partly structured world of a culture”. They offer a capacity to understand historical hints and allusions. They are naturally diachronic and use figures of speech like metaphors and language games (1999: 202–204, 211).
- 58 Following Eco and Lecercle, I propose that the “pre-knowledge” required to interpret coded specialised discourse is similarly encyclopaedic and that specialised domains and languages contain specialised encyclopaedias that facilitate interpretations.

3.4. Concluding on the difference between general and specialised language

- 59 The likely answer to Catherine Resche’s question is that the difference between general and specialised language lies in the intentional universe that is conveyed by the discourse. Once the intentionality and its purpose are specialised, the language expresses the related domain and serves its purpose. In [1], one single word (“bear”) expresses financial specialisation, but it is enough to contaminate the whole utterance and harness its illocutionary force to serve the purpose of the domain. It follows that the frontiers between general and specialised language are mostly porous. Since specialisation does not automatically result from the complexity or abstruseness of the language surface, nor from the quantity of the technical words used in the discourse, the same utterance may accommodate an infinity of specialised domains or, indeed, specialised and non-specialised language. The only condition is that context-shift indicators facilitate the passage from one context to the next to eliminate the opacity resulting from the multiplicity of competing intentionalities and purposes. Stephen Levinson explains how “presupposition triggers” function in conversation (1983: 181–185) and I suggest that “specialised presupposition triggers” operate in the same way in

specialised discourse. The final analytical say on these language frontiers lies in pragmatic rather than grammatical linguistics because pragmatics relates the functional mission of the language to the social environment where it is used. In Leech's words:

If we now return to the distinction [...] made between grammar and pragmatics, it can be seen that the grammar is a 'World 4' phenomenon and that linguistics is unique, among scientific disciplines, in that it aims to provide *World 4 explanations of World 4 phenomena*. [...] Pragmatics on the other hand, deals with the relations between language as a World 4 phenomenon, and language as a World 3 (social) phenomenon. Grammar, studying language as a thing in itself, provides formal explanations. Pragmatics, studying language in relation to society as a whole, aims at a functional perspective. (1983: 55–56; Leech's italics)

4. Discussion

- 60 Discussing the epistemological foundations of SLs and this particular approach could prove to be an infinite subject. I shall limit the scope of this section to addressing briefly three issues, one general and two specific.

4.1. On the debatable use of this paper

- 61 I suspect most readers will be disconcerted by this paper and will wonder about its use in improving the way we teach SLs. While I understand their qualms, I believe that meeting the needs of learners without meeting those of teachers and scholars leaves the job half-done and that building some objective knowledge about SLs will sooner or later come to be seen as indispensable. When other scholars finally decide to grapple with the issue, they will probably have to find some organising principle in the field of knowledge under construction and they will face the same problems as I have. My own proposition is that combining epistemology, the philosophy of intentionality and pragmatics offers interesting insights on how to build foundations for the study of SLs. While I am ready to admit that my approach may be misconceived, I encourage authors to come up with alternative theories to debate and progress.

4.2. How much specialised knowledge are SL teachers supposed to know?

- 62 The issue of the quantity and quality of specialised knowledge that SL teachers have to master has long been debated in the field. Teachers have to position their own knowledge input in relation to the knowledge of the domain and many are loath to step on the turf of specialists and pretend to master their knowledge. In 2004, Bhatia remarked that "ESP practitioners still get nervous about having to deal with disciplinary knowledge as part of linguistic training" (*ibid.*: 204) and, as recently as 2013, *The Handbook* recalled that "[o]ne of the most vexing issues for ESP praxis is the need for at least some specialist knowledge" (Belcher 2013: 545).
- 63 My answer is that SL teachers are not concerned with the specialised competences of the domain, but with the expression of the specialised domain in the language. By specialised competences I mean the set of knowledge and/or know-how directly involved in the implementation of the purpose of the domain. These competences

enable the doctor to diagnose, prescribe and cure, the judge to examine cases and pass judgement, the engineer to build machines, etc. These competences are acquired by study and/or experience and they precisely characterise the domain's specialists who master them. They are out of the language teacher's area of intervention although general knowledge about them is of course recommended.

- 64 On the other hand, the expression of the specialised domain in the language comprises the countless linguistic means used by domains to serve their purposes and they are the teacher's domain *par excellence*. They form the main subject matter of the methodical description of any specialised variety of a language. Such a description would include an introduction to the intentional universe of the domain and its purpose and to its specialised linguistic and national communities. It would outline its diachronic evolution, including dictionarisation processes if any. It would list and examine the different ways the domain accesses the language to insert its own specialised illocutionary force into communication: specialised lexis, terminology, phraseology, specialised discourse, genres, registers, specialised fiction... The study would examine the culture of the domain to determine if the latter is culture-sensitive or not and will tentatively chart its encyclopaedia.
- 65 Specialised encyclopaedias facilitate coded interpretation, and they may be defined as all potential knowledge necessary to interpret a domain's specialised communication. As such, they cannot be exhaustively described although interest in the question is emerging (Resche 2013). Tentative charting of specialised encyclopaedias will offer teachers and scholars enhanced capacity to interpret specialised communication and should be included in SL studies.
- 66 To conclude on this point, I do not follow authors like Laurence Anthony (2011) who advocate minimal specialist knowledge for SL teachers. I believe that ignoring SL content and history prevents access to their encyclopaedias, and will result in limited comprehension of specialised communication and poor interpretive capacity of insider messages.

4.3. Is FASP specialised language?

- 67 Specialised fiction, called *fiction à substrat professionnel* (FASP) in France, has proved a popular research topic among French SVE practitioners since Michel Petit and Shaeda Isani opened it at the turn of the century (Petit 1999; Petit & Isani 2004). It appears as "literature for specialised purposes", a name proposed by Alan Hirvela, in *The Handbook* (2013: 89). FASP refers for example to medical, legal or financial thrillers where specialised environments play a central role in the plots. Petit suggests that they offer "another access to specialised varieties of English" (1999), but objectors claim that FASP is not authentic material and should not be used to teach SLs. This is an interesting theoretical debate. Can the present epistemological approach offer insights?
- 68 My first answer is that FASP cannot be part of a specialised domain because it is based on a "null direction of fit" in relation to the objects of the domain (see section 2.1). For example, medical FASP presupposes that medicine exists. It contains no direct belief or desire concerning the objects of medicine and does not serve its purpose. Students in medicine and law do not read FASP to train as doctors and lawyers. Similarly, FASP discourse is not part of specialised discourse for the same reason: it does not convey

the intentionality of the domain and its illocutionary force serves narrative fiction, not a specialised purpose.

- 69 Yet, FASP works often provide a highly accurate *mimesis* of domains and SLs. As they are generally produced by talented insiders, they evoke specialised communities and cultures in scrupulous detail. Authoritative introductions to specialised worlds are not always available to SL teachers and learners and they should not be lightly brushed aside. Yet, the foremost merit of FASP is probably that its enticing verisimilitude is based on the authors' thorough mastery of specialised encyclopaedias which are part of specialised domains. I even suggest that FASP plots are essentially fictionalised encyclopaedic knowledge because they rely on an uncanny capacity to produce a discourse made of a large quantity of cross-connecting references. These close-knit networks of meaning relate fictional characters to the domain, but also to historical contexts, sometimes invented, sometimes real. They stimulate specialised questioning and interpretation and offer a valuable, albeit indirect, access to specialised encyclopaedias. Some FASP productions even contribute to social debates in relation to domains like medicine or law, and they edge close to their intentionalities since these debates often take place within the specialised communities themselves. Finally, FASP authors often carefully follow the evolutions of specialised domains and they promptly adopt linguistic innovations. If we add that many teachers also enjoy FASP teaching because of the motivating experience it offers to learners, we have a strong case to use FASP in SL teaching and its study should be part of the objective knowledge developed on SLs.

Conclusion

- 70 This paper proposes theoretical foundations for the study of SLs. As a methodological prerequisite, it uses Popper's 3 and Leech's 4 worlds theories to distinguish carefully between the different orders of reality where relevant phenomena belong: SLs in social interaction, specialised communities, SLs as objects of study, specialised domains... In an admittedly controversial move, it does not opt for language as the initial organising principle of the theory, but for the concept of specialisation instead. Drawing from the philosophy of intentionality, it analyses specialisation as a form of intentional state and successively derives from it the notions of specialised purpose, individual and collective specialised intentionalities, specialised communities, specialised domains and SLs. The theory then capitalises on the complementary philosophical and linguistic propositions of K. Popper, G. Leech, J. Searle and P. Grice to suggest that the functional nature of SLs is best envisaged through pragmatic analysis. Specialised pragmatics offers precious insights into the nature of specialised communication but it remains crudely simple compared to conversational pragmatics. Once a specialised context of utterance has been identified, specialised conventional implicature subjects interpretation to the purpose of the domain and specialised pragmatic meaning is pre-determined until contextual change is signalled. The theory helps to establish the primacy of specialised purpose over communication *per se* and contributes to understanding the difference between general and specialised language. It offers insights into the issue of the specialised knowledge that SL teachers should master, including specialised encyclopaedias, and on the specialised nature of FASP. The main purpose of the theory is to structure the field as a scientific discipline and to pave the way for the methodical

description of SLs. It aims at building objective and cumulative knowledge that can be passed on to future scholars and teachers in the field. It is based on the observation that the training of SL teachers falls dramatically short of expectations and needs in many countries, and on the belief that building objective and constantly updated knowledge will make a significantly positive difference in SL research and training.

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ABSTRACTS

The aim of this paper is to propose epistemological foundations for the study of specialised languages (SLs) which have gained in global importance over the last sixty years. In spite of notable advances in the field, the paper suggests that their theoretical foundations remain unsatisfactory and that objective knowledge on SLs cannot be properly built, accumulated and passed on to future teachers. It proposes not to found the domain on language, but on the notion of specialisation which it interprets as a form of philosophical intentionality. From this premise, developments examine specialised domains, communities and languages and capitalise on the advances of pragmatics to account for the functionality of SLs. On these foundations, methodical descriptions of SLs are expected to be built and disciplinary knowledge structured.

L'objectif de cet article est de proposer des fondements épistémologiques pour l'étude des langues spécialisées (LS) qui gagnent en importance dans le monde depuis soixante ans. Malgré des avancées notables dans le domaine, l'article suggère que leurs fondements théoriques restent insatisfaisants et que du savoir objectif sur les LS ne peut être correctement construit, accumulé et transmis aux futurs enseignants. Il propose de fonder le domaine non sur le langage, mais sur la notion de spécialisation qu'il interprète comme une forme d'intentionnalité philosophique. De ces prémisses, des développements successifs traitent des domaines, des communautés et des langues spécialisés et utilisent les avancées de la linguistique pragmatique pour rendre compte de la fonctionnalité des LS. Sur ces fondements, il est espéré que des descriptions méthodiques des LS pourront être construites et le savoir disciplinaire structuré.

INDEX

Keywords: intentionality, specialised community, specialised encyclopaedia, specialised language, specialised pragmatics, specialised variety of English

Mots-clés: intentionnalité, communauté spécialisée, encyclopédie spécialisée, langue spécialisée, pragmatique spécialisée, variété spécialisée de l'anglais

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