Ralph Krüger

A Cognitive Linguistic Perspective on Explicitation and Implicitation in Scientific and Technical Translation

Abstract

This article aims to give a cognitive linguistic account of the translational phenomena of explicitation and implicitation within the context of scientific and technical translation. After a brief discussion of possible conceptual issues involved in explicitation and implicitation research, it will be argued that a suitable linguistic framework – for example cognitive linguistics – is needed to model the various complex dimensions of the two phenomena. Following a short introduction to cognitive linguistics, explicitation and implicitation will be positioned within two influential models of "linguistic construal operations" developed within this framework. Then, a link will be established between the concept of linguistic construal and Langacker's cognitive semantic theory of domains, which provides a toolset for modelling the implicit knowledge structures underlying specific usage events in communication. To test the suitability of the proposed framework, the article concludes with a discussion of some authentic examples of potential explicitation and implicitation in cognitive linguistic terms.

1 Introduction

The concepts of explicitation and implicitation were first introduced in the discourse about translation by Vinay and Darbelnet (1958/1977) in their comparative stylistics of English and French, and their definitions will serve as a starting point for the following discussion. Vinay and Darbelnet define explicitation as a

> [p]rocédé qui consiste à introduire dans LA [langue d'arrivée] des précisions qui restent implicites dans LD [langue de départ], mais qui se dégagent du contexte ou de la situation.
> (Vinay/Darbelnet 1958/1977: 9, square brackets added)
> 'A stylistic translation technique which consists of making explicit in the target language what remains implicit in the source language because it is apparent from either the context or the situation.' (Vinay/Darbelnet 1958/1995: 342, translation by Sager/Hamel)

In the same vein, implicitation is defined as a

> [p]rocédé qui consiste à laisser au contexte ou à la situation le soin de préciser certains détails explicites dans LD. (Vinay/Darbelnet 1958/1977: 10).
> 'A stylistic translation technique which consists of making what is explicit in the source language implicit in the target language, relying on the context or the situation for conveying the meaning.' (Vinay/Darbelnet 1958/1995: 344, translation by Sager/Hamel)

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Leaving aside the reduction of the concepts to mere "stylistic" techniques, both defini-tions seem rather straightforward and intuitively appealing, their *definiendums* showing considerable potential for empirical analysis. This is especially true of the concept of explicitation which, ever since the postulation of Blum-Kulka's (1986) Explicitation Hypothesis, has been considered to be a universal of translation and has found an especially fruitful testing ground in the framework of corpus-based translation studies (Laviosa 2002: 18). However, the widespread empirical application of explicitation in corpus-based studies was often not accompanied by a sound theoretical elaboration of the highly complex nature of this concept and its counterpart implicitation.

This conceptual complexity and the resulting problems for a theoretically and empirically sound investigation of explicitation as well as implicitation can be traced back – at least in part – to a circularity in Vinay and Darbelnet's definitions, namely the root morphemes "explicit" and "implicit" occurring both in the *definiendum* and in the *definiens*.[1] Therefore, in order to arrive at a coherent picture of explicitation and implici-tation, we require a proper account of the notions of "explicitness" and "implicitness" that goes beyond intuitive judgements made in various studies on the topic (e.g. Øverås 1998: 567). An important question that could be asked in this context is: What exactly does it mean for a given piece of information to be "implicit" in the source or target text (see also Becher 2011: 17)? Is it sufficient for the information to be just overtly absent from the text or does it have to be inferable in some way on the basis of the source or target text? And how should this implicitness be modelled in theoretical terms, so as to allow for a sound debate and to be applicable in empirical analyses?

2 A Brief Excursus: Explicitation and Implicitation vs. Explicitness and Implicitness

From the brief discussion above, it should be clear that the notion of implicitness and its counterpart explicitness are inextricably linked with explicitation and implicitation. This close interrelation of the two concept pairs has sometimes led to confusing accounts that hinder a transparent discourse on explicitation and implicitation in translation studies. This is evidenced for example by misleading statements such as "Explicitness as a universal feature of translation" (Schmied/Schäffler 1997), which is the headline of an article in which the authors are actually investigating instances of explicitation in translation. For the purpose of the following discussion, it is therefore necessary to draw a clear distinction between the two concept pairs and to give a brief account of explicitness and implicitness that can serve as a basis for the remainder of the article.

As can be seen from Vinay and Darbelnet's definitions above, explicitation and implicitation establish a relation between two texts or discourses, in this case source

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[1] This circularity is also present in other canonical definitions, for example Klaudy's widely accepted definition of explicitation being "the technique of making explicit in the target text information that is implicit in the source text." (Klaudy 1998/2009: 104).

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texts and target texts. Explicitation and implicitation therefore require a "Prätext" ('pre-text', Schreiber 1993: 9) against which the two phenomena can be established. Explicitness and implicitness, on the other hand, are first and foremost "monotextual" or "monodiscoursive" phenomena, that can be viewed from a microscopic and a macroscopic perspective. From the microscopic perspective, the terms refer to the linguistic encoding of information and describe, for a given utterance, the relationship between information that is overtly linguistically encoded (explicit) and information that has to be inferred (i.e. that is implicit) in order to arrive at a full interpretation of the utterance (Baumgarten/Meyer/Özçetin 2008: 177-178). This perspective thus focuses on "the lexical and grammatical material on the surface of the linguistic structure" (Baumgarten/Meyer/Özçetin 2008: 179). Explicitness and implicitness are therefore inherent features of all linguistic structures and utterances, since no structure or utterance can ever be fully explicit or implicit but always involves a dynamic interaction between these two meaning components. The macroscopic perspective views explicitness and implicitness as "a property of texts and discourses" (Baumgarten/Meyer/Özçetin 2008: 179) and highlights the functional or pragmatic dimension of the two concepts. From this perspective, texts or discourses exhibiting a high degree of explicitness project the context (i.e. the implicit component of communication) as fully as possible into the text and thus allow an isolated understanding outside of their context of production (von Hahn 1998: 383).

It can thus be summarized that while explicitation and implicitation refer to a specific intertextual relation between source text and target text, explicitness and implicitness refer to general features of text and discourse that can be present in different degrees. If, on a certain level, a given source text exhibits lower explicitness/ higher implicitness than the corresponding target text, this would be treated as potential evidence of explicitation and vice versa. It follows from the close interrelation of the two concept pairs that a sound definition and application of the concepts of explicitation and implicitation must be based on an equally sound theoretical account of explicitness and (especially) implicitness. As argued above, however, such an account is often missing in studies of explicitation and implicitation, leading to potential problems in the empirical application of the two concepts.

3 Some Conceptual Issues in Explicitation and Implicitation Research

Focusing on the explicitation concept, Kamenická (2007: 46) gives a possible explanation for this general lack of theoretical awareness of its high complexity, which stands in stark contrast to the popularity of explicitation in empirical terms. When postulating the Explicitation Hypothesis, Blum-Kulka (1986: 19) restricted her notion of explicitation to cohesive shifts. Since these shifts are easily identifiable on the textual surface, Blum-Kulka was not obliged to address the shortcomings of Vinay and Darbelnet's definition(s). Studies in the tradition of her Explicitation Hypothesis have then widened

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this reductionist approach and extended the notion of explicitation to features beyond cohesive markers (Pym 2005: 32), often still without committing to a more detailed definition of the concept that would resolve the issues mentioned above. This is highly problematic, since in its wider (and arguably more interesting) conception, explicitation is not only a feature that is objectively analyzable by establishing the presence or absence of cohesive markers in the target text, but which can also manifest itself within fuzzier boundaries, e.g. in the form of a higher specificity of target-language expressions or the verbalization of new "meaningful elements" (Klaudy/Károly 2005: 15) in the target text without there being an obvious triggering element in the source text (cf. Steiner 2005: 17).

This latter point is of special interest, and it will be used to illustrate briefly the potential problems facing studies of explicitation and implicitation and the need for a sound theoretical basis for the two concepts. The introduction of new meaningful elements into the target text (and, if we want to bring implicitation into the picture, the deletion of meaningful source text elements in the target text) touches upon two central distinctions which have often been ignored in explicitation and implicitation research,[2] namely the distinction between explicitation and addition and the distinction between implicitation and omission (see Kamenická 2007: 50-51). These distinctions and the problems associated with them are intrinsically linked to the equally problematic concept of implicitness[3] discussed above.

The distinction between explicitation and addition is concerned with the extent to which new information introduced in the target text can reasonably be claimed to be implicit in the source text. The distinction between implicitation and omission, on the other hand, is concerned with the extent to which information that is explicitly encoded in the source text but not in the target text can be said to be implicit in the target text. If a certain piece of information that is verbalized in the target text is absent from the source text and not deemed to be implicit in it, this would be considered an instance of addition. The distinction between explicitation and addition is captured very clearly by Schreiber:

> Bei der *Explikation* müssen die im ZS-Text 'hinzugefügten', bezeichnungsrelevanten Informationen im AS-Text implizit enthalten, d. h. aus dem AS-Text erschließbar sein oder bei den AS-Text-Empfängern als 'selbstverständlich' vorausgesetzt werden können – anderenfalls handelt es sich um eine *Addition*. (Schreiber 1993: 229)
> '*Explicitation* means that the […] information 'added' to the TL text must be implicitly contained in the SL text, i.e. it must be inferable from the SL text or be regarded as common knowledge of the SL text recipients, otherwise this is referred to as an *addition*.'
> (my translation)

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[2] With notable exceptions, especially Steiner (2005), Hansen-Schirra/Neumann/Steiner (2007) and Kamenická (2007).

[3] The notion of "explicitness" is somewhat more straightforward, since it refers to overtly encoded information. Since this information is present at the textual surface, it can be intersubjectively analyzed. This is not the case with implicit information, which is by definition invisible and therefore bound to be more controversial.

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On the other hand, if a certain piece of information that is verbalized in the source text is absent from the target text and not deemed to be implicit in it, this would be considered an instance of omission. Again, Schreiber gives a clear description of the difference between implicitation and omission:

> Bei der *Implikation* müssen dementsprechend die 'weggelassenen' Informationen aus dem ZS-Text erschließbar sein oder bei den ZS-Text-Empfängern als 'selbstverständlich' vorausgesetzt werden können – anderenfalls handelt es sich um eine *Omission*.
> (Schreiber 1993: 229)
> *'Implicitation* means that the information 'left out' of the TL text must be inferable from the TL text or must be regarded as common knowledge of the TL text recipients, otherwise this is referred to as an *omission* […].'   (my translation)

Although these distinctions seem intuitively plausible, they are far from straightforward, due to their intrinsic relation to the somewhat fuzzy concept of implicitness as described above. The possible difficulties involved in discussing potential instances of explicitation and implicitation will be briefly illustrated with three examples. The first two examples are taken from an ongoing PhD project that investigates the interface between text and context in scientific and technical translation. The third example is taken from House (2002).

Example 1
EN: [...] there are three main approaches to capturing the CO_2 generated from a primary
fossil fuel [...].
DE: [...] es [gibt] drei Hauptansätze zur Abtrennung des **bei der Verbrennung** eines
fossilen Primärenergieträgers [...] entstandenen CO_2.

The first example should be rather uncontroversial. Here, the prepositional phrase *bei der Verbrennung* ('by burning') was inserted in the translation, thus making the production of the CO_2 more explicit than the source text. This information (i.e. that CO_2 is generated by *burning* a fossil fuel) is probably highly accessible in this context due to general knowledge pertaining to CO_2 and due to the presence of the participial construction *generated from a primary fossil fuel*. This example could therefore be classified as a clear-cut case of explicitation.

Example 2
EN: In addition, the Ni-resist insert […] was not necessary for this study, as test lengths
were **only** 10 to 20 hours.
DE: Darüber hinaus war der Ni-resist-Einsatz […] nicht erforderlich, da die Versuchs-
zeiträume zwischen 10 und 20 Std. lagen.

The second example is somewhat less clear-cut than the first one. What is of specific interest here is the English source text adverb *only*, which has no equivalent in the German target text. In Klaudy and Károly's terms (see above), we are thus faced with the deletion of a "meaningful element" in the target text. As a result, the information that within the context above, 10 to 20 hours is a relatively short test length[4] is not overtly

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4   The text refers to a diesel engine test conducted to measure the effects of piston temperature and
fuel sulfur on piston deposits.

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encoded in the target text. But can it be claimed to be implicit in it? The presence of the term *Ni-resist-Einsatz* could be taken as an argument for the implicitness of this information, since *Ni-resist* is a material that exhibits, among other properties, an excellent wear resistance. If this material is not needed, this is possibly because no wear is to be expected, probably because the test lengths are rather short, i.e. *only* 10 to 20 hours. This interpretation is reinforced by the causal conjunction *as/da*, which makes explicit that the insert is not needed because of the test length. If this information is present to us, we are likely to claim that the information *only* is recoverable from the context and would classify the above shift as implicitation and not as omission. However, it may be more difficult to reach an intersubjective consensus here than with the first example (as evidenced by the length of the argument made for classifying this shift as implicitation).

Example 3
EN: Treatment may reduce the chance of contracting HIV infection after a risky encounter.
DE: Eine sofortige Behandlung nach Kontakt mit einer Ansteckungsquelle verringert unter Umständen die Gefahr, dass sich das Human-Immunschwäche-Virus im Körper festsetzt. **Gewähr gibt es keine, zudem erwachsen eigene Risiken**.

(House 2002: 205)

The third example was included here because it seems to cross the borderline between explicitation and addition described above. With this example, House intends to illustrate "the ubiquitous explicitation and expansion of information found in most [...] German popular science texts" (House 2002: 204-205). The information in question is encoded in the sentence in bold, which was added in the German translation ('There is no guarantee, also, there are specific risks involved.'). The first part of the sentence ('There is no guarantee for the success of an immediate treatment') can be claimed to be implicit in the source text, since the source text uses the modal construction *may reduce the chance* (rendered by the prepositional phrase *unter Umständen* in German). However, it is difficult to see how the second part of the sentence ('Such a treatment carries its own risks') can be implicit in the source text. There are neither any cotextual clues, nor can this information be claimed to be common knowledge of the intended readership (the source text is an article from *Scientific American*, which is a popular science magazine addressing an informed layperson readership). Therefore, we are likely to classify this shift not as an instance of explicitation, but rather as an instance of addition.

What is important with regard to these examples (which will be revisited later in the article) is how we can cast intuitive judgements as those discussed above in sounder theoretical terms in order to allow for a more transparent and intersubjective discourse about them. As Pym pointedly remarks in this context, the problem is that if we are talking about 'implicit content', we are forced to make statements about "content [that] is paradoxically held to be at once hidden and obviously available to all" (Pym 2005: 34). With regard to explicitation research, Pym concludes that "any braver notion of explicitation [that goes beyond cohesive shifts observable on the textual surface] must address more than a few problems in the philosophy of language" (Pym 2005: 34).

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4   The Need for a Suitable Linguistic Framework

I would not go so far as to claim that no meaningful study of explicitation and implicitation in their wider conception is possible without engaging in abstract philosophical debates about the existence and the potential form of linguistic meaning. In my opinion, however, what is a *desideratum* in explicitation and implicitation research is a coherent linguistic framework that can serve as the basis for modelling the various complex aspects of explicitation and implicitation, the notion of implicitness and the distinction between explicitation/implicitation and addition/omission among them. This call for a linguistic framework is of course not intended to mean that linguistics can provide an exhaustive explanatory tool for all aspects of translation. Functionalism, the theory of translational action as well as the cultural, social and cognitive turns in translation studies have demonstrated the multilayered nature of translation (which is by no means restricted to the relation between source and target text) and the multiple perspectives from which it can be studied. At the same time, however, it cannot be ignored that a major part of translation does indeed involve an operation on language, and a lot of interesting translational phenomena (explicitation and implicitation among them) exhibit a linguistic dimension. To make sound statements about these important but by no means exclusive aspects of translation, a grounding in an equally sound linguistic framework is desirable. Generally speaking, this framework should be flexible enough to provide an interface with more macroscopic approaches to translation. More to the point of this article, it should also have something to say about the "underdeterminacy" of language (see e.g. Carston 2002: 19), which is the theoretical label for the trivial fact that in communication, we understand more than the words actually uttered, namely content that is, in Pym's words, at once hidden and at the same time available to speaker/writer, hearer/reader and the researcher investigating instances of their communication.

A framework that satisfies both the general as well as the specific requirements laid out above can be found in cognitive linguistics (CL), which underpins the work of leading linguists like Fillmore (1982), Lakoff (1987) and Langacker (1987) and which has been applied in translation studies for example by Neubert and Shreve (1992), Tabakowska (1993) and more recently by Halverson (e.g. 2003, 2007). Halverson is also a major advocate of the research strand termed "cognitive translation studies" (see Halverson 2010) and, to my best knowledge, she was among the first to establish a general link between cognitive linguistics and explicitation. In her article "A Cognitive Linguistic Approach to Translation Shifts", Halverson (2007) reviews the central cognitive linguistic notion of 'linguistic construal' and situates various translation shifts and alleged translational universals (explicitation being among them) within the model of linguistic construal operations developed by Croft and Cruse (2004). Another interesting link between cognitive linguistics and explicitation and implicitation research

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is established by Kamenická (2007), who applies Fillmore's frame semantics[5] in order to model the implicit information underlying overt textual structures. According to Kamenická (2007: 54), the question of whether a certain piece of information can be claimed to be implicit in a text is a function of the relative saliency of this information in a given frame indexed by a particular word or construction.

In my opinion, both Halverson's and Kamenická's approaches are very promising and show considerable explanatory potential with regard to explicitation and implicitation research. Whereas Halverson's approach is more useful for situating explicitation and implicitation within the overall framework of cognitive linguistics, Kamenická's approach is more concerned with the investigation of specific textual occurrences of these phenomena. However, both approaches are rather tentative in nature and do not give an exhaustive account of explicitation and implicitation in cognitive linguistic terms. In the following sections, I will present a sketch of what such an account may look like.

5 A Brief Overview of Cognitive Linguistics

The framework of cognitive linguistics was developed in the late 1970s and aims to provide a holistic account of language in terms of general human cognitive abilities, such as attention, memory, perception, etc. (Dirven 1991/2002: 76). Since cognitive linguistics regards language as an integral part of general human cognition, it is opposed to the autonomous, modular and abstract approach to language as pro-pagated for example by Chomskyan generative grammar (Taylor 2002: 7). Cognitive linguistics also rejects the Saussurean dichotomy of *langue* vs. *parole* (Dirven 1991/2002: 76) and instead follows a "usage-based" approach to language according to which "knowledge of language emerges from language use" (Croft/Cruse 2004: 1). According to Evans and Green (2006: 28ff), cognitive linguistics is based on two fundamental assumptions, which the authors call the *generalisation commitment* and the *cognitive commitment*. The generalisation commitment entails a search for common structuring principles that apply to different aspects of language. So for example, in cognitive linguistics there is no sharp distinction between semantics and syntax (both are in fact treated as symbolic systems, see Taylor 2002: 25) or between semantic and pragmatic meaning. The cognitive commitment requires that the structuring principles postulated in cognitive linguistics should reflect insights into human cognition gained in other disciplines, in particular the cognitive sciences (Evans/Green 2006: 40). In line

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[5] Kamenická works with Fillmore's later version of the frame concept, according to which frames are "conceptual structures that underlie [the meaning of linguistic units] and that motivate their use" (Fillmore 1994/2006: 613). This contrasts with the earlier distinction between scenes as cognitive, con-ceptual or experiential entities and frames as linguistic ones. In later work, the scene concept was discarded and the frame concept was raised from linguistic to cognitive status (Petruck 1996: 1; see also Busse 2012: 94). It seems that Fillmore's later work on frame semantics has been largely ignored by translation studies, where the earlier version of scenes and frames semantics is still prevalent (see for example Kußmaul 2007/2010).

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with this commitment, cognitive linguists try to give an account of linguistic phenomena that is plausible from a cognitive point of view.

Evans and Green (2006: 48) broadly divide the framework of cognitive linguistics into the two main areas of *cognitive semantics* and *cognitive (approaches to) grammar*.[6] Since, according to cognitive linguistics, grammar is not just a system of combinatory rules and principles but rather a meaningful system itself, "a cognitive grammar assumes a cognitive semantics and is dependent upon it" (Evans/Green 2006: 47).

Another basic tenet within cognitive linguistics and more specifically in cognitive semantics is that linguistic meaning is conceptual in nature (Langacker 2008: 4), the locus of meaning thus being the mind of individual speakers and hearers (Langacker 2008: 27-28).[7] Accordingly, cognitive linguistics/semantics, rejects the "dictionary" view of word meaning adopted by formal and structural semantics, which postulates a strict division between Aristotelian *essentialia* and *accidentialia*, with the essential or definitional properties of an entity constituting its dictionary meaning (semantic meaning), while the contingent properties constitute encyclopaedic information (pragmatic meaning) (Marmaridou 2000: 45). Instead, cognitive semantics adopts an "encyclopaedic" view of word meaning, according to which words do not have a clearly delimited essential or dictionary meaning but rather serve as 'points of access' to or 'prompts' for the rich conceptual structures which provide the main input for meaning construction (Evans/ Green 2006: 214). Cognitive linguistics is therefore fundamentally at odds with current debates in the Neo-Gricean and Post-Gricean traditions of Anglo-American pragmatics, which are concerned with the "division of labour" between semantics and pragmatics and the "pragmatic intrusion into the classical Gricean notion of what is said" (Huang 2007: 216). Since cognitive semantics specifically endorses the conceptual nature of linguistic meaning, it has developed fine-grained tools for modelling the implicit conceptual structures underlying overtly encoded textual structures of a given usage event.[8]

6 Explicitation and Implicitation in the Cognitive Linguistic Framework

In the following sections, I will first situate explicitation and implicitation in the wider context of linguistic construal operations developed in cognitive linguistics and thus

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[6] The authors use the addition "approaches to", since "Cognitive Grammar" is the name of a specific theory developed by Langacker (1987) (see Evans/Green 2006: 49).

[7] A list of objections raised by standard linguistic theory against a conceptual approach to meaning (together with a refutation of the various points of criticism) can be found in Taylor (2002: 61ff). For a spirited defence of cognitive semantics against "its cultured despisers" see also Busse (2012: 788ff).

[8] Langacker defines the term *usage event* as "a symbolic expression assembled by a speaker in a particular set of circumstances for a particular purpose" (Langacker 1987: 66). Thus, a "usage event" is the cognitive linguistic term for an "utterance" (see Evans/Green 2006: 109).

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establish a link between explicitation and implicitation and general human cognitive abilities as reflected in language and language use. Then, the focus will be shifted to cognitive semantics and its specific means of modelling implicit knowledge structures. In this context, I will present Langacker's theory of domains (1987), which shows parallels to and complements Fillmore's frame semantics, and I will illustrate how important aspects of explicitation and implicitation can be accounted for within this theory.

6.1 Explicitation and Implicitation as Cross-linguistic Construal Operations

The conceptualisation of explicitation and implicitation as cross-linguistic construal operations shows parallels to Halverson's (2007) approach discussed above. In cognitive linguistics, linguistic meaning is seen as involving two components, a particular *conceptual content* and a specific way of *construing* this content, *construal* here referring to "our manifest ability to conceive and portray the same situation in alternate ways" (Langacker 2008: 43). Langacker (2008: 55) compares the conceptual content to a scene[9] and the construal of this content to a particular way of viewing this scene. He gives the example of a glass of water in which the water occupies about half of the volume of the glass (Langacker 2008: 43-44). According to Langacker, this content (i.e. a glass half filled with water) can be evoked in a rather neutral way at the conceptual level. If, however, this conceptual content is to be linguistically encoded, a certain construal is necessarily imposed. For example, *the glass with water in it* would highlight the container of the water, whereas *the water in the glass* would highlight the liquid inside the container. Langacker stresses in this context that there is no clear-cut distinction between conceptual content and the construal of this content but that these two aspects are intrinsically related; for example, the more specific construal *the glass with water in it* may evoke more content than the more abstract construal *the container with liquid in it* (in the second example, contextual input would be required to arrive at the more specific construal). As already mentioned, cognitive linguists reject the view of language as an autonomous cognitive faculty but instead claim that it is based on the same cognitive abilities that humans demonstrate outside the realm of language. In line with the cognitive commitment, the linguistic construal processes proposed in cognitive linguistics are therefore derived from general cognitive processes established for example by cognitive psychology (Halverson 2007: 113; Langacker 2008: 45), thus ensuring the cognitive plausibility of this account.

In the following sections, two influential models of linguistic construal operations will be presented. The model proposed by Langacker (2008) builds on the original account of linguistic construal developed by the same author (Langacker 1987)[10] and

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[9] The notion of *scene* is used in a pretheoretical sense here and is not to be confused with the scene concept in the early work of Fillmore.

[10] In his original account, Langacker used the possibly misleading and – in his own words – "somewhat idiosyncratic" term "imagery" to describe the phenomenon that a given situation can be mentally and linguistically construed in different ways (Langacker 1987: 110). He later acknowledged this unfortunate choice of terminology and changed it to the more transparent term "construal" (Langacker 2008: 43).

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provides a straightforward and intuitively appealing classification of different construal operations. Croft and Cruse (2004) review Langacker's original model as well as Talmy's (e.g. 2000) model of *imaging systems* and Johnson's (1987) account of *image schemas* and develop a holistic model that tries to integrate the various previous approaches. The present article does not have any bias towards one of the two models, which are highly complementary anyway. Instead, it focuses on identifying possible construal operations in both models that would provide a cognitively plausible account of explicitation and implicitation.

6.1.1 Langacker's Model of Linguistic Construal Operations

Using the metaphor of visual perception, Langacker (2008: 55ff) compares the construal of a particular conceptual content to the viewing of a scene (see above) and divides this process into four major steps: "In viewing a scene, what we actually see depends on how closely we examine it, what we choose to look at, which elements we pay most attention to, and where we view it from" (Langacker 2008: 55). Accordingly, he distinguishes between the following four major construal operations:

| LINGUISTIC CONSTRUAL OPERATIONS – LANGACKER			
SPECIFICITY	FOCUSING FOREGROUND/BACKGROUND COMPOSITION SCOPE	PROMINENCE PROFILING TRAJECTOR/LANDMARK	PERSPECTIVE VIEWING ARRANGEMENT DYNAMICITY
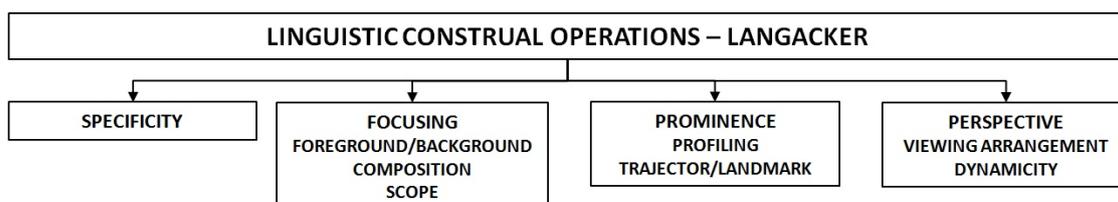
Fig. 1: Langacker's (2008) model of linguistic construal operations (my diagram)

In this model, *specificity* refers to "the level of precision and detail at which a situation is characterised" (Langacker 2008: 55), while *focusing* involves "the selection of conceptual content for linguistic presentation, as well as its arrangement into […] foreground vs. background" (Langacker 2008: 57, boldface removed).[11] *Prominence* is concerned with the relative saliency of various aspects of a structure foregrounded in the process of focusing (Langacker 2008: 66), and *perspective* describes the vantage point from which a given scene is viewed (Langacker 2008: 73).

Obviously, it is the construal operation of *specificity* that is of special interest to the present article, since it is concerned with the level of detail with which we examine or construe a scene. While describing the temperature, for example, we could say that it is *hot*, *in the 90s*, *about 95 degrees*, or *exactly 95.2 degrees* (Langacker 2008: 55) and

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[11] The linguistic foreground–background arrangement identified by Langacker exhibits a direct connection with the general cognitive principle of figure–ground segregation established by Gestalt psychology (Evans/Green 2006: 65; see also Tabakowska 1993: 47). It is therefore a good illustration of cognitive linguistics' commitment to cognitive plausibility in explaining linguistic phenomena.

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would thus describe a given situation with progressively greater specificity.[12] The counterpart of specificity would be *schematicity*, which means that going from more specific to less specific construals entails a progressively greater schematicity. The notion of *schema* is of particular importance in this context. Taylor (2002: 591) defines a schema as "an 'abstract' or 'course-grained' [sic!] representation *vis-à-vis* its more fully specified instances", where the schema is elaborated in contrasting ways by such instances. According to Langacker (1987: 132), a schema is abstract relative to its various elaborations because it provides less information and is compatible with a broader range of options. Langacker (2008: 56) further points out that construal processes along the specificity/schematicity dimension can apply both to lexical items – which corresponds to the different levels in a taxonomy – or to novel expressions such as complete sentences. On the level of lexical items, for example, the expression *tool* would be schematic for its instances *hammer* and *saw*, whereas *hammer*, in turn, could be further instantiated or elaborated by *ball-peen hammer*, *cross-peen hammer*, etc.[13] On the level of novel expressions, on the other hand, the construal *Something happened* (Langacker 2008: 56) would be maximally schematic and could be instantiated by the more specific construal *A person perceived a rodent*. This construal is again schematic with regard to the person and the rodent (and, in fact, with regard to many other aspects as well) and could in turn be instantiated by *A girl saw a porcupine*, or *An alert little girl wearing glasses caught a brief glimpse of a ferocious porcupine with sharp quills*, and so on. The notions of specificity and schematicity thus describe the "precision of specification along one or more parameters, hence [...] the degree of restriction imposed on possible values along these parameters" (Langacker 1987: 132).

Specificity and schematicity are closely related to the view on explicitness and implicitness as adopted in the present article. From the microscopic perspective, specificity and explicitness would refer to that part of a given conceptual content that is overtly linguistically encoded while schematicity and implicitness refer to that part of the content which underlies the overtly encoded part as "conceptual substrate" (Langacker 2008: 42) and which needs to be contextually inferred to arrive at the full content to be communicated. From the macroscopic perspective, we could say that the more specific the construal of a certain situation, the more contextual information is projected into the text (cf. von Hahn 1998: 383). On the other hand, the more schematic a construal, the more it has to be fleshed out with contextually inferable details. The notions of explicitness and implicitness thus betray a textual or linguistic perspective while specificity and schematicity "construe" basically the same phenomena from a cognitive point of view.

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[12] It should be obvious from this example that while Langacker's construal operations have a certain visual bias (as evidenced by his notion of a scene that can be viewed from different perspectives), they also encompass construals of a more abstract nature (in the example above, it is hard to find an immediate visual correspondence to the different construals of temperature, unless we use the analogy of a thermometer).

[13] Cognitive linguistics does not use the terms *hypernym* and *hyponym* in this context, because these terms are restricted to semantic relations. In cognitive linguistics, however, a schema-instance relation can also hold between phonological and symbolic units, and the concepts are also applicable to aspects of non-linguistic cognition, for example visual perception (see Taylor 2002: 124, 127).

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Within this framework, explicitation would occur when a given situation[14] construed schematically in the source text is construed more specifically in the target text. In contrast, implicitation occurs when a situation described specifically in the source text is rendered more schematically in the target text. Explicitation and implicitation thus arise from a difference between the construal of a given source text and the construal of the corresponding target text and can therefore be characterized as cross-linguistic construal operations.

6.1.2 Croft and Cruse's Model of Linguistic Construal Operations

Croft and Cruse (2004: 46ff) also group their linguistic construal operations under four main headings; however, since the authors adopt a more encompassing approach, their model contains a finer sub-classification than the one proposed by Langacker:

LINGUISTIC CONSTRUAL OPERATIONS – CROFT AND CRUSE			
ATTENTION/SALIENCE SELECTION SCOPE SCALAR ADJUSTMENT DYNAMIC	**JUDGEMENT/COMPARISON** CATEGORIZATION (FRAMING) METAPHOR FIGURE/GROUND	**PERSPECTIVE/SITUATEDNESS** VIEWPOINT DEIXIS SUBJECTIVITY/OBJECTIVITY	**CONSTITUTION/GESTALT** STRUCTURAL SCHEMATIZATION FORCE DYNAMICS RELATIONALITY
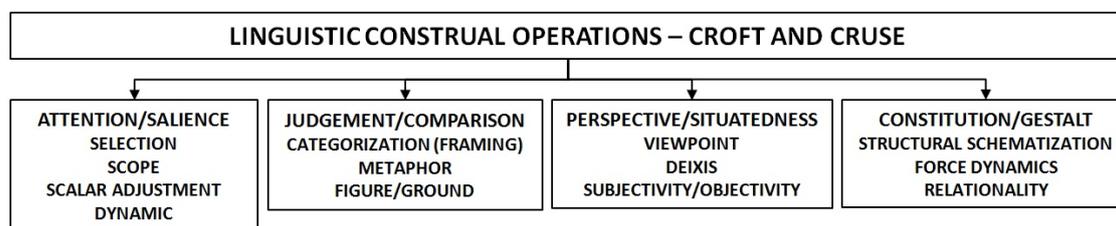
Fig. 2: Croft and Cruse's (2004) model of linguistic construal operations (my diagram)

In this model, *attention/salience* refers to a gradable process which is comparable to Chafe's (1994: 26-30) concept of *focus of consciousness* (Croft/Cruse 2004: 46). The construal operations under this heading have considerable overlaps with Langacker's notions of specificity, focusing and prominence. *Judgement/comparison* is based on the Kantian concept of *Urteilskraft* (Croft/Cruse 2004: 54) and roughly covers the human ability to categorize, i.e. to grasp what is common to different experiences and to group them together in one conceptual category. The construal operations involved here do not have a straightforward counterpart in Langacker's model (except for figure-

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[14] Of course, the intuitive notion of a language-independent "situation" which is conceived purely at the conceptual level and can serve as a stable *tertium comparationis* between source and target text is problematic from an epistemological point of view (cf. Halverson 2007: 119; Siever 2010: 65ff), since it raises the difficult question of the autonomy of thought *vis-à-vis* language as discussed within the context of linguistic relativity and linguistic determinism. This complex issue cannot be properly addressed here. Suffice it to say that cognitive linguistics subscribes to a weak version of the Sapir-Whorf hypothesis and its claim about the influence of language on thought (see, for example, Whorf 1956: 213) and views language as a 'shaper' (instead of 'determiner') of thought (Evans/Green 2006: 101), thus attributing a certain degree of autonomy to thought. Also, from the grounding of cognitive linguistics in the philosophy of embodied realism (Lakoff/Johnson 1999) it follows that cognitive linguistics attributes a common conceptualising capacity to humans that can, but by no means has to, give rise to different linguistically reflected conceptual systems (Lakoff 1987: 303). There is thus no *a priori* reason to assume that a given part of the world is always conceptualised in incompatible ways by speakers of different languages, just as there is no *a priori* reason to assume that this conceptualisation is always identical.

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ground segregation, which is a recurring theme in his model). *Perspective/situatedness* goes back to Heidegger's notion of *In-der-Welt-sein* ('Being-in-the-world', Heidegger 1927/1979) and accounts for the fact that, as humans, we are never objective observers dissociated from a situation, but instead we are always *in* a situation and have to construe it from a certain perspective (Croft/Cruse 2004: 58-59). This concept has strong overlaps with Langacker's construal operation of perspective and provides a link between the present discussion of linguistic construal and the cognitive semantic account to be discussed later. The concept of *constitution/gestalt*, finally, refers to "the conceptualization of the very structure of the entities in a scene" (Croft/Cruse 2004: 63) and is linked to Gestalt psychology and phenomenology. This concept also lacks a straightforward counterpart in Langacker's classification.

The concept relevant to the present discussion of explicitation and implicitation is the notion of "scalar adjustment", a subcategory of the construal operation "attention/salience" (see also Halverson 2007: 114). In line with the higher overall granularity of their model, the authors propose a further subclassification of scalar adjustment into *quantitative* scalar adjustment and *qualitative* scalar adjustment.

A quantitative scalar adjustment refers to "the construal of an object by adjusting the granularity of the scalar dimensions" (Croft/Cruse 2004: 52). The authors give the example *She ran across the field* vs. *She ran through the field* and argue that the second sentence construes the scene in a more fine-grained way, since in this sentence the field is construed as a three-dimensional surface (by evoking the thickness of the field), whereas it is construed as a two-dimensional surface in the first sentence. A quantitative scalar adjustment would also be possible along the temporal dimension. Whereas the simple present in *Conor lives in New York City* construes the time frame in New York as permanent or long-term, the present progressive in *Connor is living in New York City* construes the time frame as short-term or temporary and thus evokes a finer-grained scale (Croft/Cruse 2004: 41, 52).

A qualitative scalar adjustment, on the other hand, involves "viewing something by means of a more encompassing category" (Croft/Cruse 2004: 52-53). With reference to Langacker's (1987) original model, the authors also call this construal operation "schematization". For example, the difference between *polygon* and *triangle* would be a qualitative scalar adjustment, since the latter specifies the exact number of sides of the shape whereas the former is indeterminate in this respect. The difference between quantitative and qualitative scalar adjustment is therefore that in the first case, the construal leaves out or adds a measurable scale or dimension, whereas in the second case, the construal leaves out or adds certain properties (Croft/Cruse 2004).

6.1.3 Comparing the Two Models with Regard to Their Applicability to Explicitation and Implicitation

Comparing Croft and Cruse's notions of quantitative/qualitative scalar adjustment to Langacker's notions of specificity/schematicity, the following points may be noted. First, while Croft and Cruse provide a finer sub-classification of this construal operation than

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Langacker, their choice of terminology is more schematic. While with *specific* and *schematic* there is one term for each direction on the granularity continuum, *scalar adjustment* leaves the directionality indeterminate and has to be further qualified (e.g. *downward/upward* scalar adjustment). Second, it seems that scalar adjustment primarily operates on entities that are already specified in a scene (e.g. the motion across/through a field or the concept of a polygon or a triangle), whereas specificity/ schematicity, especially in the context of novel expressions, can accommodate more readily the introduction of new entities that were lacking in a more coarse-grained construal of the scene. For example, moving from the more schematic construal *Something happened* to the more specific construal *A girl saw a porcupine*, a new agent and a new patient are introduced, which, depending on the context, can be claimed to be implicit/schematic in the previous construal. However, this seems difficult to capture by the notion of scalar adjustment, unless we treat the whole event as a category and qualify the more specific construal as a qualitative scalar adjustment of this event category. Third, it seems that, contrary to qualitative scalar adjustment, quantitative scalar adjustment is not directly related to explicitation and implicitation.[15] Going back to the example *She ran across/through the field*, it is difficult to see how the introduction of the third spatial dimension in the construal *through the field* could be classified as more explicit that the construal *across the field* (i.e., in what sense could this spatial dimension be claimed to be implicit in the first construal?). Also, the temporary or short-term character of the stay in *Connor is living in New York City* cannot be claimed to be implicit in the construal *Connor lives in New York City*. Rather, the interpretation *temporary* or *short-term* is ruled out by the present tense in this example.

Summing up, it seems that quantitative scalar adjustment is not directly relevant to explicitation and implicitation while qualitative scalar adjustment primarily operates on elements already specified in a scene and is difficult to apply to the introduction of new elements in the case of novel expressions. In light of these issues, it seems that Croft and Cruse's concept of scalar adjustment is less straightforwardly applicable to explicitation and implicitation than Langacker's more flexible and more encompassing notions of specificity and schematicity.[16] What seems to be clear, however, is that the translational phenomena of explicitation and implicitation correlate with general features of human cognition as reflected in language and language use, since they are more or less well covered by the two influential models of linguistic construal operations presented above.

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[15]   Halverson seems to categorize her example *when **material support** is not enough → når **pengene ikke strekker til*** ('when the **money** is not enough') (Halverson 2007: 116) as an instance of quantitative scalar adjustment (Halverson 2007: 114). However, this would rather be an instance of qualitative scalar adjustment, i.e. *money* would be an instantiation of the more schematic category *material support.*

[16]   I will therefore base the cognitive linguistic discussion of the examples at the end of the article on Langacker's model.

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6.1.4 Common Ground as a Link between Linguistic Construal and Cognitive Semantics

Croft and Cruse's category of *perspective/situatedness* contains another element with relevance to the present article, since it provides a link between the current discussion of linguistic construal operations and Langacker's cognitive semantic theory of domains to be discussed later. Within the subcategory of *deixis*, Croft and Cruse (2004: 60) introduce the notion of *epistemic perspective*, which situates the speaker and the hearer in a given communicative context with reference to "the shared knowledge, belief and attitudes of the interlocutors". The authors link this notion of epistemic perspective to Clark's (1996) concept of *common ground*, which will be illustrated briefly later in this section. Basically, what Croft and Cruse claim is that the epistemic perspective situating speaker and hearer determines which information will be verbalized in a text in the first place and it stands to reason that it will also determine the linguistic construal of this information along the specificity/schematicity or the explicitness/implicitness dimension. The concept of *epistemic perspective* theoretically captures the intuitive understanding that in communication one should not say more than is required in a given situation, especially with regard to what is supposed to be already known by the interlocutor.[17] The relative specificity or schematicity of a given text can therefore be claimed to be a function of the speaker's epistemic perspective on the hearer and his or her previous knowledge, which can be presupposed as given in the current discourse. The epistemic perspective thus provides a link between the concept of linguistic construal and the hermeneutic author-text-recipient configuration that forms the basis of many translation process models or general communication models (for a comprehensive overview of such models, see Schubert 2007: 217ff).

As already mentioned, the notion of epistemic perspective is closely linked to the concept of *common ground* (called 'epistemic ground' by Langacker 1987: 127), which was originally introduced in theoretical discourse by Stalnaker (2002: 151; cf. Clark 1996: 93). However, the major theoretical contribution to this concept is generally attributed to Clark (1996). Clark defines the common ground between two people as "the sum of their mutual, common or joint knowledge, beliefs and suppositions" (Clark 1996: 93) and distinguishes two types of common ground, namely *communal common ground* and *personal common ground* (Clark 1996: 100ff). Communal common ground is closely linked to the notion of *cultural communities*, which are "set[s] of people with a shared expertise that other communities lack" (Clark 1996: 102). According to Clark, it is constitutive of such a community that there is a "shared system of beliefs, practices, nomenclature, conventions, values, skills, and knowledge" (Clark 1996: 103) about a certain set of phenomena. Examples for the shared expertise that binds a cultural community together are nationality, residence, education, occupation, employment, etc. The common ground concept can thus be used to model the shared knowledge of a

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[17] Cf. Grice's co-operative principle and especially his conversational maxims of quantity and relation (Huang 2007: 25) or Clark's (1992: 201) notion of "audience design".

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specific discourse community and thus provides a link between the conceptual and the social dimension of knowledge.[18]

The notion of common ground, besides providing a tool for making informed statements about the implicit knowledge structures underlying a given communicative act, may also be helpful if we want to model the notoriously difficult transition zones between explicitation/implicitation and addition/omission. As mentioned previously, Kamenická (2007: 54) claims in the context of frame semantics that the implicitness or non-implicitness of a certain piece of information is a function of the relative saliency of this information in a given frame. However, the information in a frame indexed by a particular lexical unit is not static but highly dynamic and depends on various contextual factors, the common ground between the interlocutors being a very important one. For example, the information in the frame indexed by the word *piston* will be much more extensive and detailed in expert-to-expert discourse (possibly containing information on the precise functioning principle of the piston, its location in the engine, the interaction with other engine parts, different types and sizes of pistons and their differences, but also information on adjacent concepts like PISTON RING, CYLINDER and FUEL and their specific characteristics and so on) than in expert-to-layperson discourse (in this case, the frame may contain only very schematic information on pistons). Common ground can thus be seen as an important structuring principle of the information in a frame indexed in a given discourse. According to Croft and Cruse, the shared expertise symbolized by common ground "is the conceptual structure that is found in the frame/domains of the concepts symbolized by the specialized vocabulary used by the members of the community" (Croft/Cruse 2004: 18). The question of whether some information introduced in the target text is implicit in the source text is therefore intrinsically linked to the question of whether the relevant information can be said to be part of the common ground between the interlocutors (however, the answer will also be influenced by other factors). If we reach the conclusion that it is indeed part of their common ground, we have found a possible reason for the absence of this information in the source text, i.e. the author(s) had some basis for the assumption that the intended readership already has this information, i.e. that it is part of their common ground and thus present and salient in the frames/domains indexed by particular expressions in the discourse; the author(s) may further have thought that in this case the intended readership can infer this information on the basis of the source text. It is this relationship between common ground and the dynamic structuring of frame/domain information that provides a direct link between linguistic construal and cognitive semantics as two theoretical contributors to explicitation and implicitation research.

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[18] It is not difficult to establish a connection between Clark's notions of communal common ground, cultural community and shared expertise and the different degrees of technicality of scientific and technical discourse as postulated within the context of research into languages for special purposes (e.g. Roelcke 1999/2010: 34ff) and translation studies (Arntz 2001: 194-195). These different degrees of technicality correlate with different epistemic perspectives situating author(s) and recipient(s) (e.g. in expert-to-expert communication or in expert-to-layperson communication; cf. Möhn 1979), which reflects different configurations of communal common ground between them.

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6.2   Linking Explicitation and Implicitation to Langacker's Cognitive Semantic Theory of Domains

The following attempt at modelling aspects of explicitation and implicitation in terms of Langacker's (1987) cognitive semantic theory of domains was inspired by Kamenická's (2007) application of frame semantics to explicitation and implicitation research. The theory of domains is concerned with the knowledge configurations underlying overtly encoded textual structures in actual discourse and may thus provide tools for modelling the implicit aspect of communication that is necessarily invoked in any study of explicitation and implicitation.

6.2.1 Frames vs. Domains

The theory of domains shows several parallels to Fillmore's frame semantics and complements this theory in various ways. Fillmore developed frame semantics in the context of his work on Case Grammar and Construction Grammar, whereas Langacker developed his theory of domains as a semantic basis for his Cognitive Grammar (Evans/Green 2006: 206).[19]   In the literature on cognitive semantics, the terms *frame* and *domain* are often used more or less interchangeably (e.g. Croft/Cruse 2004: 16-17; Evans/Green 2006: 206-207). A semantic *frame* is defined as a knowledge structure that is required in order to understand a particular word or a related set of words (Evans 2007: 192). In the same vein, a *domain* is defined as "any knowledge configuration which provides the context for the conceptualization of a semantic unit" (Taylor 2002: 196). The function of frames and domains is thus to provide background information which serves as the basis for understanding and using lexical concepts (Evans/Green 2006: 230). However, equating the notions of *frame* and *domain* is not as unproblematic as is often claimed in cognitive semantics literature. One of the important advancements of the theory of domains as compared to frame semantics is the insight that lexical concepts are usually complex in the sense that the encyclopaedic knowledge required for their full understanding is not structured in only one, but rather in several domains. Frame semantics on the other hand merely acknowledges that complex structuring is possible (Evans/Green 2006: 230-231). For example, the expression *glass* used in its ordinary sense as a container for drinking may evoke domains such as SHAPE [cylindrical, closed at one end], MATERIAL [usually the substance glass], SIZE [can normally be held in one hand], $FUNCTION_1$ [container for drinking], $FUNCTION_2$ [role in the process of drinking], etc. (Langacker 2008: 47). In frame semantics, this information would probably be subsumed under the frame indexed by the term *glass*, whereas in the theory of domains the information is distributed over various domains. Therefore, it seems that *frame* is a broader concept than *domain*. The set of domains that is accessed in a communicative situation and which provides the context for its full understanding is called its conceptual or domain matrix (Taylor 2002: 439; Langacker

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[19]   Recall the cognitive linguistic tenet that grammar is meaningful in itself and must be based on a proper account of cognitive semantics.

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2008: 47). If it is agreed that concepts are usually complex and characterized not against a single domain but rather against a domain matrix, a frame should therefore not be equated with a single domain but rather with a domain matrix (this is in line with Taylor's 1989/2003: 90 understanding of the concepts).

6.2.2 Structuring and Distribution of Information in Domains and Domain Matrices

The general problem with the structuring and distribution of information in domains and domain matrices is that the notion of *domain* is defined in such general terms that it can be applied in very different ways. For example, there is no uniform way of determining whether a given body of information is to be subsumed under one domain or to be distributed over several domains (for a similar criticism in the context of frame-based terminology, see Faber Benítez 2009: 122). Langacker points out in this context that

> [w]e should not expect to arrive at any exhaustive list of the domains in a matrix or any unique way to divide an expression's content among them – how many domains we recognize, and which ones, depends on our purpose and to some extent is arbitrary.
>
> (Langacker 2008: 44)

This lack of a universally applicable formalism that could resolve these problems is possibly the price that an encyclopaedic account of meaning has to pay. However, a formalism that could be useful with regard to the theory of domains is Pustejovsky's (1991) *qualia structure,* which structures semantic representations of an entity according to its relation to its substance or constituent parts (constitutive role), its perceptual identification (formal role), its purpose or function (telic role) and its genesis (agentive role). These roles are derived from Aristotle's four causes and therefore roughly correspond to the *causa materialis*, the *causa formalis*, the *causa efficiens* and the *causa finalis* (cf. Störig 1950/2003: 204). For each role, Pustejovsky (1991: 426-427) lists several values that the role may assume for a given linguistic expression. The four roles of the qualia structure together with their possible values can be represented as follows:
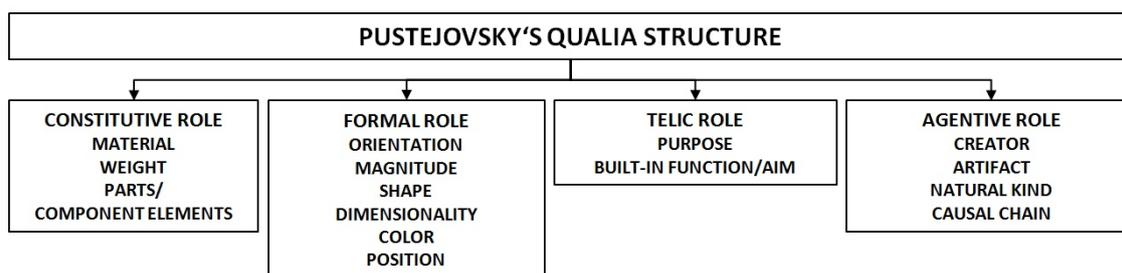
Fig. 3: Detailed overview of Pustejovsky's qualia structure (my diagram)

As Taylor (2002: 457) rightly points out, this classification seems primarily suitable for man-made artefacts (i.e. what would be the substance or the purpose of abstract concepts such as TIME or CULTURE?). However, Pustejovsky's qualia structure may

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well have a useful application in scientific and technical translation. Since science and technology are inherently teleological endeavours that involve, to a large extent, the fabrication or application of man-made artefacts or the human investigation and manipulation of natural forces, the qualia structure could probably be used as a kind of "core formalism" for structuring and distributing domain information in scientific and technical translation. We would just have to accept that not all the roles will assume a value on every occasion (e.g. *time* does not have any purpose) and that further (probably less clearly delimited) domains may be necessary that are not captured by the four roles and their values in the qualia structure.

6.2.3 The Profile-base Organisation

A further structuring principle of meaning in the theory of domains is the so-called profile-base organisation. According to Evans and Green (2006: 166-167), the profile of a linguistic unit is that part of its semantic structure upon which the linguistic unit focuses attention. The profile would thus be that part of the semantic structure that is explicitly mentioned. The base on the other hand is the essential part of the conceptual or domain matrix that is necessary for understanding the profiled entity (Evans/Green 2006: 237). For example, the expression *hypotenuse* profiles or designates the longest side of a right-angled triangle and provides a point of access to an open-ended inventory of knowledge relating to GEOMETRIC FIGURES, RIGHT-ANGLED TRIANGLES, TRIANGLES IN GENERAL, GEOMETRIC CALCULATION, MATHEMATICAL RELATIONS BETWEEN ELEMENTS OF A TRIANGLE, etc. These different knowledge configurations or domains constitute the expression's domain matrix. The knowledge which is necessary or essential for a full understanding of the lexical concept HYPOTENUSE (i.e. its base) would be reducible to a sub-part of this domain matrix and would probably just contain the concept RIGHT-ANGLED TRIANGLE. The relation between profile, base, domain and domain matrix is illustrated quite clearly in the following figure:
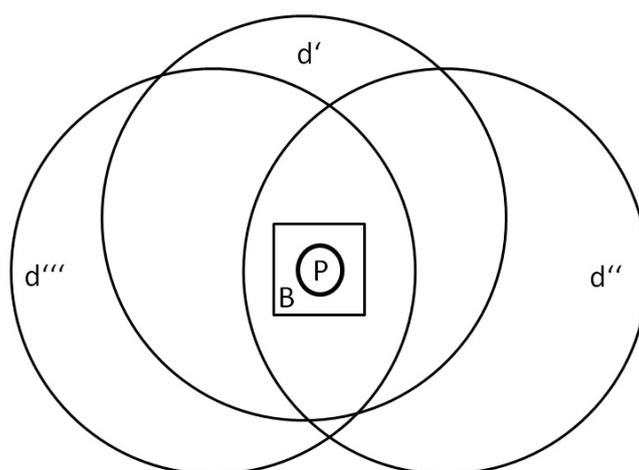
Fig. 4: The distinction between profile, base, domain and domain matrix (Taylor 2002: 197)

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This figure is to be understood as follows: A given expression profiles an entity P (the profile). This profiling takes place against the base B (containing the domain information essential for understanding the profiled entity). The profile-base relation is conceptualized against (usually overlapping) knowledge configurations which constitute the domains (here, d', d'' and d'''). The set of domains that serves as the overall knowledge configuration for the profile-base relation is called the domain matrix.

It has to be pointed out that isolating the "essential" part of the domain matrix, which constitutes the base of a given expression, is far from straightforward (this has also been acknowledged by Taylor 2002: 195). For highly structured concepts like HYPOTENUSE and RIGHT-ANGLED TRIANGLE, which exhibit a meronym/holonym relation, it may reasonably be claimed that the profiled meronym cannot be understood without knowledge about its holonym, which would therefore constitute its base. Trying to identify the essential knowledge required to understand highly abstract and less well-structured concepts such as CULTURE, we would possibly run into the same problems as dictionary theories of meaning, which try to isolate the essential properties of a word from its contingent properties.[20] For the purpose of the present article, I will therefore remain agnostic as to what constitutes the base of a given expression as compared to its domain matrix.

6.2.4 The Role of Context in the Theory of Domains

As was mentioned before, the structure and scope of the encyclopaedic information in the domain matrix that a linguistic unit provides access to is of course not static but highly dynamic and subject to processes of "contextual selection" and "contextual modulation" (see Cruse 1999/2011: 112-113). These contextual pressures exerted in a given discourse determine which domains of the matrix are actually activated, how much information can reasonably be claimed to be contained in the various domains and which information in these domains is foregrounded or made salient. The context of specific usage events thus gives rise to contextual or situated meaning (Evans/ Green 2006: 220), which is a further structured subpart of encyclopaedic meaning. The notion of context is of course an inherently fuzzy concept that, taking a macroscopic perspective, can be understood as "die ganze Welt relativ zum Äußerungsereignis" ('the whole world relative to the speech event', von Hahn 1998: 383, referring to Pinkal 1985: 36). For the present discussion, however, we can resort to the classical triad of knowledge context, discourse context/cotext and situational context, which covers what is often regarded as the three elementary context types (Aschenberg 1999: 9).

Returning to the example *glass* above, the contextual "shaping" of a domain matrix in a given discourse could be envisaged as follows. The discourse context of the sentence *Don't drop the glass* would probably foreground the domain MATERIAL in the matrix underlying the entity profiled by the word *glass*, at the same time backgrounding

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20 It is perhaps telling that in the cognitive linguistics literature the term *base* is mostly illustrated using highly structured conceptual complexes such as triangles (Evans/Green 2006: 237), circles (Langacker 1987: 184) and kinship networks (Evans/Green 2006: 239).

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other domains such as SHAPE or FUNCTION. If the sentence is uttered by someone addressing a friend holding an exotically shaped glass, the situational context would assign a unique referent to the expression *glass* and probably further highlight the domain SHAPE, which would not be highlighted by the discourse context alone. Whether domains such as FABRICATION are activated and whether the information that the glass referred to was very difficult to fabricate (because of its exotic shape) and consists of a rather precious material (which would be a specification in the MATERIAL domain) is in turn dependent on the common ground (which can be envisaged as the intersection of two individual knowledge contexts) between the two discourse participants, i.e. if the addressee has this information, it will probably be made highly salient by the current usage event, possibly also foregrounding the domain VALUE. All this information is not overtly encoded in the rather schematic construal *Don't drop the glass* but underlies it as an implicit conceptual substrate. If the various contextual factors are right, the addressee can infer the more specific information the speaker wants to convey with this utterance. If, on the other hand, the context is too impoverished (for example, if the speaker does not think that this information is common ground between him/her and the addressee), he/she would have to project more context into the utterance by opting for a more specific construal, e.g. *Don't drop that glass. It is very valuable because it was difficult to fabricate and consists of a precious material*.

6.2.5 Contribution to Explicitation and Implicitation Research

Summing up the discussion of Langacker's theory of domains, what this theory contributes to the discussion of explicitation and implicitation is primarily the toolset of profile, domain and domain matrix. These tools can be used to model the implicit knowledge structures that underlie overtly encoded (explicit) textual structures of a given usage event. As was discussed, there is no universally applicable formalism for assigning the encyclopaedic knowledge associated with a linguistic unit to one or more domains. However, in the context of scientific and technical translation, Pustejovsky's qualia structure seems a feasible structuring principle covering much of the relevant information in this field. Taking contextual factors into account, we can also make statements about the activation and the relative saliency of specific domains and about the relative saliency of specific information in these domains. This may allow us to make theoretically more informed statements about the implicit aspect of communication that is necessarily invoked in explicitation and implicitation research.

7 Applying the Proposed Framework

The survey of the two models of linguistic construal operations and the cognitive semantic theory of domains has hopefully demonstrated the explanatory potential of these theoretical tools with regard to explicitation and implicitation research. I will now

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try to draw on this potential by giving a short cognitive linguistic account of the three examples discussed at the beginning of this article.

> **Example 1**
> EN: [...] there are three main approaches to capturing the CO_2 generated from a primary fossil fuel [...].
> DE: [...] es [gibt] drei Hauptansätze zur Abtrennung des **bei der Verbrennung** eines fossilen Primärenergieträgers [...] entstandenen CO_2.

Starting from the perspective of linguistic construal, the source text in this example can be claimed to be more schematic that the target text with regard to the production of the CO_2. The source text only states that CO_2 is generated from a primary fossil fuel, leaving the exact process unspecified. The target text instantiates this schematic construal with the prepositional phrase *bei der Verbrennung*, thus making explicit the fact that CO_2 is generated by *burning* a fossil fuel. The shift in construal operates on the level of novel expressions, by introducing a new meaningful element (the prepositional phrase) in the target text.

From the cognitive semantic perspective, we are concerned with the relative saliency of the explicitated information in the source text, or, more precisely, in the domain matrix of the term CO_2. Generally, it could be argued that the production of CO_2 is quite central to the meaning of the concept. This information can also readily be captured by the agentive role of Pustejovsky's qualia structure. From the perspective of common ground, it could be argued that in expert-to-expert communication, this fact will certainly be present to the intended readership and will therefore be recoverable on the basis of the source text.[21] Also, the pressure exerted by the discourse context (i.e. the participle construction *generated from a primary fuel*) will probably make the exact circumstances of the production of CO_2 highly salient in the domain matrix. The information can therefore be claimed to be implicit in and recoverable on the basis of the source text, making the shift in construal an explicitation rather than an addition.

> **Example 2**
> EN: In addition, the Ni-resist insert […] was not necessary for this study, as test lengths were **only** 10 to 20 hours.
> DE: Darüber hinaus war der Ni-resist-Einsatz […] nicht erforderlich, da die Versuchszeiträume zwischen 10 und 20 Std. lagen.

Again starting from the perspective of linguistic construal, we could say that the source text is more specific because it explicitly encodes further information about the engine test lengths between 10 to 20 hours (i.e. 10 to 20 hours is relatively short within the given context). Since the target text does not contain an equivalent of the adverb *only*, it is more schematic with regard to the length of the engine tests, i.e. the more schematic construal could, in principle, be instantiated by various more specific construals. Again, the shift to the more schematic construal in the target text operates on the level of novel expressions, by deleting a "meaningful element" that was present

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21 Given the international debate on climate change, this information will probably also be present to a wider layperson audience.

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in the scene construed in the source text. From this example, it becomes again clear that the imagistic notions of "scene", "viewing a scene", etc., which are widely employed in cognitive linguistics, often have to be interpreted metaphorically, i.e. the restriction *only* does not have any visual counterpart, not even by way of analogy. But still, the overt encoding of this restriction yields a more specific construal than a construal without such overt encoding.

From the cognitive semantic perspective, what is required to arrive at the more specific interpretation encoded in the source text on the basis of the more schematic target text construal is, first, the information that the Ni-resist insert exhibits a high wear resistance, i.e. the domains FUNCTION and MATERIAL of the expression must be activated and the given information must be salient in them. This is very likely to happen, because wear resistance is the central function of a Ni-resist insert. Since the text from which this example was taken can again be classified as expert-to-expert communication, the information can also be claimed to be common ground (again, seen as the intersection of individual knowledge contexts) between the author(s) and the intended readership and would therefore certainly be present in the expression's domain matrix (cf. Croft/Cruse 2004: 18). Second, we need the information that a test length of 10 to 20 hours is unlikely to cause any wear, which is probably contained in the domain matrix of the compound (*engine*) *test length* (possibly in the domain FUNCTIONING PRINCIPLE of the engine test) and made salient due to the discourse context. Given the centrality of the information that an Ni-resist insert is used for wear protection and the contextual pressure that this information, combined with the causal conjunction *as/da*, exerts on the domain matrix of *(engine) test length*, it is highly probable that the relevant information in this matrix (i.e. a test length of 10 to 20 hours does not cause any wear → it is therefore a relatively short test time) is salient. From here, we can follow Kamenická's (2007: 54) reasoning that the more central or salient a given information in an indexed frame/domain matrix, the more legitimate is the claim that the deletion of this information in the target text has the status of implicitation as opposed to omission. Given the high probability of the (equally high) saliency of the relevant information, the above example can therefore be classified as an instance of implicitation. It should be clear from this reasoning that there is no objective "algorithm" for determining whether a certain shift is to be classified as explicitation/implicitation or as addition/omission but that informed judgements by the researcher may be necessary. Also, between high and low saliency of certain information, we may encounter varying degrees of medium saliency, which will naturally be more difficult to classify. Therefore, it does not seem feasible to construct the two concept pairs as standing in a binary opposition. Rather, they should be viewed as two end-points of a continuum, with clear cut cases on either side and a fuzzy "transition zone" in the middle. However the cognitive linguistic toolset presented in this article can provide a more transparent basis for an informed discussion of these phenomena.

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Example 3
EN: Treatment may reduce the chance of contracting HIV infection after a risky encounter.
DE: Eine sofortige Behandlung nach Kontakt mit einer Ansteckungsquelle verringert unter Umständen die Gefahr, dass sich das Human-Immunschwäche-Virus im Körper festsetzt. **Gewähr gibt es keine, zudem erwachsen eigene Risiken**.

From the perspective of linguistic construal, the target text construal in the third example is again more specific than the source text construal, because it encodes two pieces of information that are missing in the source text. The question is, whether the second piece of information (i.e. there are risks involved in the treatment) can be claimed to be part of the scene conceptualized in the source text, i.e. whether it is schematic in this construal of the scene (as opposed to absent from it).

This question must again be answered from the cognitive semantic perspective. Since both the source text and the target text are addressed toward a layperson audience, the knowledge of the intended audience on the subject matter of HIV (and consequently the information in the domain matrices of the various expressions) will probably be quite general. Given that there are no further contextual factors prompting for this specific piece of information, it seems rather unlikely that it will be salient (or even present) in any of the domains activated by this usage event (the relevant domain would probably be the domain TREATMENT in the domain matrix of the expression *HIV infection*). Again following Kamenická (2007: 54), this non-saliency of the relevant information would be a strong argument for classifying this shift as an instance of addition and not as explicitation.

8   Concluding Remarks

This article has tried to highlight the theoretical contribution which the framework of cognitive linguistics can make to explicitation and implicitation research in translation studies. The fact that explicitation and implicitation can be integrated into models of linguistic construal operations in a more or less straightforward manner indicates that these phenomena seem to correlate with general features of human cognition as reflected in language and language use, making the link with cognitive linguistics feasible in the first place. The concept of epistemic perspective/common ground then provides a link between the general phenomenon of linguistic construal and the more specific framework of cognitive semantics, which claims that words provide points of access to a potentially open-ended body of encyclopaedic information situated at the conceptual level. This "conceptual substrate", which is the locus of the implicit information inferred on the basis of overtly encoded linguistic structures in text understanding, can be modelled in terms of Fillmore's frames or Langacker's domains and domain matrices. The presence and the relative saliency or centrality of a given piece of information in these frames/domains/domain matrices is then a function of various contextual factors, for example the common ground between the author(s) and the intended readership as well as the situational and the discourse context. Cognitive

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semantics thus provides a toolset for making theoretically better-founded statements about Pym's "content [that] is paradoxically held to be at once hidden and obviously available to all" (Pym 2005: 34) as well as for modelling the inherently difficult distinction between explicitation/implicitation on the one hand and addition/omission on the other. Of course, cognitive linguistics provides no algorithm for objectively determining whether certain shifts are to be classified as explicitation/implicitation or addition/ omission, but it provides the theoretical framework necessary for transparent and informed judgements as well as for a sound debate on studies of explicitation and implicitation and their findings.

Finally, I would like to argue that the usage-based character of cognitive linguistics as a strand in the functionalist tradition of linguistics, its commitment to the cognitive plausibility of its explanations as well as its focus on the conceptual organisation of knowledge structures makes this framework applicable not only to investigations of specific translation phenomena such as explicitation and implicitation, but also to the wider field of scientific and technical translation, which provided the background for the present article. A specific case for the application of cognitive linguistics to specialized translation in general is made for example by Faber/Ureña Gómez-Moreno (2012: 74). Studies of linguistic phenomena in scientific and technical translation (such as register-related shifts, see Krein-Kühle 2011) might, for example, base their descriptions and/or explanations on one or both of the models of linguistic construal operations presented above, thus adding a cognitive dimension to their findings. Clark's common ground concept, Fillmore's frame semantics or Langacker's theory of domains can be used to make theoretically informed statements about the subject-matter knowledge required to translate scientific and technical texts, which is probably the most central issue in the literature on scientific and technical translation or specialized translation in general (Krein-Kühle 2003: 11; Byrne 2006: 1; Faber Benítez 2009: 108). Also, the usage-based character of cognitive linguistics ensures that the framework is flexible enough to be applicable in more macroscopic translation research paradigms, for example translation process research.

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