

# Terminology and Specialized Translation: the Relevance of the Diachronic Approach

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## 0. Introduction

To start this paper, it is perhaps noteworthy to point out that a staggering number of books and articles on terminology do not mention the diachronic approach or do so very briefly. This situation probably reflects the fact that diachrony is still considered as a marginal or minor approach to terminology work.

However, despite this generally unfavourable climate, the history of concepts<sup>1</sup> needs to be developed for at least three reasons.

First, it shows that two concepts are not always strictly identical, even if their names appear to be equivalent or translated from one language into another. Concepts that may be considered as well-known and easy to understand, sometimes appear to be more complex than what they seem to be. This will be illustrated in the field of ecology with the concepts *COMMUNITY* and *COMMUNAUTÉ*<sup>2</sup>.

Second, it proves that translators and terminologists would highly benefit from a more regular use of all the information (including diachronic information) available on terms and concepts as a brief historical study of *ECOSYSTEM* and *BIOSPHERE* shows.

Third, it challenges some of the founding principles of terminology (especially regarding the status and role of terms and words) which may need to be reassessed when studied in the light of diachrony.

But before moving on, it is necessary to explain why we have chosen to illustrate this paper with examples taken from the field of ecology and the environment.

## 1. The History of the Field of Ecology

Ecology can be considered as a relatively modern science, compared to other disciplines like medicine, chemistry or geography, which have existed for many centuries and whose concepts, for some of them, even go back to ancient times. Ecology, as we know it nowadays, only goes back to the 19<sup>th</sup> century, with the founding work of the German zoologist Ernst Haeckel (1899) and its coinage of the term *oekology*<sup>3</sup>. Haeckel based the term on the Greek formant *oikos*, meaning *home*, and wrote (1899, 286) “by oekology we mean the body of knowledge concerning the economy of nature - the investigation of the total relations of the animal both to its inorganic and its organic environment”.

Ecology has a short but interesting history, since it can also be considered as a “cross-discipline”, emerged from the concepts of many other neighbouring sciences like biology, botany and zoology. It has also increasingly been the focus of media attention for a few decades, people having become more and more environmentally-aware, and wanting to be informed about the various types of pollutions and their consequences for our planet. Ecology has therefore undergone quite dramatic changes over the past few decades. From being a discipline seeking to understand the relations between animals, plants and their environment, new goals have been added, and the concepts and methods of “scientific” ecology are now lost in the extension of the term to incorporate almost any idea or ideal, concerning the environment. This situation is at the heart of interesting and major terminological phenomena.

### 1.1. Conceptual Changes and Terminological Instability

#### 1.1.1. The Case of ECOSYSTEM

Most of the time, the emergence of a new scientific concept also goes with the emergence of a variety of names, which are synonyms and coexist in the language for some time. It is a well-known diachronic phenomenon, often studied for the general language but more rarely described for scientific disciplines. In ecology for instance, the term *ecosystem* (based on the contraction of *eco[logical] system*) was coined in 1935 by Sir Arthur George Tansley, a prominent British ecologist, who defined an *ecosystem* as (1935, 99):

[...] The systems so formed which, from the point of view of the ecologist are the basic units of nature on the face of the earth. Our natural human prejudices force us to consider the organisms [...] as the most important parts of the systems, but certainly the inorganic “factors” are also parts [...]. These “ecosystems”, as we may call them, are of the most varied kinds and sizes.

Tansley therefore used the term *ecosystem* in order to describe the interdependence of organisms among themselves, as well as with their living and non-living environment. But if the coinage of the term goes back to the 1930's, the concept had emerged earlier, and could already be found under several different names in previous ecological works, notably by Forbes (1887), Clements (1916) or

Friedrichs (1927). As a consequence, when *ecosystem* appears, it becomes the rival term of a long list of synonyms like *microcosm*, *superorganism*, *quasi-organism*, *biotic community*, or *holocen*. This initial profusion of synonymous terms is typical of what Guilbert (1971) called the “transitional polysemy”, also described as “neological synonymy” by Humbley (1994). It is only a transitional situation as the terms which are synonymous at first, then either disappear or do continue to exist but with entirely different meanings. *Holocen*, *quasi-organism* and *superorganism* have indeed disappeared from the language of ecology, whereas the terms *biotic community* and *microcosm* are still in use, but with entirely new meanings<sup>4</sup>. There is no synonym or even near-synonym left for the term *ecosystem*, which seems to have outshone all its previous competitors.

### **1.1.2. The Case of PARASITISM**

Another interesting case of diachronic terminology is when a founding concept becomes so vast and so complex, that it splits up into many sub-concepts or “derivative concepts” as we may call them, which, in turn, are designated by “derivative terms”, as it is the case for *PARASITISM*. *PARASITISM* is one of the oldest concepts of ecology, since it was borrowed from the history of Ancient Greece, to designate a living organism, animal or plant, growing in or upon another organism (technically called its *host*), and drawing its nutriment directly from it. *PARASITISM* is an essential concept in the field of ecology, especially as it is the starting point for researches on pest control. It has therefore been studied intensively and used regularly by scientists. The original concept has consequently undergone dramatic changes in the process, and has kept on expanding and becoming more complex, leading to the emergence of a number of sub-concepts and terms. Some of these terms have become very popular with ecologists (and also with the experts from other fields who have borrowed them). This is the case for the *microparasite*, an organism which multiplies directly within its host, usually within its cells, and the *macroparasite*, an organism which grows in its host, but multiplies by producing infective stages which are released from the host to infect new hosts. The *endoparasite* lives inside its host and usually ends up killing it, whereas the *ectoparasite* lives upon other organisms, but not directly at their expense. Last, but not least, the *parasitoid* depends on others for sustenance, but during one stage of its life only.

In this case as in the case of *ECOSYSTEM*, terminological changes are completely dependent on conceptual changes as new terms are created when new concepts emerge and evolve.

In most cases however, when concepts change, terms are not always created or modified accordingly, which may be the source of difficulties for translators.

## **1.2. Conceptual Changes and Terminological Stability**

### **1.2.1. The Case of Biosphere**

One of the most important ideas brought forward by the diachronic dimension is

that concepts move from disciplines to disciplines over time, and are borrowed by various sciences, undergoing changes in the process (for more information on this point, read Stengers, 1987), changes which are not often reflected in terms. This is the case in ecology for the *BIOSPHERE*.

The concept of *BIOSPHERE* appeared first in the field of biology to designate a circular atom considered as the basis of all organized bodies. The notion was then borrowed and used in biogeography to designate the earth's layer where life is possible, before finally moving on to ecology to define earth's realm of life as well as the total cargo of living organisms it contains. The Austrian geologist Eduard Suess was the first one to borrow and use the term *Biosphäre* in 1875 in order to describe precisely earth's narrow, life-supporting layer of air, water and soil. The case of *BIOSPHERE* shows that neighbouring but different disciplines often borrow concepts from each other. These concepts often undergo modifications when they "migrate" to a new field, whereas their name rarely changes. This type of diachronic information (from which scientific field does the concept originate?, when was it borrowed?, what does it mean now?, etc.) is essential for translators, since it may help them produce more accurate translations.

## **2. The Relevance of Diachrony for Specialized Translation**

This brings us back to a point made earlier in the introduction on the necessity for translators to know more than only the language, and to also acquire also solid and thorough knowledge on the concepts and their organization within a scientific field. Moreover, it may be considered that there are two main categories of translators, and that each of them needs different and adapted working tools.

On the one hand, specialized translators who were trained as scientists and turn to translation for professional reasons have a good knowledge of the concepts and their organization, but lack competence and experience in the process of translating. On the other hand, specialized translators who were trained as linguists should be well experienced in the exercise of translation between two languages, but often lack information and knowledge on the scientific concepts and their organization. It is then worthwhile considering that these two categories of translators need adapted tools, and that the specialized translator trained as a linguist would highly benefit to have access to diachronic information on concepts and terms. He would then be better armed to make the difference between identical and similar concepts, as it is explained below.

### **2.1. Identical Versus Similar Concepts**

One common mistake of specialized translation is to consider that two terms, which are considered as equivalent in two different languages, designate identical concepts. This is especially true when the two languages are close, like French and English, that the terms are "simple" or well-known terms and that their translation seems straightforward to the translator. For this point, I would like to draw from the work of Thoiron (1996), who makes a distinction between what he calls "identical"

and “similar” concepts. Identical concepts (in two or more languages) are composed of the same notional elements, contain exactly the same type of information and correspond to the same reality.

Similar concepts (in two or more languages), on the other hand, correspond partially but not entirely, as they share only part of their information or describe a reality which is slightly different. In other words, similar concepts have part of their information in common and part which is not found in the other concept. This is the case in ecology when having to translate the terms *communauté* and *community*. These two terms, which seem fairly simple to understand, and appear to be well-known even to non-specialists, could therefore be automatically considered as naming identical concepts in English and in French. *Communauté* and *community* actually designate concepts which cannot be considered as identical but only as similar. The concept of *COMMUNITY* shows a larger extension than the concept of *COMMUNAUTE*. *COMMUNAUTE* describes a biotic system composed of different populations, taken in a defined area or biotope, and at a given time. The time and the localized area obviously constitute important information on the concept. In the English language however, the concept *COMMUNITY* seems somehow to have evolved differently, and doesn't imply that the populations have to be of a different nature, and doesn't give any information on the time. A *COMMUNITY* can therefore be defined as a biotic system composed of populations which can be from different or from the same nature, present in a given biotope, at any time. We can thus conclude that the two concepts are not identical but only similar, and that depending on the context, it is a mistake to use *community* as an equivalent of *communauté*, which is often best translated by using the English terms *population* or even *guild*.

It is therefore impossible to reduce the concept of translation to the simple exercise of comparing terms and finding linguistic equivalents in the appropriate language. Translating is also comparing concepts which may have evolved differently in two languages, which sometimes may also mean having to compare different cultural conceptions of the same reality.

## **2.2. A New Kind of Terminological Definition**

Having considered the importance of providing translators with diachronic information, it is now time to move on to consider what is the best way of presenting this information. It seems that the most efficient method would be by including it in the definitions they use.

We therefore consider that the role of a terminological definition is not only a cognitive role of offering information on unknown or not very well known terms, but is also to give a complete description of the conceptual system which is behind the term. This is why we consider that it is also part of the definition to inform the translator about the history of the concept and its name(s). But we are also aware that translators always work under tight time constraints, and that too long or too complex definitions would not be of any use to them in the end. We therefore

suggest to present the diachronic information in the shape of hypertexts or “hyperfiles”, attached to the main body of the definition, and accessible by clicking on a symbol also included in the main text.

By doing so, the translator would then access easily, but only if needed, to the required diachronic information.

The table below shows (in French) an example of diachronic information which could be added to the core of the definition.

**Table 1.** Diachronic Information Added to the Definitions in French of the Terms *Guild* and *Guilde*.

<b>Terme anglais : <i>guild</i></b>	<b>Terme français : <i>guilde</i></b>
corrélats terminologiques : <i>population, community</i> .	corrélats terminologiques : <i>communauté, population, peuplement</i> .
<p><u>Définition</u> (1969/RONEP.335). A guild is defined as a group of species that exploit the same class of environmental resources in a similar way.</p> <p>(1979/BRPEC.285). A group of species that share a resource (have related niches) in a community.</p> <p>(1980/BMFAE.96). A guild is a group of species having similar niches and performing similar ecological roles.</p> <p>(1990/BHTEC.853). Guild : a group of species that exploit the same class of environmental resources in a similar way.</p>	<p><u>Définition</u> (1986/DAPRE.162). On désigne sous le nom de guilde la fraction du peuplement d’un milieu qui réunit un groupe d’espèces se partageant le même type de ressources de la même façon.</p> <p>(1995/BAEGE.185). Une guilde est un ensemble d’espèces taxinomiquement apparentées qui exploite localement un même type de ressources. [...] Le terme guilde est beaucoup plus restrictif que le terme peuplement. Il peut donc être commode de l’utiliser pour désigner des groupements d’espèces taxinomiquement proches et appartenant à un même niveau trophique, réservant celui de peuplement pour des ensembles plus vastes, réunissant plusieurs guildes.</p>
<p><u>Contexte :</u> (1976/MATHE.188). A guild may be defined as a group of species separated from all other such clusters by a distance greater than the greatest distance between the two most separate members of the guild concerned.</p>	<p><u>Contexte :</u> (1986/DAPRE.163). C’est au niveau des guildes que la différenciation des niches écologiques, consécutive à la radiation adaptative, se montre le mieux.</p>
<p><u>Evolution diachronique :</u> - Terme utilisé pour la première fois dans un sens écologique par Roots en 1967. - <i>Guild</i> se différencie de <i>population</i>, qui désigne un ensemble d’espèces identiques, réunies au même moment, dans un même</p>	<p><u>Evolution diachronique :</u> - La dénomination <i>guilde</i> est calquée sur le terme anglais <i>guild</i>. <i>Guilde</i> et <i>guild</i> renvoient aux mêmes concepts en français et en anglais. - Il y a coexistence en français de deux</p>

lieu.

- Certains ouvrages de langue anglaise utilisent le terme *taxonguild* pour désigner des sous-ensembles de guildes, *taxonguild* mettant l'accent sur la similitude taxonomique des espèces.

- Le terme *taxonguild* peut ainsi être considéré comme un des termes le plus proche du terme français *gilde*, qui ne semble pas posséder de réel équivalent linguistique en anglais.

notions proches, dénommées par des termes différents : le *peuplement* désigne un ensemble d'organismes appartenant à des espèces taxinomiquement liées alors qu'*une guilde*, en outre, insiste sur l'identité des ressources partagées par ces espèces.

- Le terme *peuplement* est parfois utilisé comme un synonyme de *communauté*, qui ne renvoie pas au même concept que *community* en anglais. Le concept anglais *COMMUNITY* est d'une extension beaucoup plus large que *COMMUNAUTÉ*.

- Il y a confusion d'emploi entre *gilde* et *peuplement*, considérés à tort comme des synonymes.

- Il ne semble pas exister de concept homologue et de terme équivalent à *peuplement* en anglais.

### 3. Diachrony and Some Principles of the Theory of Terminology

The diachronic dimension proves to be extremely relevant to translation work, as shown before, but it also sheds new light on some founding principles of terminology.

First, it calls into question the principle first established by Wüster, and according to which each term is part of a scientific or technical discipline and corresponds to one notion only. The term is then viewed as a highly "fixed" entity, marking clearly delineated conceptual spaces within a given domain of expertise, and is therefore protected from synonymy, polysemy and connotation. In this, terms are thus opposed to words which rather appear in non specialized communication and may have different meanings. According to Opitz (1983: 60):

Regardless of their origin or method of construction, all terms aim at one common quality: a rigidly fixed obligatory range of meaning. [...] What terms represent is the inventory, or nomenclature, of their underlying area of specialised pursuit.

Diachronic studies show that this principle can be somewhat questioned and that synonymy does exist in scientific disciplines, as we have seen with *ECOSYSTEM*. Even if short-lived or transitional, synonymy often accompanies the emergence of new concepts.

Then, diachrony shows that it is not appropriate to consider that terms belong to one scientific discipline only and that specialized fields of knowledge are hermetically closed to each other. It suggests on the contrary that scientific domains have fuzzy boundaries which allow terms and concepts to be seen as "mobile entities" which can be borrowed and used in different fields, thus proving that inter-domain lexical and conceptual sharing exists.

This idea has been developed by Gaudin (1993: 82):

L'essentiel de la production terminologique est lié à l'innovation. Or, on sait que celle-ci naît de réseaux transversaux et que la circulation langagière, l'échange et la contamination de concepts entre les disciplines sont des moteurs puissants de l'innovation.

Last but not least, as it seems irrelevant to strictly oppose scientific disciplines, it also seems counterproductive to strictly oppose the languages of scientific and non-scientific fields. Because it is a science so prone to media and public attention, part of the language of ecology belongs both to specialized and general communication and, in many respects, represents a transition zone between them.

The terms *population*, *ecosystem*, *parasitism*, *niche*, *guild*, etc. are indeed part of a specialized language used by ecologists, but are also known, understood and used by laypersons.

Then, is it relevant to strictly oppose words and terms ? From a diachronic point of view, the strict opposition between terms and words is indeed questionable and it seems more appropriate to consider terms as lexical entities which transcends the boundaries of expert language and can also be used by the general public in non-specialized communication. In most cases, when a term migrates to the general language (as it is the case for *ecosystem* for instance), the essence of the notion perceived by laypersons is similar to that perceived by experts, and that the basic domain sense remains identical.

[...] Terminological meaning and usage can “loosen” when a term captures the interest of the general public. In such a situation, a lexical item that was once confined to a fixed meaning within a specialized domain is taken up in general language. We call this process de-terminologization.  
(Meyer and Mackintosh, 2000 : 112).

#### **4. Conclusion**

Diachronic terminology has become essential for specialized translation.

The growing rate of exchanges of scientific knowledge and products between countries has indeed accelerated the need for multilingual or at least bilingual terminology. Because translation has a history of transferring scientific knowledge across cultural boundaries, we must therefore consider specialized translators as primary users of terminology. Their task is to ensure a good scientific communication between specialists, and translators can be seen as “cross-fertilisers”, since they contribute to the advancement of scientific knowledge in different countries. There is therefore a urgent need to revisit some of the founding principles of terminology and take into account more largely the history of concepts and terms and the cultural differences they carry. This certainly gains

weight and importance when it is observed in the light of corpus linguistics, which opens up new and original possibilities of research in this field.

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<sup>1</sup> This paper doesn’t discuss the difference made by some terminologists (Goupil, 1988, and Gentilhomme, 1994 among others) between a “notion” and a “concept”. Both terms will therefore be used as synonyms in the article.

<sup>2</sup> In order to distinguish between them, capital letters and italics will be used for concepts and small letters and italics will be used for terms.

<sup>3</sup> Of course, we can find ecological or rather “proto-ecological” trends in various publications and books of the 17th and 18th century, written by naturalists like Buffon and Linneaus, but the constitution of the science of ecology, as we know it nowadays, only goes back to the 19th century.

<sup>4</sup> A *biotic community* is now largely considered as the community of living organisms which can be found in a certain area called the *biotope* ; whereas an *ecosystem* is considered as being constituted by the *biotic community* and the *biotope*.

## **ABSTRACT**

### **Terminology and Specialized Translation: the Relevance of the Diachronic Approach**

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The purpose of this paper is to show the relevance of diachrony for terminology work and to discuss its relationship with other disciplines like the history and philosophy of sciences. It also aims at proving the importance of the diachronic dimension for specialized translation. In order to produce high quality translations, it is indeed essential for translators to know more than only the language. They also have to become familiar with the concepts behind the terms they need to translate, and understand how these concepts organize and interact with each other. Diachronic information is instrumental in providing translators with a thorough and solid knowledge of the source area, especially if this information is added to the main body of the terminological definition as an hyperfile. In this case, terminology work uses information technology to promote the value of the diachronic dimension.

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