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► To cite this version:

Anne Condamines. How can one explain "deviant" linguistic functioning in terminology?. Terminology. International Journal of Theoretical and Applied Issues in Specialized Communication , 2021, 10.1075/term.20029.con . halshs-03258377

HAL Id: halshs-03258377

<https://shs.hal.science/halshs-03258377>

Submitted on 14 Dec 2021

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How can one explain "deviant" linguistic functioning in terminology?

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Abstract:

This article looks at so-called "deviant" functioning in terminology. The notion of deviancy seems to be situated in relation to a "neutral" functioning of the language, which does not take any particular communication situation into account. The article aims to show that this supposed deviancy has to be related to the communication situation itself, which, in the present case, implies specialised knowledge. Rather than just being deviancies, it is argued that these linguistic formulations are a tangible manifestation of the specificity of the communication situation. Three types of explanation are put forward for their use: linguistic (linguistic prolixity and linguistic economy), sociolinguistic, and cognitive. Each type is exemplified by various studies.

Key-words: Cognitive approach, Deviancy, Discourse community, Emotion, Experience, Specialised Discourse

1- Introduction

This article concerns "deviant" linguistic functioning in terminology in LSP (Language for Specific Purposes). While some studies concerning general language evoke variations from the standard (according to register, place, time), the term "deviant" has been used by various authors

to characterize linguistic functioning that does not conform to what is expected in a non-specialised situation (adjunction or deletion of elements, change in arguments, overuse of some categories, etc.) (see for example Lehrberger (1986) and Pearson (1998) quoted below). Even when the term "deviant" is not used, the specificities of specialised languages are characterized from an essentially descriptive perspective. In the present study, in contrast, we will approach the phenomenon of "deviance" with an explanatory purpose and will argue that these apparently deviant functionings are due to the very specificity of the situation. Linguistic descriptions (especially those concerning the lexis) are usually made for a neutral situation, i.e. without any particular context being specified. An inherent feature of specialised languages, however, is that they are characterized from the outset by a communication situation which defines a discourse community. In most cases, deviant linguistic functioning can be explained by the common interest that founds the discourse community in a specialised situation. In some recent work (Baumann 2007), this common interest has been considered to presuppose an emotional investment on the part of domain experts, manifested through supposedly 'deviant ' linguistic phenomena. In Baumann's words: "We broadly agree with the exponents of the emotional theories who define emotion as a process of appraisal and a basic determinant of LSP communication." (Baumann 2007, 328). This is the approach that underpins the present study. In an attempt to explain the correlation between "deviances" and emotions, the article successively explores three different points of view. It first evokes sociolinguistic aspects, frequently mentioned to explain the use of jargons, that build a sense of belonging to a community but that can also isolate speakers. Then, based on the results obtained by various corpus studies, the article describes linguistic features: prolixity (the addition of modifiers), and economy (the removal of prepositions and/or determiners), which can be explained either by the need to provide a fine-grained description (prolixity), or by the shared knowledge between experts (economy). The greater use of nominalizations in specialised texts is also studied and

explained. Finally, the article examines an aspect that is more rarely mentioned, which is of a cognitive nature. This aspect makes it possible to suggest an explanation, involving the emotional dimension, for the direct construction of location complements in certain situations related to sports and leisure activities.

The article is structured as follows. Part 2 reviews the work in linguistics and sociolinguistics on lexical deviance in specialised languages. Part 3 proposes an analysis and explanation of certain phenomena from a linguistic point of view (prolixity, economy and the case of nominalizations), based on corpus studies. Lastly, part 4 focuses on a "cognitive" explanation through the study of the direct construction of the place complement after "to fish". The concluding remarks sum up the main findings.

2- Linguistic deviancy in specialised contexts

Many authors have investigated the specificities of specialised languages (and especially of the lexicon) compared to the general language (among others, Cabré 1999; Sager 1990). Several speak of “deviances”, with the general language then being considered the norm.

2-1 Major studies on deviancies in LSPs

Deviant functioning in terminology has been approached especially from the perspective of sublanguage theory:

“Grammatical usage of words not only is restricted, but also deviates occasionally from normal usage outside the sublanguage.” (Lehrberger 1986, 27)

“Sublanguages differ from standard language because the lexis and semantics are more restricted than in standard language, and the syntax may deviate in some respects from the syntax of standard language.” (Pearson 1998, 30-31)

The term "deviant" refers to the fact that certain lexical, semantic or syntactic phenomena in specialised discourses are not expected in standard usage. It is then necessary to refer to a linguistic competence assumed to be shared by all the speakers in a non-specialised, i.e neutral, context. Such a perspective, even if it is not called deviant, is shared by all the scholars who study the characteristics of specialised languages. In fact, a sense of strangeness is common to any terminologist who begins working in a new field and it is even fundamental to the identification of terms.

As an illustration, we give some examples of deviancy for French (Condamines 1995):

- Use of specialised words unknown to non-specialists: *actionneur* (actuator), *étagiste* (stage integrator).
- Preposition deletion in the nominal group. This case is very frequent, particularly in technical domains: *contrôle commande* (command control), *banc simulation* (simulation bench).
- Unusual argument: *alimenter une batterie* (to feed a battery).
- Argument deletion: *déposer* (to deposit; banking domain), *monter* (to ride; equestrian domain);
- Preposition deletion in the verbal group (see below): *pêcher une rivière* (to fish a river) in angling.

Note that some of these “deviancies” have also been described for language in general. For example, an unusual argument may be a way of describing a metaphorical phenomenon which, although frequent in specialised corpora (Oliveira 2005), is not specific to them but also appears in poetry, for example, or, more generally, with a rhetorical intent (Ricoeur 1977). Argument deletion is also examined in general language studies under the name of “absolute transitive verb”, “intransitive use of transitive verbs” or “Definite object deletion” (when the object is implied but not stated) (Fillmore 1986), for example *Paul has eaten, I gave to the United Fund.*

The present paper aims to study the role of the specialised situation in this phenomenon of deviancy. In the analysis of specialised languages, the first aspect to be considered is the extra-linguistic context and in particular the shared knowledge, or at least the shared interest in a domain, between speakers and listeners. As this shared knowledge is assumed to facilitate communication and to limit misunderstanding, it must be taken into account in describing deviancy. It is crucial to understand how it intervenes and what its limits in the supposed transparency of the communication are.

2-2 Sociolinguistic aspects of deviancies in LSPs

The sociolinguistic explanation of terminological deviancy is linked to the existence of a community that shares certain interests:

“All like interests are potential common interests; in so far as that potentiality is realized community exists.” (MacLver 1970, 108)

“Specialised communities [are] defined not only by their specialised knowledge, but also by their specialised social practices, including their specialised discourse and communication [...]” (Dijk 2011, 27)

One of the main manifestations of this community of interests is the use of a common language that defines a discourse community (Swales 2016). Hymes defined the notion of speech community as follows: “a community sharing rules for the conduct and interpretation of speech” (Hymes 1972, 54). In the case of specialised languages, the common interests are linked to shared knowledge, shared actions and/or shared purposes, and more generally, the feeling of belonging to a community. These common interests give rise to common emotions - which may seem quite contrary to the supposed neutrality of experts and of specialised knowledge - particularly significant in LSPs of various sports, leisure activities and hobbies.

Thus, linguistic deviancy in specialised communities is not just the shared way of speaking but it is also a way to be integrated in the community. Conversely, if one wants to be recognized by a community, one has to adopt the language codes of that community. These language codes are sometimes considered as "jargons".

2-3 The role and implications of jargon

The word 'jargon' originally referred to the coded language of thieves, who used it to isolate their community from the rest of the world (Gotti 1999). This role of identifying insiders and outsiders of a particular community subsists in its modern meaning. As defined by the Collins dictionary, the use of jargon allows a locutor to feel part of a community:

"You use jargon to refer to words and expressions that are used in special or technical ways by particular groups of people, often making the language difficult to understand."
(<https://www.collinsdictionary.com/dictionary/english/jargon>).

Consequently, comprehending the jargon is often restricted to community members.

One of the consequences of using jargon, however, may be to lock speakers into a world view (De Vecchi 1999). This can limit creativity, for instance within firms:

"Companies that evolve a highly context specific language [...] ultimately find that their language traps them in their existing business domain." (Brannen and Doz 2012, 82)

The use of jargon can also prove daunting to non-specialists even when reading popularized texts. A very recent experiment is described in (Shulman et al. 2020). It consisted of a consultation via internet, in which three corpora concerning three specialised domains were constituted: one contained only domain-specific words (terms), another contained specific terms and their definitions, while the third was a popularized text. The 650 participants in the

study were asked to read the texts and answer questions online about their comprehension. From the responses, the authors of the studied concluded that:

“The presence of jargon disrupts people’s ability to fluently process scientific information, even when definitions for the jargon terms are provided.” (Shulman et al. 2020)

While the language constitutes one of the main building blocks of the community, it may also be a highly constraining element. When non-expert speakers encounter what seem to them to be deviancies, they may adopt a position of rejection.

3- Corpus studies of lexical deviances in specialised languages

The aspects of deviancy presented in this part are based on various studies that we have conducted on specialised corpora (Condamines 2013, 2014, 2017, 2018; Condamines and Picton 2014). In order to provide global analysis of deviances in LSPs, our study is based on three different LSP corpora : a. a corpus on exobiology which is composed of four subcorpora (devoted to astronomy, biology, chemistry and geology) used for probing linguistic prolixity, b. a corpus on space engineering composed of two sub corpora (one consisting of specialized texts and another of general press articles) used for probing linguistic economy and nominalization, and c. a corpus on angling composed of discussions collected from blogs and forums and of texts collected from websites, used for probing preposition deletion in the verbal group.

For all the aspects discussed, we insist on the fact that the deviancy observed can be explained by the involvement of experts in the situation.

3-1 Deviances explained by linguistic factors

Two apparently opposing processes are first presented, prolixity and economy. A third feature, the case of nominalizations, is then discussed in greater detail.

3-1-1 Linguistic prolixity

The term prolixity is used here to refer (at least partly) to the opposite phenomenon to the one expressed by linguistic economy, examined in section 3-1-2. It may seem surprising to talk about prolixity in relation to specialised discourse, which is generally reputed to seek brevity. While linguistic economy is achieved mainly through the deletion of elements, linguistic prolixity concerns mainly the addition of modifiers in nominal groups. It is well-known that nouns are very frequent in LSPs. Antia (Antia 2000, 159), for example, cited Hoffmann's study on the distribution of grammatical categories in specialised texts compared to language for general purposes (LGP): “for several west European languages and Russian: Nouns constitute up to 40% of LSPs while accounting for 28% in LGP, adjectives account for over 16% in LSP texts compared to 10 % in LGP [...] verbs are anywhere between a half and a third less frequent in LSP compared to LGP”. In part 3-1-3, we will examine the case of nominalization as its high frequency can explain, to some extent, the high percentage of nouns. The greater use of adjectives and also of nouns can be explained by the fact that, within a specialised discourse, terms denominate increasingly refined concepts. One of the linguistic ways to specify a noun is to add a modifier, for example a qualifying adjective, a noun or a prepositional complement. This can lead to much lengthier nominal compounds than those found in the standard language, for example *Low-energy charged particle detector*. Where a non-specialist speaker will only be able to imagine a single concept, an expert distinguishes several finer-grained concepts and these distinctions will be manifested linguistically by the addition of modifiers. For example, in space research, one can find *satellite*, *observation satellite*, *earth observation satellite*. For non-experts, the three terms are considered as belonging to the same semantic category; non-experts have an approximate idea of what a satellite is and the two modifiers (*observation* and *earth observation*) are not significant and perhaps even appear superfluous. In contrast, these

same modifiers are highly significant for a space expert as they make it possible to express the finer distinctions of the domain.

In disciplines that share the same field of observation, differences in noun modifiers mainly indicate differences in the perspectives of each of the domains. Let us take the case of exobiology. This is a recent field that involves four disciplines: biology, astronomy, chemistry and physics. They are all interested in life outside the solar system. The possible role of linguistic description in the definition of this new field gave rise to a project that was reported in a previous paper (Condamines 2014). Here, we report the case of one term, *atmosphère* (atmosphere). Even if it is a word known by every French speaker (probably with, as for *satellite*, an approximate definition), it is also a term and it even started out as a term. In the corpus built for the study on exobiology (310,000 words), composed of four subcorpora (one for each field), among the non-grammatical terms, *atmosphère* had the highest frequency with 1004 occurrences (though less abundant in biology). Concerning the adjectives following *atmosphère(s)*, a total of 51 different adjectives were found (for example: *riche* (rich), *pauvre* (poor), *primordiale* (primal), *anoxique* (anoxic), *prébiotique* (prebiotic), etc.). Among these adjectives, only two were shared by all the disciplines: *primitive* (primitive) and *terrestre* (terrestrial).

	Astronomy	Biology	Chemistry	Geology
Number of adjectives in [atmosphère(s) adjective]	31	7	12	35

Table 1: Number of adjectives in [atmosphère(s) adjective] for each of the 4 sub-corpora in exobiology

This abundance and diversity are a reflection of the fine-grained collective conceptualization (and involvement) of each of the sciences. In this case, prolixity is a response to the need to

explain the different concepts. It can become an obstacle to communication if the same concept has two denominations or if one view is not compatible with that of another discipline. This linguistic prolixity, which may seem obscure and superfluous to a non-expert, is, in the majority of cases, perfectly justified and even essential for domain experts.

3-1-2 Linguistic economy

Linguistic economy was first defined by the French linguist Martinet (Martinet 1955) who drew on Zipf's "principle of least effort" (Zipf 1949), and may be described as:

"...consisting in tending towards the minimum amount of effort that is necessary to achieve the maximum result, so that nothing is wasted". (Vicentini 2003, 38).

As noted by Andersen, one of the consequences of the principle of linguistic economy is that: "Special concepts pertaining to a specific knowledge area may be quite short, and this is often recommended in term formation." (Andersen 2007, 7).

Most of the time, the economy in the expression is justified by the fact that both speakers and hearers are assumed to share a common knowledge of the situation and they are capable of reconstructing missing information if necessary, as Sager pointed out:

"Accuracy and economy of expression can only be assured if we accept that a text containing terms presupposes the participants' prior familiarity with the appropriate definition of concepts." (Sager 1990, 108).

While this point may seem contradictory with the previous one (prolixity), a long term is not necessarily opposed to linguistic economy (because in a nominal group, the modifier is necessary to express finer distinctions). Moreover, the two kinds of phenomena (economy and prolixity) may coexist within specialised discourses. Acronyms are a perfect example of this apparent contradiction. Acronyms are used instead of developed forms (which can be very

long), for example, in space engineering: *Attitude and Orbit Control System (AOCS)*. Sometimes, in technical texts, the two forms co-exist, with the long form used first, at the beginning of the text, and subsequently only the acronym.

In general, however, linguistic economy is described in terms of the deletion of prepositions, determiners, arguments, etc.

3-1-3 The case of nominalizations

The case of nominalizations is very interesting as they are reputed to be heavily used in specialised discourses. They are considered as a way of packaging the description of reality concisely. In Halliday's terms, they are a form of "grammatical metaphor":

"Grammatical metaphor can take many forms [...] but the form which has received the greatest attention, and the one which seems to be the most significant in terms of scientific discourse is that of processes encoded in nominal form." (Banks 1999, 7).

"The grammatical metaphor allows any observation, or series of observation, to be restated in summary form – compressed, as it were, and packaged by the grammar." (Halliday 2004, 20).

As we have seen, the concern for concision is constant in LSP and especially in technical discourses, as recalled by Kocourek: "Le souci de concision constitue un facteur puissant dans la formation des phrases technoscientifiques" (Brevity is a powerful factor in the formation of techno-scientific statements). This concern often leads to "condensation syntaxique" (syntactic condensation) and to a "complexité concise" des phrases (concise complexity of sentences) (Kocourek 1991, 79). The use of nominalizations contributes to concision as they allow for the integration of two statements, resulting in a shorter but also more complex sentence. As also noted by Vendler:

"The device of nominalization transforms a sentence into a noun phrase, which can then be inserted into a bundle that fits into other sentences." (Vendler 1967, 125).

In a previous study (Condamines and Picton 2014), briefly summarized here, we examined two points concerning nominalizations in space engineering, in a project concerning determinologisation. First of all, a French corpus of documents on space engineering was built and organized in subcorpora belonging to different genres (from highly specialised to popularized). For the study of nominalizations, two of these subcorpora were compared: the most scientific one, comprising technical documents from CNES (Centre National d’Etudes Spatiales, the French National Center for Space Studies) and one composed of articles from the general press. These general press articles were selected because they contained candidate-terms obtained with Termostat¹ from the scientific corpus. The two corpora could therefore be assumed to concern the same field.

In order to spot nominalizations systematically, we used Verbaction². Verbaction contains 10,000 pairs of French verbs and their nominalizations. We also added nominalizations that were not listed in the resource by searching for nouns with suffixes such as *–ment*, *–tion*, and *–age* that are known to be characteristic of French nominalizations. Table 2 presents the results concerning the proportion of nominalizations in each corpus.

	Scientific corpus	News Corpus
Nominalizations	19 %	10 %
Other nouns	50 %	54 %
Verbs	31 %	36 %
Total	100 %	100 %

Table 2: Distribution of Nominalizations, other nouns and verbs in a scientific vs news corpus in space research

¹ Termostat is a term-candidate extractor created by P. Drouin, OLST, Université de Montréal. It is available on the site http://olst.ling.umontreal.ca/?page_id=91&lang_pref=en

² Verbaction was built by G. Dal (University of Lille), F. Namer (University of Nancy) and N. Hathout (University of Toulouse). http://redac.univ-tlse2.fr/lexiques/verbaction_en.html

This study confirmed the much greater use of nominalizations within a scientific corpus compared to a non-specialised one in the same field: there are almost twice as many nominalizations in the scientific corpus as in the news corpus (considered close to standard usage). Verbs are also less frequently used in the scientific corpus, which could suggest that nominalizations are used, in some cases, instead of verbs.

The presence vs absence of prepositions in nominal groups with a nominalization was also examined. Ten nominalizations were selected: *absorption*, *acquisition*, *alimentation*, *application*, *conception*, *émission*, *gain*, *sortie*, *télémessure*, *verrouillage* (absorption, acquisition, feed, application, design, emission, gain, output, telemetry, locking). Then, in each corpus, we looked for cases where these nominalizations were preceded or followed by a preposition, and those where no preposition preceded or followed the nominalization. For example:

application (de défense, de géolocalisation) vs *application (radar, satellite)*

(domaine d', responsable d') application, vs *sous-directeur application*.

Table 3 presents the results obtained for the two corpora.

	Scientific Corpus	News corpus
Noun + nominalization or Nominalization + noun	10.3 %	5.2 %

Table 3: Nominal groups containing a nominalization without a preposition, in the scientific corpus and the news corpus

The differences between the scientific and news corpora are clear concerning the nominalizations examined. The scientific corpus contains twice as many occurrences of a nominal group (with a nominalization) without a preposition as the news corpus. If we consider the language used in news texts to be non-specialised, then we can say that prepositions in a nominal group containing a nominalization are less frequent in scientific language than in general usage.

While the much greater use of nominalizations is no doubt partly due to the search for concision, this phenomenon may also be linked to a desire to present entities in a stable form. Nouns are considered as linguistic forms that express completed entities; they are therefore frequently used as labels or names, for paintings for example, whereas verbs are, in principle, the forms dedicated to the expression of actions. Nominalizations may be used with the aim of producing discourses that appear to be scientific.

“La nominalisation est fort utilisée pour créer un effet d’objectivation : c’est pourquoi elle est massivement attestée dans les textes scientifiques (notamment positivistes) et dans les discours qui les imitent (langue de bois)”(Nominalization is widely used to create an effect of objectification: this is why it is massively attested in scientific texts (especially positivist ones) and in discourses that imitate them) (Rastier 1995, 51).

The desire to convey the impression of stable knowledge seems to be paramount in the use of nominalizations, even if it means obscuring problematic aspects. Indeed, the heavy use of nominalizations compared to the use of verbs has at least two unintended consequences. First, contrary to verbs, nominalizations can be used without any of the obligatory arguments of the conjugated verb. For example, very often, the agent disappears with the nominalized form as in (1):

1) The installation of a component shall not exceed 60 seconds

In some cases, this can lead to inaccuracies, which is not what is generally sought in specialised discourses, in particular in technical texts. Second, it is well known that nominalizations can be polysemic. Generally speaking, the two possible meanings concern the process on the one hand and the result on the other. As a consequence, the overuse of nominalizations may also create ambiguity. For example in (2):

2) *The project leader will be responsible for the documentation*

it is not clear whether *documentation* concerns the writing of the documentation or the set of documents written during the project. In some cases, this ambiguity may lead to confusion.

These two phenomena, the overuse of nominalization and the underuse of prepositions, are two very frequent examples of linguistic economy in specialised languages but they can have unwanted consequences on readers' comprehension. Linguistic economy results from a tension between standard linguistic functioning and supposedly shared knowledge. In the case of specialised languages, the balance seems to tip in favour of belonging to a community of knowledge.

4- Deviancies related to cognitive factors

“Specialised language is an interesting area of application for Cognitive Linguistics. One might ask what is so special about specialised language, why it is different from general language, and why it is worth studying in itself.” (Faber 2012, XV).

In this part, we address a type of explanation for deviancy that is not commonly proposed, borrowing from both cognitive semantics and construction grammar. Note that the results presented in this section are a synthesis of more detailed studies developed in (Condamines 2013, 2017, 2018).

They concern a phenomenon found in the fields of sports and hobbies (which have their own experts), namely the possibility of transitivizing the location complement and putting it in the position of a direct argument, for example *to fish (a) river(s)*.

3) *To fish rivers well requires a little more experience than to fish still waters well*
(<https://fishingmagic.com/forums/threads/>)

This possibility is well-known in English and is registered in dictionaries (Collins for example), whereas in French, sentences such as (4) seem very odd to a non-angler and the construction is not mentioned in grammars or dictionaries:

4) *J'ai déjà pêché cette rivière* (I've fished this river before) (private discussion)

The question that arises with this type of example is whether the meaning of "fishing" is altered with the direct construction of the location complement. Our hypothesis is that, with this direct construction, anglers express a feeling of proximity with the river, or in other words, that it is the connection with the river that they prefer and that gives them the strongest emotions.

Our first study on this question consisted in searching the whole web by retrieving all the contexts in which "pêcher" (to fish) and "rivière(s)" (river(s)) were used, either with or without a linking preposition (*dans, en, sur*). For each context identified, we noted whether the site concerned was a site dedicated to fishing or not, and whether it was marked by a certain emotion (blog, forum...) (see Condamines 2013, 2017 for more details).

Table 4 summarizes the results for the 1474 cases encountered for French.

	Pêcher dans DET rivière(s)	Pêcher sur (DET) rivière(s)	Pêcher en rivière(s)	Pêcher DET rivière(s)

All the websites	45.6	9.2	27.5	17.7
Angling web sites with an emotional dimension	36	4	21.7	38.2

Table 4: Distribution of the French structures in all the Internet data and in angling websites that have an emotional dimension (percentages)

We had the same study done for English. Table 5 summarizes the results for the 2202 cases encountered in English.

	To fish in (DET) river(s)	To fish on (DET) river(s)	To fish within (DET) river(s)	To fish (DET) river(s)
All the websites	29.2	17.7	2.8	50.3
Angling websites with an emotional dimension	9.9	16.5	4.4	69.2

Table 5: Distribution of the English structures in all the Internet data and in angling websites that have an emotional dimension (percentages)

For the two languages, the chi-squared test showed a significant difference ($p < .001$) in the use of the preposition. Direct constructions (without a preposition) seemed to characterize fishing

websites with an emotional dimension. These results appeared to confirm the hypothesis that there is a link between the direct construction and the fact that it is encountered mainly in angling websites with an emotional dimension.

One of the French extracts was very revealing:

5) *Il est bien plus intéressant de pêcher des rivières que des poissons* (It is much more interesting to fish rivers than fish.) (message published on October 2011 on the website www.mouche-fr.com. The message is no longer accessible).

This extract encapsulates our argument exactly. When the preposition is deleted it is not just for reasons of linguistic economy but rather because the angler expresses a close relation with the river. Basically, what anglers like is the contact with the river more than just catching fish.

Associating a meaning to any change of form is part of the perspective of construction grammar:

“Grammatical constructions, like traditional lexical items, are pairings of form and meaning.”

(Goldberg 1995, 4).

For some of the proponents of this approach, linguistic constructions may be chosen in order to express an experience:

“A conceptualization or construal is simply a semantic structure for an experience. I will take ‘experience’ to refer to some aspect of the real world, or more accurately our human apprehension of it, and ‘meaning’ or ‘semantic structure’ to refer to a way of representing that experience that is relevant to linguistic formulations for that experience”. (Croft, 2012, 13).

The following study focused on the lexicon present in the environment of English structures for *to fish*, whether followed by a preposition or not (Condamines 2018). For this comparative analysis of the lexicon, all the contexts collected in the study of the two constructions (with or without a preposition) were used to build two corpora. The number of the two constructions

was practically the same: 1108 without a preposition and 1094 with a preposition. Unsurprisingly, therefore, the two corpora contained almost the same number of words, making a good basis for the comparison. From here on, the complete contexts in which [To fish (det) river(s)] and [To fish prep (det) river(s)] occurred will be called “without-prep corpus” and “with-prep corpus” respectively.

	Number of structures	Number of words
To fish (det) river(s)	1108	41,361
To fish prep (det) river(s)	1094	40,365

Table 6: The corpus constituted by the contexts in which the structures with or without a preposition appear

The hypothesis was that the lexical environment would provide clues concerning the meaning of the two constructions. This approach resembles distributional analysis in that it takes into account the lexical environment of both structures, with or without a preposition, but it does not take syntax into account. While applied to small corpora in the present case, it can be likened to the ones described in Kilgarriff (1997) and Rayson and Garside (2000). This also corresponds to the corpus-based approaches recommended by cognitive linguistics (Gries 2015).

After lemmatization with TreeTagger³, the two corpora were explored with AntConc⁴, using in particular the keyness function that gives the lexicon specific to one corpus compared to that of another. The Log-likelihood measure was selected. Following the recommendation of the AntConc toolkit, only the lemmas obtaining at least 3.84 (with $p < 0.05$) as a keyness score were considered. Table 7 summarizes the data concerning the two corpora.

	Without prep corpus	With prep corpus
Number of words	41361	40365
Number of lemmas	2715	2440
Number of significant lemmas (with keyness > 3.84)	322	319

Table 7: The lexicon in the corpus containing the structures with or without a preposition

Then the most specific lexicon occurring in each corpus was semantically categorized. The results (taken from Condamines 2018) are presented in Table 8.

	Without prep corpus	With prep corpus
Name of month or season	8 (132)	0

³ TreeTagger is a tool for annotating text with part-of-speech and lemma information. It was developed by H.Schmid in the TC project at the Institute for Computational Linguistics of the University of Stuttgart. (<https://cental.uclouvain.be/treetagger/>)

⁴ Antconc is a freeware corpus analysis toolkit for concordancing and text analysis developed by L. Anthony, Waseda University, Japan. (<http://www.laurenceanthony.net/software/antconc/>)

Name of fish	9 (150)	2 (4)
Name of States and countries	13 (97)	4 (20)
Positive vocabulary	14 (85)	6 (57)
Accessories of fishing	11 (139)	3 (32)
Legal vocabulary	0	11 (225)
Economic vocabulary	0	8 (268)
Danger vocabulary	2 (17)	7 (32)
Natural elements	6 (36)	18 (203)
Family relationships	0	4 (32)

Table 8: Semantic categories in each corpus. In parentheses, the number of occurrences

Some categories were easy to identify; a few examples for the without-prep corpus are:

Names of months or seasons: *January, February, spring, summer...*

Names of States, regions or countries: *Normandy, Nevada, Alabama ...*

Names of fish: *trout, pike, grayling, walleye, bream...*

Fishing tackle: *tackle, accessories, wader, bait, nymphs, line, braids...*

The following are examples for the with-prep corpus:

Natural elements: *cormorant, flower, animal, reef, plant, crocodile...*

Names of family relationships: *grandchildren, husband, ancestors, family...*

Vocabulary belonging to the legal field: *permission, unlawful, license, permit, law...*

Vocabulary related to the economy: *property, owner, landowner, leaseholder...*

It was a little more difficult to identify certain other categories such as, for the without-prep corpus:

Positive vocabulary: *inspiring, ideal, beautiful, clarity, peacefulness...*

and for the with-prep corpus:

Vocabulary related to hazards: *chemical, lethal, polluted, danger, arsenic, decrease, threat...*

Most of the results are in line with what was expected, particularly the ones concerning positive vocabulary (more frequent in the “without-prep corpus”) and the ones concerning legal and economic aspects (more frequent in the “with-prep corpus”). Some results are more surprising: for example, natural elements and family relationships are more abundant in the “with-prep corpus”. It seems that what is important for expert anglers is the relationship with the river and different aspects favouring it: the time, the region, the method of fishing and the species of fish caught. They are not preoccupied by the risks, nor by the economic and legal aspects. And lastly, they prefer to fish alone rather than accompanied by a family member.

Some representative examples containing the two structures are:

- 6) *It's not an exact science to fish a river, but in general terms I prefer to run through for roach, and hold back for bream or other big fish*
(<http://www.maggotdrowning.com/forum/topic.asp>)
- 7) *As a young child growing up in Alabama, I remember the excitement and anticipation of planning trips to fish the rivers* (<http://forgottencoastadventures.com/meet-the-captain/>)
- 8) *In addition to holding a licence, you will also need to obtain the landowner's permission to fish in rivers and lakes* (<http://www.rodlicence.net/>)
- 9) *Reluctant to fish in the river and having no reassuring contact from authorities that the river's fish are not contaminated by either arsenic or antimony.*
(<http://mncgreens.blogspot.fr/2011/09/just-how-polluted-is-macleay-river.html>)

Sometimes, anglers describe a close relationship with the river, either to fight it or to appreciate it. They then use the construction without a preposition:

10) *It is hard to fish the river when the water is up high like it usually is in the spring from all the ice melting* (<http://walleyewarrior.20fr.com/>)

11) *On a whim, I decided to fish a river in Oregon I had visited before, and fell in love with.* (<http://www.sIetgrassrods.com/boo-news/on-the-road-and-the-river.html?start=30>)

It should be pointed out that these are only tendencies: anglers using with-prep constructions in legal websites can also use the without-prep construction. Nonetheless, there are several elements in favour of a difference of meaning in extracts with a preposition before *river* and extracts without a preposition.

The field of fishing is not the only one concerned by this phenomenon. Other verbs also allow the direct construction; examples (12) and (13), found on the web, illustrate this in the fields of skiing and hunting:

12) *How long before you're ready to ski the mountain?* (<https://www.thesnowcentre.com/snowsures/news/howlongdoesittaketogoodatskiing>)

13) *I got in with them soon after they left the meet and tried to hunt a wood and some rough ground left for shooting* (<https://www.facebook.com/Bedsandbuckssabs/posts/>)

On the contrary some verbs do not accept the direct construction, for example, no occurrences of “to dance a room” or “to box a ring” were found on the internet. Further work will be necessary to understand these impossibilities, probably taking into account the nature of the place (closed or not, moving or fixed, etc.).

Adopting the constructional point of view, it seems that the presence vs absence of a preposition corresponds to a difference in meaning, in the field of angling. In this case, and from a cognitive point of view, the difference appears to be due, in large part, to the presence vs. absence of emotion. Fishing, for a non-angler, means catching fish, legally, to eat or sell. For an angler

(i.e., a domain expert), it is a question of experiencing strong emotions when in contact with the river; the fish is only an intermediary.

Emotion is very rarely mentioned as playing a role in specialised languages:

“[...] theories of emotion which have been ignored by LSP research for a long time are of increasing methodological and methodical significance because they offer far-reaching strategic orientations for the communicative-cognitive analysis of information processing in LSP texts”. (Baumann 2007, 322).

Yet, even in technical or scientific situations, it is difficult to imagine that there is never any emotion (excitement, stress, satisfaction...), nor any impact on language structures, in particular in oral exchanges. For example, in French, it would be considered strange to say “voler un avion” (“flying an airplane”) in the sense of “piloting an airplane”. Yet it seems quite possible for example for an Airbus test pilot, enthusiastic about his/her job, to ask a colleague, “tu as déjà volé l’A-350 ce matin?” (“you already flew the A-350 this morning?”).

Put briefly, in this case, one can argue that emotion is the cause of the deviancy.

It can be noted that in the case of language economics (see section 3-1-2), it is also often the prepositions that are removed. In the case of *to fish*, it may be that the desire to “keep it short” plays a role in the suppression of the preposition, but the cognitive explanation seems more likely. Moreover, in the fishing community, suppressing the preposition also becomes a sign of belonging. The sociolinguistic explanation is therefore also to be considered.

5- Conclusion

Linguistic deviancy in terminology is a reality if one compares the discourse and lexicon produced within LSPs with the discourse produced in general contexts (if such exist). As soon

as we look closely at the situation in which these deviancies appear, however, we can show that there is a link between these linguistic structures and the situation in which they are produced and in particular the emotions that underlie expert knowledge.

Several aspects of "deviancy" were presented in this article, either based on work or reflections carried out by various linguists or sociolinguists, or resulting from our studies carried out on corpora. Two types of approaches implemented on corpora, linguistic (economy and prolixity) and cognitive, converge to show the importance of the fundamental role of emotions in specialised discourse. The cognitive perspective aims to show that "deviancies" often make sense and are not simply an alternative to the standard structure. The removal of the preposition in front of complements of place, which leads to putting them in the position of object is, in this respect, quite telling. The case of "to fish (prep) (det) river(s)" has thus been examined at length.

The studies presented show that specialised situations, which imply a shared interest in a domain, lead to language functionings that may themselves be specific ("deviant") because they are part of a particular experience. In Johnson's words:

"Empirical studies indicate [...] that most human concepts are defined and understood only within conceptual frameworks that depend on the nature of human experience in given cultures." (Johnson 1987, xi-xii).

With regard to the cognitive aspect studied via the transitivity of the complement of location in this article, several study perspectives are conceivable. First, an element that should be taken into account is geographical variation. In his study, Callies (2018) showed that the removal of the preposition was increasingly frequent in American English (for example, *He graduated Harvard summa cum laude*). It would probably be necessary to redo the study concerning "to fish" taking into account the geographical origin of the web sites (when available) in order to see if this aspect plays a role in the removal of the preposition. It would also be necessary to

study the lexical environment of the French structures "pêcher det rivière(s)" and pêcher prep (det) rivière(s)". If the structure without a preposition is linked to a relation of the angler with the river, we can expect results quite close to those obtained for English: positive vocabulary, importance of the fishing tackle, of the ecological environment...

One of the questions that remain unanswered is whether it is necessary or feasible to report this phenomenon in terminology dictionaries. The question then arises as to how far terminology should take into account actual usage, even if this means destabilizing traditional reference systems.

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