

Where Generative AI Fails: Explaining International Standards through an Explanatory Dictionary

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Abstract

Lexicography has always been at the forefront of technology whether it be with the introduction of printing or the use of digital technology. It is thus not surprising that generative artificial intelligence (AI) along with its so-called Large Language Models (LLM) have been quickly put to lexicographical use. This paper sets out to demonstrate that the advantages brought by tools as ChatGPT in rapidly building entries and even setting them in a desired XML format has limitations. Here, we look at how AI can help in building an experimental explanatory dictionary on Corporate Social Responsibility in French. This entails explaining usage from a special language, that of ISO standards, to a non-specialised audience. What we show is that whilst AI can explain the terms, a number of difficulties arise in that the standard has been translated leading to cross-cultural misinterpretations and that it cannot adapt to a targeted audience which is a Discourse community that must rely on mediation through an expert in the language norms of standards and business practice. The solution adopted is to use a corpus-driven approach alongside TLex Tools for management of both the source data and the overall dictionary.

Keywords: Explanatory dictionary; TLex; Corporate Social Responsibility; ISO standards; Sustainability reporting; Discourse communities;

1 Introduction

Lexicography has always been at the forefront of technological change. It was quick to adopt the new Roman characters, and also the printing press (Hanks, 2010). In so doing, it also developed a layout which is still used today. It was therefore obvious that it would adopt the advantages of computers and of corpora (Sinclair, 1987). The task of analysing corporate data was made far easier with the advent of Sketch Engine (Kilgariff et al., 2004). Digital data, digital dictionaries, dictionary management systems, such as TLex, greatly facilitate the work of lexicographers (Joffe et al., 2003). Given such advances, it would seem obvious that artificial intelligence has a role to play and it is now fully integrated into Sketch Engine, but rather than being plug and play, the use of AI requires a lexicographer's knowledge to formulate requests (De Schryver, 2023). The advantages of professionally used AI are obvi-

ous, but there are also drawbacks inherent in the very nature of large language models as we shall see when discussing the concept of sustainability.

This paper concerns the compilation of a specialised dictionary aimed at French small businesses confronted with the need to apply Corporate Social Responsibility legislation. Such sustainability reports are compulsory for large enterprises and organisations, but they are now also being applied to small and medium-sized enterprises (SME). This creates numerous problems for small companies that do not have specialised management departments to handle such reporting. They are therefore obliged to build their own operational strategies. Apart from the complication of doing this, they are also faced with a problem of language as legislation uses specialised terminology, which have also been translated from English, thereby leading to certain problems of understanding. Here, we shall show some of the problems of using the AI tool ChatGPT to extract terminology so as to build a specialised dictionary that would be adapted to the needs of SME users. We show what AI can do, where its limits lie, and how we overcome these problems when building a specialised dictionary, using the T-Lex tools. Our aim is to build a specialised explanatory online dictionary that can be used by students following managerial courses in Sustainability management and also SMEs faced with implementing a sustainability strategy. We aim to make this dictionary available to managers and students but it remains an exploratory exercise and not a commercial one.

2 Sustainability Reporting

Corporate Social Responsibility, as enshrined by the Global Responsibility Initiative (GRI), has been in existence since 1999, and all major corporations have to file annual reports, which have often been accused of being a form of green-washing. These are often in English and have been studied by (Pensec, 2015, 2016, 2019) both in terms of their linguistic and managerial aspects. With the increasing importance of the United Nations Sustainable Development Goals and their implementation in both national and European policies, sustainability reporting has spread to a wider range of organisations, notably Small and Medium Enterprises. In France, such reporting is essentially enshrined in the application of different international standards, notably ISO 9001 (International Standards Organisation, 2015) for quality management and ISO 26000 (International Standards Organisation, 2010) for social responsibility.

Putting into place sustainability strategies brings notable benefits to companies, but also brings in numerous difficulties. One problem is that smaller companies do not have specialised personnel. They can call upon a consultant to set up a strategy, but they will still have to either recruit or train someone. In both cases, the person will not be a specialist of the standards, but a technician who is applying them. Such persons will require training. Another problem is that standards evolve requiring managers to read and understand updates. The latter brings us to the problem of language.

ISO standards are first published in English, everything else is in translation. Even if the dogma of exactitude in terminology is accepted, translation, inevitably, introduces difficulties of interpretation. If the terminology is understood by specialists, its interpretation by

users will not necessarily be so. This is precisely the problem we are faced with here. One solution that users now have is to have recourse to an AI tool such as ChatGPT as will be demonstrated in the following section.

3 What is Sustainability?

If we consider the UN Sustainable Development Goals, this notion of sustainability becomes central in all economic activity. The problem lies in how to translate the concept.

We can illustrate this with the concept of sustainability, which ChatGPT defines as:

Sustainability refers to the ability to meet present needs without compromising the ability of future generations to meet their own needs. It involves maintaining a balance between environmental health, economic development, and social well-being.

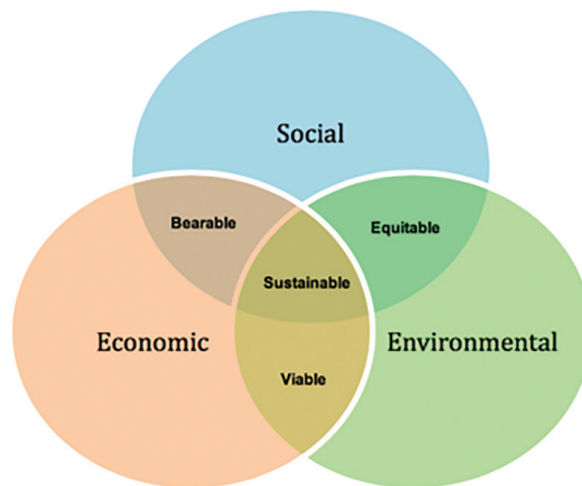


Figure 1: The three pillars of Sustainable Development.

Three pillars of Sustainability:

1. Environmental sustainability:

- protecting natural resources (like water, air, soil, and biodiversity)
- reducing pollution and waste
- combatting climate change

2. Economic sustainability

- supporting long-term economic growth without negatively impacting social or environmental health
- promoting responsible consumption and production

3. Social sustainability

- ensuring human rights, equity, and access to basic services (healthcare, education, etc.)
- supporting communities and cultural diversity

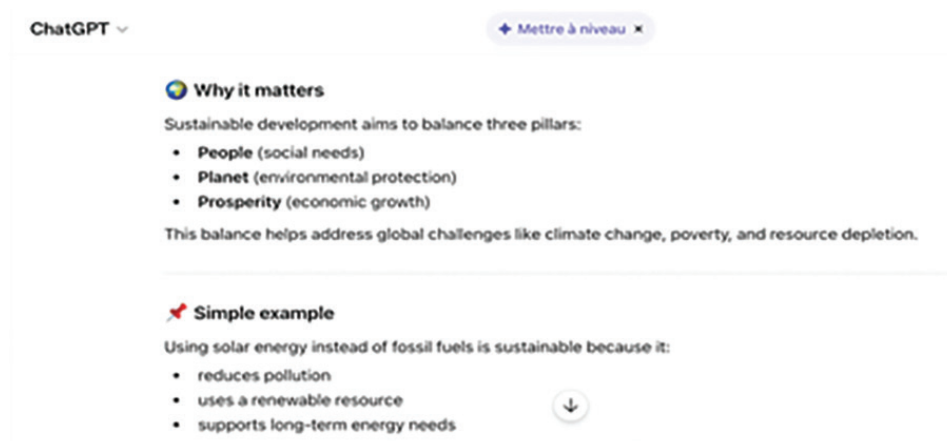


Figure 2: Extract from ChatGPT for 'sustainability'.

Such a definition is perfectly exact, but extremely general, and not really useful to someone who needs to apply sustainability in a business context. Somebody directly concerned with the problem, would probably say 'so what?' Now, if we ask a similar question in French, we are faced with the problem of three potential keywords: *développement durable*, *durabilité*, *soutenabilité*.

According to ChatGPT, the term translates thus:

Le développement durable est un concept qui désigne une manière de répondre aux besoins du présent sans compromettre la capacité des générations futures à répondre aux leurs.

Cette définition vient du rapport publié en 1987 par la Commission mondiale sur l'environnement et le développement(souvent appelé rapport Brundtland).

Les 3 piliers du développement durable

Le développement durable repose sur un équilibre entre trois dimensions essentielles :

1. **Environnemental**

Protéger la planète, préserver les ressources naturelles, limiter la pollution et lutter contre le changement climatique.

2. **Social**

Assurer le bien-être de tous : accès à l'éducation, à la santé, respect des droits humains, réduction des inégalités.

3. Économique

Développer l'économie de manière responsable, en créant des richesses et des emplois sans nuire à l'environnement ni à la société.

L'idée clé

Ces trois piliers doivent être **équilibrés**: un développement n'est durable que s'il est **écologiquement viable, socialement équitable et économiquement viable**.

In the same way as for English, this definition is correct and provides interesting information, but remains far too general compared to the precise and specific needs of the target of our dictionary. The first problem is that the term is generally understood in France as only concerning the environment, and anyway, the content is so general that it does not address the real needs of the SMEs managers who are not specialists on the subject of sustainability and who are looking for a pragmatic approach to implement a sustainability initiative adapted to their specific situation. If we look at the alternative terms, we are not better off as 'durabilité' is seen as purely conceptual, although it does have a technical application in ways the SME reader would not immediately understand. 'Soutenabilité' is widely used in French Canadian usage, but not in France. Thus, the entry points to the issue that is still far from clear to a business user.

durabilité FR • sustainability EN



développement durable

En France, les termes durabilité et caractère durable sont recommandés officiellement par la Commission d'enrichissement de la langue française, depuis 2006. Terme déconseillé : **soutenabilité** n. f. En ce sens, **soutenabilité** est à éviter, car il s'agit d'un calque de l'anglais sustainability qui...

Office québécois de la langue française

Dernière mise à jour : 2010

Figure 3: Sustainability in the *Grand Dictionnaire Terminologique*.

This observation highlights the central importance of reflecting on, and understanding, the typical user of the standard, his or her practices, and real needs. A definition as proposed by ChatGPT is conceptual and macro, whereas the dictionary user is looking for clear, simple definitions intended for non-specialists, equipped with examples of good practices. This means adapting definitions to a user community, which is something an AI system cannot do without heavily refining the query, something that only someone who is already an expert can do.

In theory, all dictionaries are designed to fit a target audience (Atkins & Rundell, 2008), which can be very general or very precise, although users do not always understand this targeting as the commercial claims of a publisher do not like to limit its appeal. A good example is the OED, an excellent reference work, but not adapted to everyday needs. Similarly, the pragmatic approach of advanced learner's dictionaries is often suitable to native users (McCreary, 2002), but this is because of their clarity. In both cases the user group is broad, but an AI tool could still not fulfil the role of the OED as it would be unable to access

and assess such historical data. This leaves AI as a tool for general usage. For more precise target groups, we need to look at the notion of discourse communities (Swales, 1990).

4 Adapting data to the user: discourse communities

The concept of a discourse community, as developed by Swales (1990), explains how language operates within specialised groups. A discourse community is not just any group of people who communicate, it is a group that shares common goals, and specific ways of using language to achieve those goals. So, what defines the community is not only who belongs, but how communication works inside it.

This definition highlights three key ideas:

- Language is socially situated, in the sense that meaning depends on the community who is using it, so, the same word or structure can mean different things in different discourse communities;
- Genres are not only forms, they are goal-oriented communicative actions shaped by the community itself;
- Being a member of a discourse community means learning its genres, mastering its vocabulary and understanding its norms.

It appears that a discourse community is not just a speech community (shares a language), nor just a social group (social interactions). A discourse community shares communicative practices and goals and is organised around communication and knowledge exchange.

To understand the needs of the dictionary user, it is appropriate to identify the characteristics of the target. In the case of small companies, this means an 'operational' user who is both:

- Pragmatic: they are not looking for a militant, ideological, or conceptual discourse but to address a concrete constraint. In sum, sustainability is a topic among others on a busy agenda
- Non-specialist in the subject: vague topic, full of jargon, cosmetic, but whose rational is to understand what sustainability will concretely bring them

From there, it is appropriate to define the user's needs in terms of sustainability when looking at sustainability. Thus, in our case, the SME manager is looking for:

- Immediate clarity: a simple explanation of sustainability topics without abstract concepts. A manager is seeking a direct translation of them into issues for his or her type of company.
- Educational support: an approach based on popularisation without infantilisation and a reassuring stance in which he does not feel judged.
- On-the-ground credibility: explanations adapted to his type of company and not inspired by large companies that do not correspond to his or her reality.

From an analytical point of view, the above highlights two things:

- The user of the dictionary constitutes a community defined by the characteristics we have just listed;
- The language used in the user's context constitutes a discursive genre characterised by a rejection of jargon, abstract concepts, and unnecessary complexity.

This is where a new complexity comes into play. French SME users form a discourse community with their own language and norms. Their usage requires understanding the language of the standards and relating it to their own practice within a French legal context. It also must take into account cultural aspects leading to semantic prosodies (Louw, 1993) that are not immediately apparent. Different languages can interpret what may seem a simply translation in culturally biased ways (Williams & Pensec, 2025). The added layer of complexity comes in through the fact that the ISO standard community is also a discourse community, so that the dictionary writer must mediate needs between the two communities.

5 The Dictionary

This is not an experimental explanatory dictionary in the Mel'čukian sense (Mel'čuk, 1996), but one that explains following Hanks call for a reversal of the Aristotelian paradigm of *definiendum-definiens* by explicandum-explicans (Hanks, 2013). The object here is to take a term and explain it in language that the target user can understand. This is about decoding, not encoding. The dictionary will also be corpus-driven in part, and certainly corpus-based.

Since the introduction of corpora in dictionary production during the COBUILD project (Sinclair, 1987), the use of corpora has become the norm. A so-called Large Language Model, the textual elements behind an AI tool can be seen as a large corpus, but as we have seen they can only handle very general language use. Consequently, in this case we have adopted a mixed corpus approach.

Dictionaries in the 21st century are based on digital documentation, including corpora, in the sense of Sinclair:

- a collection of pieces of language text in electronic form, selected according to external criteria to represent, as far as possible, a language or language variety as a source of data for linguistic research (Sinclair et al., 1987)
- a collection of pieces of language that are selected and ordered according to explicit linguistic criteria in order to be used as a sample of the language (Sinclair, 1996).

The corpus is therefore not a collection of texts, as LLMs, but a set of texts selected in such a way as to be able to analyse the use of language in a specific context. Unlike LLMs, the corpus is built to answer a previously defined question and of which it is representative.

In the context at hand, the dictionary aims to provide clear information for a non-expert audience and address the problem they meet. The content of the selected textual data therefore plays an essential role and needs to reflect the needs of the discursive community concerned. The data selected to build the corpus must meet three criteria:

- be as neutral as possible
- be representative of the subject
- have proven its legitimacy
- correspond to the reality on the ground for future users

To build the most relevant corpus, two options have been considered:

The GRI corpus, a collection of reports in three languages composed of company reports in the context of the Global Reporting Initiative, is:

- built to analyse sustainability language as it is used by companies
- this corpus respects the constraints of corpus creation in the sense of Sinclair
- based on a sustainability reporting framework whose objective is to organise the sustainability reports
- corpus already created (Pensec, 2019)

The ISO26000 corpus, consisting of the current ISO standards :

- achieves the objective of ISO26000, to explain how to deploy a sustainability strategy in organisations
- does not meet the constraints for creating a corpus in the sense of Sinclair but the methodology is the same
- sustainability approach framework whose objective is to organise the process of deploying the sustainability approach
- corpus to be created.

The two standards are not intended to define what is right or wrong (there is no moral dimension in these two standards). They therefore do not indicate the concrete content of sustainability within an organisation. They provide a framework and methodology through which the process is organised, allowing relevant stakeholders to define their vision of the fair operation of the organisation. These two standards structure, guide, and organise the discursive space.

Among these two possibilities, the choice of the ISO26000 corpus clearly appeared as a more pragmatic and relevant choice in view of the needs of the future users of the dictionary.

- SMEs managers implement an approach before organising its reporting. The primary need of users is therefore to understand the sustainability approach. It is ISO26000 that meets this need.
- This international standard is the foundation on which the French sustainability labels used by organisations are based.
- This dictionary has a practical purpose and seeks to meet a concrete need of its non-expert users.

6 TLex as Dictionary Management System

TLex (Joffe et al., 2003) is a set of tools with dictionary production and management that were developed in South Africa. They are available for commercial use, but there is a price for academics who wish to use the tools for the creation of dictionaries within the teaching and research environment. The tools allow the building of structured dictionary entries, along with their export in different formats. Associated tools include Tl corpus, which is a corporate analysis system from which examples can be inserted directly into the dictionary. Another tool is tlTerm which allows the building of terminology data bases. We shall not be using this here although the starting point is terminological, our aim is to build a special language dictionary.

The latest versions of the TLex tools allows the lexicographer to work directly with AI, contain the full dictionary structure, including the definitions (de Schryver & Joffe, 2023). This is not something we intend to do the reasons given above. However, we do make use of electricians so as to have a consistent, coherent and well-structured dictionary. Although it can be integrated with Sketch Engine, we are not doing this but have preferred to extract a list of terms with Sketch Engine, but seek examples directly from the GRI French corpus using tlCorpus. As in all good terminological practice, the terms attracted the terms. The candidate terms extracted are checked by an expert before being included in the dictionary. In this case, we pay especial attention to acronyms as these are often the biggest problem for someone who is new to a field.

	B	C	D	E	F	G
1						
2						
3	method name: extract_keywords					
4	corpus: user/emmanuellepensec0/corpus_rse_iso26000					
5	subcorpus: -					
6	Item	Frequency (focus)	Frequency (reference)	Relative frequency (focus)	Relative frequency (reference)	Score
7	Responsabilité sociale	531	8334	5976,36475	0,46807	4071,585
8	Question centrale	86	16117	967,92346	0,90519	508,571
9	Partie prenante	252	109007	2836,24097	6,12223	398,364
10	Intégration de la responsabilité sociale	35	20	393,92233	0,00112	394,479
11	Norme internationale de comportement	23	61	258,86325	0,00343	258,976
12	Devoir de vigilance	22	2599	247,60832	0,14597	216,941
13	Contribution au développement local	19	114	213,84355	0,0064	213,477
14	Dialogue avec les parties prenantes	19	636	213,84355	0,03572	207,434
15	Développement local	46	27069	517,7265	1,52029	205,82
16	Groupe vulnérable	21	4613	236,35341	0,25908	188,513
17	Responsabilité sociale dans une organisation	13	0	146,31401	0	147,314
18	Comportement éthique	14	1624	157,56894	0,09121	145,315
19	Intérêt des parties prenantes	13	301	146,31401	0,01691	144,865
20	Participation des parties prenantes	13	521	146,31401	0,02926	143,126
21	Chaîne de valeur	27	21051	303,88293	1,1823	139,707
22	Brève description objective	12	0	135,05908	0	136,059
23	Consommation durable	13	2039	146,31401	0,11452	132,177
24	Attente de la société	13	2151	146,31401	0,12081	131,436
25	Description objective	12	630	135,05908	0,03538	131,409
26	Initiative volontaire	12	665	135,05908	0,03735	131,16
27	Performance en matière de responsabilité sociale	11	0	123,80416	0	124,804

Figure 4: SketchEngine list before cleaning.

Once imported into TLex, each entry is structured.

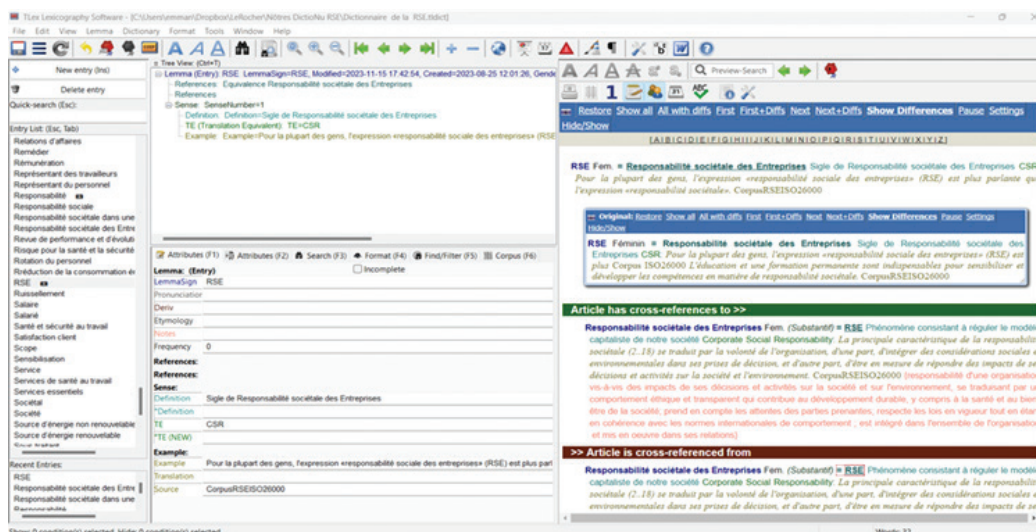


Figure 5: Structuring data in TLex.

This example concerns an acronym, RSE. It shows the acronym, its signification and the English term, CSR or Corporate Social Responsibility. The idea is not to create a bilingual dictionary as the user community is French speaking and using the tool for decoding only. However, we consider it important that the user have access to the language in which the term was initially created. In this-case, the expert adds the signification manually, but the examples are drawn from the text of the current version of the standard. Acronyms and abbreviations are considered as entries in their own right so as to save the time of the user, they are however rigorously cross-referenced in both directions.

Definitions are extracted from a number of sources and compiled and adapted using the knowledge of the expert who is both a consultant and trainer, thus capable of making the definition understandable to the target community. Using an ISO definition directly would defeat the purpose.

This can be illustrated by the entry for *Communautés locales (local communities)* which is defined as:

des personnes ou des groupes de personnes vivant ou travaillant dans des zones qui sont affectées ou qui pourraient être affectées par les activités de l'organisation. La communauté locale s'étend aux personnes vivant à proximité des opérations de l'organisation à celles vivant à distance

The first thing that we have done in standardising the entries is the use of the formula *person or group of persons* so as to avoid vague third person indications. Such practice is carried out throughout the dictionary so as to look language that is closer to that of the user. We are also faced with the problem that *community* does not have the same meaning between French and English and is yet another case of the lost in translation that we have explored with the notion of *work* (Williams & Pensec, 2025). In other cases, definitions require further precision such as when we speak of clients which is potentially ambiguous as

it can refer to other companies or to the final user, the consumer of a product or service. These are legal terms with reference to French and EU law, whereas the ISO standard is obviously neutral.

7 Conclusion

Without a doubt, AI models based on Large Language Models can bring a lot to lexicography. However, the limits of automatized systems must be taken into account. The inclusion of AI in corpus analysis tools such as SketchEngine and a Dictionary Management System such as TLex will greatly ease the work of lexicographers working on general language, but will be more limited on special language works. Here, we have illustrated the difficulties involved in building an experimental explanatory dictionary in French. We have highlighted a number of problems starting with the fact that the source language is English and therefore the usual document which is in French suffers from the dangers of translation with cultural interpretation of some language. The other problem is that building the resource from an ISO standard is fine if we are dealing with the terminology, provided the source is the most recent version of the standard. However, what we are finding in this case is that we have a clash of two different discourse communities, that of ISO standards and that of business users. The dictionary then must be mediated by an expert who understands both special languages and can render the text meaningful for a particular target community. The following stage is classic lexicographical procedure using the dictionary management system, in our case TLex, but here too, a great deal of human intervention is needed using an integrated corpus, but not necessarily the AI tools. In sum, AI tools can bring a lot to lexicography, but the human input remains central as dictionaries are essentially tools for humans compiled by humans with a real knowledge of social needs. If Artificial Intelligence is useful, it must remain a tool with real human intelligence dominating.

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