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The cognitive function of specialized languages: educational implications

ABSTRACT. The current article explores the problem of conceptualizing specialized languages in the general body of language, and, as such, will refer extensively to the concepts described by S. Grucza (2013) based on the anthropocentric theory of language *per se*. By focusing on the cognitive function of specialized languages and evoking the principles of ecological linguistics, the necessity of integrating specialized knowledge with specialized language will be highlighted. Consequently, pedagogical implications for ESP syllabi and teacher education will be drawn.

KEYWORDS: specialized languages, ESP, expertise, CLIL, methodology: cognitive function of language, intersubjectivity.

1. INTRODUCTION: GENERATING THE MARKET
FOR SPECIALIZED LANGUAGES[1]

Due to the changing reality generated by the contribution of late post-modernism (Jameson 1991) in the field of foreign language learning and teaching, we are witnessing how increasing emphasis is being given to the

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[1] The term 'specialized languages' will be used interchangeably with the notion of *language for specific purposes* (LSP). However, for some authors the term seems to be more general (cf. Faber 2012).

teaching of specialized languages. This trend has undoubtedly been inspired by our new economic reality and the application of neoliberal polices to linguistic reality (Holborow 2015), educational policy (Biesta 2010) and, consequently, foreign language teaching and learning (van Lier 2004; Shin 2016; Shin & Park 2016; Lankiewicz 2017). Consequently, language is perceived as a commodity; a "technical skill amenable to managerial measurement" and "symbolic 'added value' to industrially produced resources" (Holborow 2015: 17). Similarly, educational authorities have promoted the economic perception of knowledge as a commodity, or a key economic resource (Drucker 1969), with the excuse of building a knowledge society, while in reality modern society seems to be less and less knowledgeable than ever.

The practicality of education, which virtually boils down to skills-training (Lankiewicz 2017), or, in broader terms, to employability, has become a guiding principle for the organization of schooling all around the world (OEDC 2008). Communication in a foreign language has been defined as one of eight key competences for lifelong learning which need to be included in educational contexts (*Recommendation of the European Parliament and of the Council* 2006). Hence, as Komorowska (2017: 25) argues, foreign language teaching requires subject-specific aims when referring to the *Common European Framework of Reference for Languages* (CEFR 2001) for teaching and learning needs. Additionally, as the author cited above points out, in most EU countries primary or secondary school curricula offer at least one content subject (e.g. Mathematics or Science) which is taught through the medium of a foreign language within Content and Language Integrated Learning (CLIL) teaching programs. Additionally, international mobility, which may also be viewed as the corollary of the dominating neoliberal doctrine, requires that graduates are able to communicate their expertise in a foreign language. As a result, in Poland both the National Qualification Framework (NQF) and Ministerial Regulations of the Core Program[2] recommend the provision of specialized language education to enable the realization of vocational tasks involving both written and oral communication in the work milieu as well as to enable the comprehension and interpretation of short professional texts (cf. Zwierzchoń-Grabowska 2015: 345).

Unsurprisingly, the demand for specialized languages was met with practical responses by educational institutions, which have been adjusting general foreign language education policy to market demands and the edu-

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[2] Rozporządzenie Ministra Edukacji Narodowej z 7 lutego 2012 roku w sprawie podstawy programowej kształcenia w zawodach [Ordinance of the Ministry of Education dated February 7, 2012 regarding Core Program for vocational training], http://isap.sejm.gov.pl/Details Servlet?id=WDU20120000184 (date of access 12.09.2017).

cational profile of students. Within the area of courses with a foreign language major, curricula have been supported by an ESP perspective or very narrowly-focused translation courses. In the same vein, certification syndicates, for example in the field of English as a foreign language, have launched new products in the form of the Business Language Certificate, or the Test of Legal English Skills, to name but two examples. This growing interest in teaching and learning specialized languages has triggered, in turn, the need for adjusting the range and focus of teacher education, and, as such, many universities and other higher educational institutions offer teacher training courses in Languages for Specific Purposes. Academia has also responded with a growing number of specialized conferences, publications and research units in order to meet market demands.

Therefore, the aim of the current article is to present a theoretical framework for the teaching of specialized languages, with a particular focus on their cognitive mediation as a constitutive function. Despite the fact that some scholars separate LSP courses from subject-matter instruction in a foreign language, here the authors, drawing on the ecological metaphor in language learning, will opt for a more integrated approach. The argument is that the cognitive function of specialized languages necessitates the inclusion of the subject-matter in both the syllabus design and teacher preparation.

2. GENERAL VS. SPECIALIZED LANGUAGE – ABSTRACT VS. REAL

The claim supporting the concept of 'specialized languages' is grounded on the conviction that it is not only a question of terminology that makes them different from 'general languages', as it was previously argued (cf. Reinhardt 1969; Schmidt 1968; Milewski 1975; Furdal 1973), since if this were so, any academic discipline or human activity would be conducive to a separate variety of language. Definitively, this would appear not to be the case, hence the existence of certain specialized languages, such as, for example, the language of sports is debatable (cf. Taborek 2012). Professional literature dedicated to language varieties underscores that a variety of language also needs to be characterized by certain linguistic features (Gregory & Carroll 1978: 5), thus in correspondence with this claim, publications dealing with specialized languages mention, among others, constitutive elements of specialized languages. These are: lexical, phonetic, morpho-syntactic, textual, or discursive aspects (Taborek 2012: 238). Hence, specialized languages may fall into many different sections of linguistic study, from formal linguistics dealing mainly with the deductive properties of language as a system in its

idealized form to functional approaches considering actual and situational language use in its sociocultural and pragmatic dimension. Additionally, cognitive linguistics, in the study of LSP, emphasizes that its "conceptual description and structure, category organization and metaphor coincide to a certain extent with crucial areas of focus in Terminology [sic], such as scientific ontologies, the conceptual reference of terminological units, the structure of scientific and technical domains, and specialized knowledge representation" (Faber 2012: 1).

The final conclusion arising from empirical studies addressing the differences between specialized and general languages is not qualitative but quantitative, which means they feature the same elements and grammar structures in different proportions (Chłopicka-Wielgos & Pukas-Palimąka 1996: 78; Berdychowska 2008), or, as others put it, they are marked by a different frequency of use of certain structures (cf. S. Grucza 2008: 187; Roeckle 1999, after Zwierzchoń-Grabowska 2015).

On considering the nature of specialized or general language, an important insight may be gained from the anthropocentric vision of language worked out by F. Grucza (2005) and elaborated by S. Grucza (2010). This concept draws on the work of a Polish linguist, J. N. Baudouin de Courtenay, who claimed that real language is the property of individual minds and souls, and this idea can be juxtaposed with a vision of an idealized version of language in the abstract sense of a sociocultural monument passed from generation to generation, as famously claimed by Saussure. F. Grucza (2005: 49, after S. Grucza 2010: 43) went even further and decided to discriminate between: (a) the languages of real people (*idolects*), and (b) languages in the form of intellectual constructs (ideal languages), as represented by the concept of national languages. Additionally, he states that languages which constitute a sum of commonly used *idiolects*, representing real language in use, should be referred to as *polilects*[3]. Consequently, he proposed that we need to differentiate between linguistics dealing with real language and linguistics dealing with ideal models.

S. Grucza (2010: 43), in parallel, proposes the same distinction for the linguistics of specialized languages, with the further recommendation of conducting research within the area of real languages. A tangible example underscoring the need for the use of real life LSP language was articulated by Nesi (2013), who made a call for uncovering occluded genres for LSP practitioners. According to this perspective, certain specialized textbooks and teacher practices are not informed by reality since their "discourse communities have traditionally kept them hidden from non-members"

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[3] All these terms have been translated from the original by the authors of this article.

(ibid.). She also illustrated the existence of occluded genres as follows: "In the business world these include meetings, minutes, and confidential correspondence. In the academic world these include seminars and student assignments, and even academic lectures" (ibid).

On assuming the anthropocentric vision of language that proposes the idea that the concept of language should always correspond to a personal *idiolect*, thus accentuating the ensuing correspondence between general and special languages (i.e. the knowledge of general language constitutes a potential for the faster acquisition of specialized language), Zwierzchoń-Grabowska (2015: 348–349), drawing on S. Grucza (2008), presents two clear cases supporting the need for specialized language learning and teaching: one, in which the learner has some knowledge of a general *idiolect* and wants to learn a specialized *idiolect*, and the other one, in which the learner does not know either of them. In the first situation, the learner needs to master the terminology and textuality[4] of specialized language, but is evidently supported by their knowledge of the lexis and textuality of general language, while other linguistic features stay basically the same. In the other extreme, the learner has no support from their knowledge of general language at all.

While the first situation may be representative of specialized language learning in both a native or a foreign language, the second situation may refer only to a foreign language learning context, but it still does not account for the fact that there may already be a large amount of positive transfer of terminology, a critical part of specialized languages, with English being the most conspicuous case (we need to remember that a great deal of professional terminology is derived from English). Consequently, when not knowing a foreign general language, the learner is not a *tabula rasa* if they possess professional expertise in their mother tongue. It is easy to imagine that by means of the use of pidgin language communication would be possible, as it can be observed in real life contexts. Thus, logically, not all terminology needs to be mastered from scratch. Additionally, the so-called schemata of specialized discourse in general, which reaches beyond the sentence level, is also expected to be the subject of language transfer (G. Cook 1989: 68; Lankiewicz 2005: 54–55). However, with the construct of an *idiolect* (individual language use), this model also seems to account for *lingua franca* versions of specialized languages, again with English confirming the case. The specialized language of business communication, which is carried out in Eng-

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[4] The term is a rough translation form Polish, its meaning is only inferred from its contextual use since we have not found any explanation of its full meaning. We guess it approximates the linguistic meaning of textuality, property of discourse in which successive sentences form a coherent text in contrast to a random sequence.

lish, does not represent any version of a national standard. It seems that certain domains appropriated English for their own purposes, enriching it with translingual practices (Canagarajah 2013).

Therefore, the concept of an *idiolect* as a primary platform for considering human linguistic activity (S. Grucza 2010) loses its pejorative connotation characteristic of formal and structural linguistics, in which it represented the imperfect realization of deep underlying competence, as manifested by the Chomskyan dichotomy of *I-Language* and *E-language*. The anthropocentric vision of language thus constitutes a foundation for all ecolinguistic theories (cf. van Lier 2004), which account for the fact that human cognition of external reality is "constrained by the ecological niche we have adapted to […]. In other words, language does not directly reflect reality. It simply accentuates our unique human understanding of the world; our 'world view' as it appears to us through the lens of our embodiment" (Evans & Green 2006: 48), or alternatively, language is an ontological feature rather than an instrument (cf. Wąsik 2007). In a similar vein, Lankiewicz (2013b: 23), drawing on ecolinguistic theories, also posits an *ecolect* to be an alternative notion to that of interlanguage grammar in the field of language acquisition.

3. THE COGNITIVE FUNCTION OF SPECIALIZED LANGUAGES

Van Lier (2004: 1), in his introduction to an ecolinguistic vision of language learning, highlights the function of language itself, arguing that "a school without language could not exist" and, at the same time, stresses that "[l]anguage is part of other message systems in education that are tied up with all our sensory systems, and all our memories, and all the stories we construct to create and nurture our identity" (van Lier 2004: 1). Indeed, the history of relating language to thinking has a long tradition. It is perhaps one of the most debatable areas within the realm of applied linguistics, since while psycholinguists question a close correspondence between the two domains (e.g. Pinker 1994), sociocultural studies are more vulnerable to the Whorfian Hypothesis and postulate the existence of some relationship between language and thinking, drawing on Johan Herder and Wilhelm Humboldt's view of the role of language. Thereby, socially oriented scholars maintain:

> If it be true that we […] learn to think through words, then language is what defines and delineates the whole of human knowledge […]. In everyday life, it is clear that to think is almost nothing else but to speak. Every nation speaks […] according to the way it thinks and thinks according to the way it speaks" (Herder 1960: 99–100; cited and translated by Kramsch 2008: 99–100).

Due to the brief nature of the current study, we shall only mention Vygotsky's (1978) contribution as further illustration here with regard to the medium of language for the development of internal thinking and the role of private speech, which eventually becomes inner speech "to regulate internal thought" (Mitchel & Myles 2004: 198).

The cognitive approach to language study capitalizes on this relationship, as exemplified by Lakoff's (2004) notion of frames as a means to accentuate the importance of verbal labels in shaping human thinking. A tangible example of applying cognitive theories of language to the field of specialized language is the volumes edited by Faber (2012). As she argues:

> research on specialized language texts generally limits itself to highlighting salient aspects of scientific discourse such as the use of the passive voice and the concentration on semantic information in complex nominal forms. Nonetheless, such observations, though useful, are merely anecdotic, if they are not placed within the richer context of a wider theoretical framework (Faber 2012: 1).

For her, the cognitive function of specialized language needs to be highlighted, as it refers to "the semantic load of terminological units, which designate entities and processes within a scientific or technical field. When used in specialized discourse, these units activate sectors of the specialized domain in question, highlighting configuration of concepts within the specialized field" (Faber 2012: 2). Drawing on cognitive linguistics, we may say that construals, or the notion of individual comprehension of the world pertaining to knowledge, are somehow inscribed in specialized languages.

The cognitive function of specialized languages (the creation of knowledge) is a separate function, yet somehow connected to the communicative function of language for the transmission of knowledge. Historically, the articulation of the communicative function of specialized languages enhanced the claim for their linguistic variation from general languages. In fact, some French scholars (e.g. Gallison & Costé 1976, after Chłopicka-Wielgos & Pukas-Palimąka 1996: 70) related specialized languages to their situational use and the domain of specific information transfer early on in the research literature. Specialized languages, in contrast to social dialects such as, slang, are scientifically oriented. They are most often related to an intellectual activity, which can be communicated formally or informally; nonetheless, in both cases their articulation pertains to knowledge construction and communication, which cognitive linguistics addresses by means of the metaphorical content of linguistic expressions. Correspondingly, as Faber (2012: 2) maintains, a metaphor is also an integral part of conducting science since, as she claims by evoking Halloran and Bradford (1984: 183), "no synthesis could ever be achieved, no models postulated, no paradigms

established if science relied wholly upon 'careful observation' for its theories." Science needs metaphors both for the creation of theories and their explanation, hence we might assume that a metaphor is a characteristic feature of professional terminology (a quantitative difference) and communication acts (a qualitative difference), as put forth by Widdowson (1979, after Chłopicka-Wielgos & Pukas-Palimąka 1996: 71). In turn, linguists dealing with language for academic purposes (EAP) postulate that stylistic devices convey the feeling of objectivity, logic, and its intellectual impact (Wolnina 1977, after ibid.).

The close relationship between thought and language is also stressed by S. Grucza (2010). The cognitive function[5] is an integral part of specialized language and it is here where there lies a significant difference between general and specialized language, with the latter performing mainly the communicative function (S. Grucza 2010: 54). In this respect, he reminds us of MacAndrew's view (after S. Grucza 2010: 49), who argues that "[t]he human mind needs human cognition and human cognition relies on human speech. We cannot envisage humanness without the ability to think abstractly, but abstract thought requires language. This finding confirms that the molecular basis for the origin of human speech and, indeed, the human mind, is critical." By proposing the differentiation between real specialized languages (specialized *idiolects*) from idealized, intellectual constructs in the form of, for example, *legal language* or *business language*, S. Grucza (2010: 50) recommends a focus on the former, since they refer to language used by particular specialists with the specific properties of their own brains. Yet, parallel to the concept of general *idiolects*, he uses the concept of *polilects*, which can be understood as a cross-sectional profile of all *idiolects* or a sum of all *idiolects*. Thus, the object of the study of specialized language is either a specialized idiolect or *polilect* in the sense defined above, as juxtaposed with an idealized model of specialized language. With this, he knowingly makes a close connection between professional knowledge and specialized languages. Ultimately, this position enables S. Grucza (2010: 54) to claim that even if specialized languages are not complete languages in their formal, constitutive sense (i.e. they share linguistic features with general *idiolects*), they are functionally distinct and autonomous, since one cannot translate a text formulated in one's specialized *idiolect* to any other specialized or general *idiolect* and maintain the same informative value.

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[5] The cognitive function of language may be compared to Hallidayan representational function as a means for knowledge processing. The juxtaposition of representational vs. communicative function, as two basic language functions containing all others, is also posited by Kurcz (2005).

Thus, by making it a more general concept again, we prefer to use the term "specialized languages" and while keeping in mind the anthropocentric understanding of them as *lects*, we may say that they are the property of a particular discourse community (Swales 1990: 23–26) which recruits its members "by qualification and shared knowledge of rules for the conduct and interpretation of speech" (Alkubaidi 2010: 2), but we must remember that still "within the same discipline, such as sciences, there are *disciplinary variations* (Bhatia, 2004: 11, after Alkubaidi 2010, emphasis in original). This claim seems to be further confirmed by S. Grucza (2008), who argues that there are as many objects for the scrutiny of specialized linguistics as there are disciplines and specializations within a particular linguistic community. Specialized language is, thus, discipline sensitive, and that is why Hyland (2002: 385) opposes the tendency that LSP courses should teach general skills and language features transferable across disciplines, arguing instead in favor of a focus on the cognition of "the particular subject-matter needs and expertise of learners [...] which are appropriate to the purposes and understandings of particular academic and professional communities." The relationship between cognitive and linguistic imprints in various disciplines has also been explored by Bernstein (1999) in the concept of vertical (coherent, explicit, hierarchically organized) and horizontal (segmentally organized and differentiated) discourses which represent forms of knowledge and are characteristic of the Natural Sciences versus Humanities and Social Sciences, respectively. They also reflect power relations within a particular society as well as define the mode of knowledge and subsequent discourses. This further highlights the functional difference of specialized discourses.

4. SPECIALIZED LANGUAGES VS. PROFESSIONAL EXPERTISE

There is an ongoing discussion among applied linguists and foreign language teaching methodology specialists in relation to how much the teaching of specialized languages entails professional expertise. This refers both to teacher education (with the preparation for teaching specialized languages) and LSP course organization in the sense of whether professional students should be taught relevant content explicitly during these courses or whether subject-matter should only be elicited via a foreign language as in CLIL contexts. This problem is vital for teacher education, and consequently teacher preparation for instructing LSP courses.

S. Grucza (2013: 113–118), drawing on F. Grucza (1997; 2006), further addresses the need for the explicit consideration of specialized knowledge within the context of specialized languages, accentuating the fact that lin-

guistic means of communication do not contain any knowledge *per se,* but they merely serve as the exponents of it. His other significant observation is the constructive nature of *idoknowledge*, which is the knowledge existing in the mind of an individual. Consequently, the term *poliknowledge* represents the cross-sectional logical profile of all *idioknowledges* (the use of the plural form is significant here). Expertise learning seems to be the personal reconstruction of available *poliknowledge* and, as it were, professional knowledge, similar to any knowledge, but which cannot be transferred, as it needs to be reconstructed (S. Grucza 2013: 115). This frequently cited author also posits the idea that the direct objective of the linguistic study of specialized languages should be the specialized *idiolects* of real experts and how the linguistic component helps them perform their communicative function. S. Grucza (2013: 108–112) also presents the concept of specialized language competence as a constitutive element of the so-called specialized competence, which in English might be referred to as 'expertise' (including both practical and theoretical knowledge). Specialized language competence consist of two elements: (a) the formative element, seen as an instrument for generating terminology and ultimately texts, and (b) the functional element, or the use of linguistic expressions for sharing knowledge. Apart from this, this author mentions two other components related to the linguistic aspect. These are firstly specialized discursive competence (interactional skills for carrying out written or spoken exchanges with other experts) and secondly specialized (inter)cultural competence (the paradigmatic representation of knowledge in a specialized domain as well as communication with other scientific domains or cultures).

By accentuating the cognitive function of specialized languages, S. Grucza (2013) provides for a separate property of mind which corresponds to knowledge generation, an inborn property parallel to that of language. At the same time, he refrains from defining it fully, since the cognitive competence of the mind has not been properly recognized yet, but he anticipates that the linguistic study of specialized languages will have to deal with it in the future (2013: 109). This fissure, in our opinion, may be essential for considering the relationship between language and thought, once again, since, as we can infer, this fuzzy division between specialized language (within the scope of linguistics) and specialized knowledge (within the scope of the subject domain itself) is evidently not clear cut due to the medium of language it inevitably entails. Even if language does not contain any knowledge, it is only an exponent of it, its cognitive function helps to restructure it. Thus, we may say after Vygotsky (1978) that specialized languages mediate the process of cognition and shape it. Similarly, S. Grucza (2013: 107) maintains that specialized languages are the medium for acquir-

ing knowledge, as well as its ordering, facilitating and transferring. Additionally, he claims that specialized language competence implies expertise. We may guess that in the future the linguistics of specialized languages will have to incorporate this area of psycholinguistics which pertains to the role of specialized language in cognizing expert knowledge.

In consequence, we might conclude that the teaching of specialized language is different from instruction in subject-matter knowledge, as also manifested by a large number of scholars. For instance, Zwierzchoń-Grabowska (2015: 350–351), while referring to a wide range of experts, presents at least four reasons. Firstly, he reminds us that the didactic objectives are different, since in specialized language teaching the focus is on the development of language skills, whereas the relevant expertise is to be gained in a separate teaching module. Secondly, the objects for evaluation are language skills and professional skills and knowledge, respectively. Thirdly, the different courses are taught by different professionals. Yet, as the author cited above mentions, in some cases, for example, when using a project-based method this difference may be blurred.

Basically, specialized languages are taught only as foreign languages. Yet, would anyone try to learn specialized psychological terminology without being able to support it with a proper knowledge base? We are positive that this is not the case. We take it for granted that LSP courses are frequented by experts, who need to gain specialized language competence parallel to their mother tongue, and they may already have a general working knowledge of a particular foreign language, or not. In contrast, those who do not possess professional knowledge and learn it in a foreign language are not exposed to the learning of specialized language, since they are learning subject-matter in a foreign language, which is therefore their first encounter with specialized language (Zwierzchoń-Grabowska 2015: 350). The last example calls for consideration of whether the separation of the cognitive and communicative function of language is feasible. As F. Grucza (1991: 34) maintains, any word performs a cognitive function since it means something and helps categorize and differentiate things from each other. From elsewhere, we are similarly informed that language rarely performs one function at a time, hence the claim that specialized language performs its cognitive function only after specialized knowledge has been acquired (Zwierzchoń-Grabowska, 2015: 350) would seem rather far-fetched. In relation to this, Faber (2012: 3) states that:

> Evidently, an important part of learning how to understand, write, analyze, and/or translate specialized texts is the acquisition of skills and strategies to deal with terminology that encodes expert knowledge in the specialized domain. Not

only is it a question of understanding specialized knowledge units and being able to link them to other concepts in the same or different language, but also of storing the knowledge acquired in a useful way so that it can be activated in other contexts.

Due to this, we may conclude that specialized language is a means of acquiring knowledge and systemizing it. Subject-matter knowledge is never a ready-made product, as just like language it is in the constant process of restructuring and thus, even if one has already acquired expertise and now needs the second specialized language to be able to communicate it to a different culture, the language itself will help reconfigure it since the medium is rarely an indifferent instrument. The effect of languaging on cognitive processes has been accentuated by other scholars (e.g. Swain 2006; Swain & Lapkin 2011). Furthermore, dissecting specialized and general language competences may be a doubtful pursuit in the light of the concept of multi-competence (Cook 1996).

It now seems clear that we need to take into account the fact that teaching specialized languages encompasses a spectrum of learning contexts. This includes language courses for well-informed professionals or experts, but in educational contexts it more often pertains to the formative process of professionals, in which LSP substitutes a traditional general language course. In the latter instance, the relevant expertise has not been fully shaped or framed (if it can be perceived in ultimate terms at all), thereby some content learning will also take place during specialized language classes. Moreover, considering the relationship between knowledge and specialized language, we need to take into account the specificity of a particular discipline. While vertical disciplines may be more adequate for clear-cut specialized language courses, in which professional expertise is quite arcane, the horizontal forms of knowledge, as exemplified by Humanities and Social Sciences may be more vulnerable to discursive practices, in which both knowledge and language are in the constant process of shaping.

Significantly, it is also worth considering the idea of intersubjectivity both in reference to language and knowledge. Gillespie and Cornish (2010) postulate it as a binding concept for the sciences based on interactions for understanding social behavior. Yet, they accentuate the fact that the concept has received little methodological attention in learning contexts. The dialogic nature of intersubjectivity is also reflected in its proposed definitions, which vary from discipline to discipline. In order to save space here, we may simply state that this notion is a means to counteract the postmodern solipsistic perception of reality. The authors cited above "conceptualise intersubjectivity as the variety of relations between perspectives. Those perspectives can

belong to individuals, groups, or traditions and discourses, and they can manifest as both implicit (or taken for granted) and explicit (or reflected upon)" (Gillespie & Cornish 2010: 19–20). For our needs in the current analysis, intersubjectivity stands for common sense and thus emphasizes shared cognition and consensus as being essential when shaping our ideas and relations. At the same time, language is, quintessentially, viewed as communal rather than private. Putting it simply, intersubjectivity stands for the fact that our experience, however individual, recognizes the existence of the Other, other minds or the social domain. Consequently, our personal beliefs are recast in terms of standards set by thought communities.

With reference to specialized language learning, we should therefore assume that language is basically intersubjective, as is the process of reflection too, so specialized language competence is also subject to an intersubjective process. Undoubtedly, S. Grucza's (2013: 97) theory reflects this element when he proposes that we consider "real" specialized languages; however, the term also includes the specialized language *idiolects* of individuals and specialized *polilects* in the sense of a logical cross-sectional profile of specialized *idiolects*. Nonetheless, his idea of specialized competence will need to account more fully for the relationship between specialized knowledge and specialized language in the process of LSP learning and teaching, which, as we construe it from his writing, will eventually follow.

All the above may suggest that when considering the cognitive function of specialized languages one cannot differentiate it from expertise, even if the ultimate goal of specialized language teaching is different from subject-matter teaching, as we have emphasized above. Reflection on LSP courses articulates this and Chłopicka-Wielgos and Pukas-Palimąka (1996: 73) highlight the interaction between the two domains in the context of specialized language teacher education. As they clarify, initially they idealistically supposed the existence of a clear-cut separation between specialized language and teaching subject-matter knowledge, but many years of practice provided evidence that the specialized language teacher also needs to specialize in the major discipline of their students because they are responsible for the factual correctness of their classes, as well. This is particularly important when the students do not possess adequate subject knowledge in their own language. Certainly, the teacher does not have to be an expert in the subject-matter, although they should be experts in linguistic issues and therefore know which aspects are essential in the understanding of a text written in specialized language.

Last, but not least, specialized language teaching encompasses a repertoire of genres, from more practically-oriented ones to hard-line scientific

ones and both written and oral modalities (cf. Chłopicka-Wielgos & Pukas-
-Palimąka 1996: 76; Taborek 2012: 240). This necessitates navigation through
different talk-types (Moate 2011) and for this reason, the dichotomies be-
tween specialized/general language and expertise language may be prob-
lematic.

5. CONCLUSION: PEDAGOGICAL IMPLICATIONS

The activation of the cognitive function of language would be very diffi-
cult outside the intellectual frame, or schemata, of a particular discipline
during the process of specialized language teaching courses. For the reasons
mentioned above, this pertains equally to LSP courses offered to novice
experts, in-service specialists and, even more, to students, whose expertise is
still being formatted. However, Chłopicka-Wielgos and Pukas-Palimąka
(1996: 79) have ascertained that the methodology of teaching specialized
languages is non-existent. Taking the date of the publication into account,
we may say that this statement no longer seems to be true, both with refer-
ence to the normative and functional dimensions of LSP.

By drawing on the findings of an ecological metaphor in language learn-
ing processes (van Lier 2004), as well as postulating the authenticity of voice
(Eco 2000), to our mind, the cognitive function of specialized knowledge
needs substantiation in some sort of expertise development. Attention to the
mediating function of language for higher mental processes, as defended by
Vygotsky (1978; 1998), seems to be an essential ingredient for any LSP
course, even if the ultimate focus is purely linguistic. On the part of teachers
and translators, a lack of relevant expertise renders them unable to offer
a truly authentic or authoritative voice (which is not to be confused with full
professionalism). Hence, the findings of Content and Language Integrated
Learning (CLIL) approaches may prove highly insightful for the methodolo-
gy of teaching and learning of specialized languages, and is an area for fur-
ther research in this domain. The role of knowledge or expertise also seems
to be accounted for in an anthropocentric vision of language, since language
cannot be disconnected from the user. The well-established Communicative
Approach to general language learning and teaching might also contribute
further insights, since it highlights the functional aspect of language so much
that the ultimate outcome was often the development of an unauthentic and
non-autonomous voice full of clichés and formulaic language. This is cur-
rently being addressed by proponents of the Lexical Approach in foreign
language teaching methodology (Lewis 1993; Dellar & Walkley 2016), which
is at present enjoying a revival as a means to enable language learners to

notice the workings of language more autonomously from a lexicalized grammar perspective.

The language pertaining to a particular discipline represents a different type of discourse laden with conventional syntagmatic rules (Marton 1978), so learning these rules is surely the aim of an LSP course but, at the same time, they evoke some metaphorical concepts, which are either discipline or culture specific and, thus, influence the cognitive process. By way of example, we might compare an English and Polish expression: *wysoki stopień analfabetyzmu* versus *low literacy rate*. Although these two expressions refer to the same phenomenon, they present it from a different perspective, as reflected in the proverbial phrase: "Is the glass half empty or half full?" The world view inscribed in language is the result of the multilayered relations between language, thought and culture.

Consequently, a direct methodological implication for the teaching of specialized languages, in the first place, is the identification of its contextual setting in order to know who we are teaching, or our student profile, and for what precise reason. Secondly, the teacher has to keep in mind the fact that linguistic aspects cannot be totally separated from their referential and conceptual reality. Thirdly, authenticity of use requires both authentic materials and subject-matter orientation in learning and teaching contexts, even if the ultimate learning goal is purely linguistic. Fourthly, both knowledge and language are of an intersubjective nature, reflecting their social construction, thereby specialized language needs to be substantiated with all talk-types if it is to be fully internalized (cf. Lankiewicz 2014; 2013a), Finally, a minimal level of subject-matter expertise needs to be expected from the specialized language teacher if we are to produce a recognizable, authentic and authoritarian voice, which does not necessarily mean that the teacher should instruct the actual content itself (Dudley-Evans & St. John 1998). In conclusion, this is the direction that we suggest specialized language teaching and teacher education in this area needs to follow if we are to ensure the fulfillment of our learners' needs from both a linguistic and cognitive perspective.

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