

Helle V. Dam, Jan Engberg, Heidrun Gerzymisch-Arbogast (eds): *Knowledge Systems and Translation. (Text, Translation, Computational Processing 7)*. Berlin / New York: Mouton de Gruyter, 2005. vi+325 p., ISBN 3-11-018297-1.

Knowledge is a concept which is frequently used when we speak about translation. A Google search for the two terms, i.e. translation and knowledge, in combination results in more than 37 million hits. But it is not the sheer frequency which shows that the term knowledge is relevant to translation, our understanding of translation has evolved as well. In contrast to outdated views that translation is an art and that translators are born, Translation Studies scholars today are widely agreed that translation is an activity which requires knowledge and skills. Translation involves processing information and taking decisions, which are cognitive processes. Knowledge and skills are concepts which are frequently used alongside concepts such as abilities and competence, especially in literature that deals with translator training. But how can the knowledge which is required to translate be identified more precisely? How can this knowledge be represented in a systematic way? How can it be acquired and/or taught? How can the use of knowledge in the translation process be described and explained?

These are some of the issues which are addressed in this volume. The book contains a selection of papers that were presented at a conference held in 2003 at the Aarhus School of Business. In their Introduction, Dam and Engberg argue that although knowledge is a widely used term in Translation Studies, it is used in a rather loose way. There is also no general agreement about in exactly what ways knowledge is relevant in translation and interpreting. The aim of the conference therefore was to explore “possible interpretations of the term knowledge systems” (p. 1) and address various knowledge-related aspects of translation and interpreting. The papers chosen for the present volume have the same aim, with ‘Translation’ in the title covering both translation and interpreting.

The 13 chapters are grouped in three sections, preceded by an introductory chapter, with author information and an index concluding the book. The three sections are Theory and concepts (with 6 chapters), Methodology (with 2 chapters), and Empirical studies (with 5 chapters). Most of the contributors come from Translation and Interpreting Studies, others from the fields of linguistics or computer science. In this way, the key concept of knowledge systems is addressed from a variety of perspectives.

In their Introduction, Dam and Engberg briefly comment on some types of knowledge which they arrived at as a result of a synthesis of the individual contributions. They list knowledge types as pairs, which reflect perspectives in the cognitive sciences and in Translation and Interpreting Studies:

World/encyclopaedic/background knowledge vs situational/contextual knowledge

World/encyclopaedic/background knowledge vs linguistic knowledge

Extralinguistic/non-linguistic knowledge vs linguistic knowledge

Procedural knowledge vs declarative knowledge

Explicit knowledge vs tacit knowledge

Internal knowledge (systems) vs external knowledge (systems)

The following chapters address either one or several of these knowledge types, mainly with reference to human translators.

Section 1 on Theory and concepts starts with a contribution by **Andrew Chesterman** (The memetics of knowledge). In this paper of a more philosophical nature, he gives a brief overview of memetics, the study of memes, and then comments on its relevance for translation. Memes are elements of culture and units of cultural transfer. They get transferred by communicative actions of human beings, including the action of translation. If translation thus, is a way of spreading memes, Translation Studies can be seen as a branch of memetics (p. 19).

In his book *Memes of translation* (1997), Chesterman explained the success of various concepts and theories of translation as memes. In this chapter, he briefly takes up the point that spreading ideas results in shared ideas, and that this spreading process is always dynamic, involving modification and variation. The more traditional movement metaphor which describes translation as sending information (intact) from a source to a target is thus misleading. Chesterman then expands on the idea of memetics as related to the professional environment of translators. As components which a translation knowledge system might contain in addition to language skills and general knowledge of the world, he lists knowledge about technical aids, about useful reference resources, about useful people, about translation quality and norms, about translation strategies, about managing client relations, about translation ethics, and knowledge about theoretical concepts (p. 28). Chesterman argues that “a good deal of this kind of knowledge already seems to spread via memetic transfer” (p. 28), and he gives email lists and similar fora which professional translators use to exchange ideas and to share information as examples. Knowledge system is thus understood as the complex knowledge of the human translator which involves both declarative knowledge (knowing what) and procedural knowledge (knowing how and knowing why). A memetic knowledge management system for Chesterman involves social interaction, i.e. communication and cooperation between professional translators. When he says that “translators are involved in spreading memes”, that they “act as promoters and guarantors of cultural diversity”, and that they are “agents of memetic evolution” (p. 29), this can refer both to the

translations they produce (i.e. texts as memes which as a result of translation get spread across cultures) and also to translators' own knowledge and sharing of knowledge about the very activity they perform. It is this second aspect which Chesterman focusses on in the last section of his chapter.

The other chapters in section 1 do not explicitly address aspects of professional behaviour of translators but rather present models for knowledge representation and knowledge management. **Torben Thrane** is interested in the kinds of knowledge which are required for the highly specialized communicative task of simultaneous interpreting. In his chapter (Representing interpreters' knowledge: why, what and how?) he is concerned with establishing a theoretical model which builds on insights from (cognitive) linguistics, Artificial Intelligence and Cognitive Science. The questions he addresses are introduced as follows: "What does it mean to represent interpreters' knowledge? What knowledge is relevant to interpreting tasks, and is it eligible for representation? If so, how should it be represented?" (p. 31).

Thrane basically differentiates between linguistic knowledge and world knowledge as relevant for interpreting. His chapter mainly deals with linguistic knowledge, and for his model he distinguishes between I-language and E-language. I-language, which means internal, individual, intensional language, is defined as "a property of the individual mind, the computational mechanism that assigns meaning to sounds" (p. 42). E-languages are externalised languages, i.e. natural languages of the world such as English or Danish. With the interpreter's task being to ensure communication between speakers of different E-languages, the representational system could be specified as, e.g., knowledge of English. Thrane argues that one crucial question would therefore be "to determine how, and to what extent, knowledge of particular E-languages depends on I-language" (p. 42). In the following sections he considers further the computational system of I-language, linking it to a human language faculty. The language faculty is characterised as a second-order representational system, and Thrane's conclusion is that whereas world knowledge may be captured by Artificial Intelligence type representational systems which are designed for that purpose (e.g. frames, semantic networks), knowledge of language cannot. "More specifically, only the structural properties of the language faculty can be thus represented, not its functional properties, which is what is required to account for language understanding" (p. 55). Readers without some knowledge of Artificial Intelligence and/or Cognitive Linguistics will find it difficult to follow Thrane's highly abstract theoretical reflections.

The contribution by **Walther von Hahn** (Knowledge representation in machine translation) is exclusively concerned with non-linguistic knowledge, and more specifically, with the representation of declarative non-linguistic knowledge in machine translation systems. Machine translation systems re-

quire non-linguistic knowledge in order to solve linguistic tasks, such as lexical disambiguation (e.g. I go to my office. - different verbs may be required in the target language if 'go' means going on foot in contrast to going by car) or anaphora antecedents (e.g. She took the ice cream out of the fridge and ate it - the system would need to be able to understand that 'it' refers to 'ice cream' and not to 'fridge'). The chapter briefly introduces different types of knowledge (e.g. ontologies as language-independent conceptual representations of domains, interlingua systems, frame-based systems) and illustrates their use in the three knowledge-based machine (aided) translation systems KBMT, Verbmobil, and DBR-MAT. For each of these systems, von Hahn comments on the ontology, the components of the representational structures, the formalisms and the operational processes. At the end of the chapter, he points towards perspectives for using ontologies which have emerged from the "semantic web" activities. The semantic web builds on the basic idea of "declarative, modularized and system independent knowledge" which has become very important for the development of the Internet (p. 76). Von Hahn recommends the translation community to join semantic web activities, since on the one hand, MT research can get support from the semantic web (e.g. ontologies of domains will be available to which terminologies can be attached) and on the other hand, (machine) translation will be used for the semantic web as well.

Annely Rothkegel's contribution (Knowledge and text types) focuses on the external representation of knowledge in texts. She identifies two types of knowledge as relevant for translation: "world or domain knowledge referring to the conceptual structure of objects and states of affairs and text knowledge referring to communication patterns of how to convey the selected world knowledge to persons in terms of verbal means (and/or visual means)" (p. 83). Rothkegel argues that for translation purposes "text knowledge plays an important role as it is the text which is the real subject of the translation process" (p. 83). Since her primary interest is the representation of such text knowledge, procedural knowledge as commented on by, for instance Chesterman, is not considered at all.

Her approach to text knowledge is based on a pragmatic view of text. Text is defined as an "organisational device for communicating knowledge according to some specified functions which are related to some specified situations of communication" (p. 84). Text knowledge is accordingly "knowledge about this kind of communicative device" (p. 84). In Rothkegel's model, world knowledge is represented in the form of a scenario of actions, and text knowledge is linguistically described in the form of text actions. She illustrates her approach with the two text types of instructions (a user manual) and regulations (an international EU-agreement).

Rothkegel argues that schemata of world knowledge representation such as semantic networks or frames are static, whereas in her model the dynamics of change inherent in actions is described with respect to the starting and resulting state, the transition strategy, and the transition execution. For example, in a text extract on the use of a blender, the participants of the scenario include an ACTOR (i.e. the user), the INSTRUMENT (i.e. the blender appliance), PARTS of the instrument (e.g. blending bowl) in TIME and PLACE. The actions reflect phases of the process as transition strategies (e.g. composing, making work). Although these phases may not be explicitly indicated in the text (cf. ‘place the blending bowl on the main body; then turn using the handles until locked into place’), they are essential for the representation in that they reflect coherence – which is important for text comprehension and thus also for a translator. For modelling text knowledge, Rothkegel refers to speech act theory, i.e. content (proposition) is represented by means of text actions (illocution) which refer to the text function and control the choice of lexical and syntactic material (locution).

The two text types, instruction and regulation, reveal different communicative patterns of conveying knowledge: “instructions for use are constructed in terms of text action types such as DESCRIBING, INSTRUCTING, RECOMMENDING, WARNING, COMPENSATING, REPAIRING, etc which are selected according to norms and/or conventions of how to deal with technological tools and risks of using them. In regulation texts we find text action types such as DEFINING, LAYING-DOWN, MODIFYING, SPECIFYING, PERMITTING, RESTRICTING, TERMINATING, REFERRING, etc which are determined through institutional decisions” (p. 87)

At the end of her chapter, Rothkegel comments very briefly on consequences of her model for translation. Her main argument is that the text representation, i.e. the illocutionary structure of a text, should function as the instruction for the reconstruction of the text. Text representation could thus also be used to assess the relationship between source text and target text. However, such a claim implies that the illocutionary structures of source text and target text are expected to be equivalent, although, admittedly, Rothkegel does not use the term equivalence. For the actual process of translation it would be necessary for a translator to decide whether the translation brief, or the skopos, requires the text representation to function as the instruction for the reconstruction of the text. Another issue not addressed by Rothkegel but relevant to translation is the potential culture-specificity of the illocutionary structure of text types.

The chapter by **Gerhard Budin** (Ontology-driven translation management) explores the notion of ontology, which had also been addressed by von Hahn, in its potential use for translation purposes. Budin’s interest in ontologies is linked to his extensive research into terminologies. Both terminologies and ontologies are models of conceptual domain knowledge. Ontology is defined

as “explicit and formal (specification of a) conceptualization of a domain”, and terminology as an “(organized) set of concepts and their designations (including the relations among them) in a domain and its special language” (p. 105). Whereas terminologies have been constructed to be used primarily by human translators, ontologies are intended for computer applications. Budin gives some examples of ontologies from different fields to describe their basic elements and he comments on their use for text analysis, text generation, and translation. One example looks at the domain of risk management. A comparative analysis of several key documents in this domain has shown that their terminologies differ from each other. A robust method of ontology-driven translation management should be able to overcome such problems. Budin too refers to the Semantic Web as a further example of using ontologies for translation engineering. He highlights the importance of achieving cross-lingual semantic interoperability for successful ontology-driven translation management, thus pointing to needs for future research.

In the last chapter in section 1, **Klaus Schubert** (Translation studies: broaden or deepen the perspective?) suggests to compare translation to other forms of intercultural knowledge transfer, such as technical communication. Schubert comments that the two activities technical writing and technical translation produce “new semiotic entities on the basis of given semiotic entities” (p. 131), but technical translation works from one source document, whereas technical writing works from a variety of sources. Another difference is related to the issue of knowledge creation. Schubert makes a difference between information and knowledge as follows: “... information consists of (often large numbers of) separate, unconnected utterances or propositions about real or imagined facts, whereas knowledge is connected, ordered, systematized and thereby situated information. Information is a result of gathering, knowledge of cognition” (p. 133). Since technical writing involves a variety of sources, text production is intellectual work which requires subject expertise and adds value. Therefore, only technical writing always creates knowledge, whereas knowledge creation is only an occasional but not an inherent feature of translation (p. 134). Schubert is careful not to say that translation is merely reproducing information, and he explicitly acknowledges all efforts in translation theory and practice to give proper recognition to the professional status of translators.

Technical writing, technical translation, and document management as three stages of technical communication can be described as intercultural communication if culture is defined as a speciality community (based on Göhring 1978 and Schmitt 1999) as the “fundamental entity of technical communication” (p. 139). Speciality communities (a concept which reminds of Swales’ notion of ‘discourse community’, Swales 1990) are constituted by shared knowledge, and communication between them is made possible by a knowledge-adding and

knowledge-creating communicative work process” (p. 139). Technical writing, technical translation, and document management are to be seen as a continuum of “highly professionalized, value-adding activities which have their main purpose in enabling and facilitating information exchange and understanding across the borders of speciality communities” (p. 139). An investigation of this complex field would mean broadening the perspective of our research into translation, and Schubert argues that we do not yet have a coherent methodology for such an investigation. Translation as a value-adding activity is comparable to Cheserman’s comments on translation as spreading memes, and the discipline of memetics might be explored further in order to find a coherent methodology.

The two papers in section 2 focus on methodological issues of research into knowledge. **Daniel Gile** (Empirical research into the role of knowledge in interpreting: methodological aspects) points out that research into the role of knowledge in translation and interpreting processes has so far studied, for example, textual shifts, translators’ corrections of source text errors in the target text, and has also made use of introspective methods and retrospective reports. Hypotheses can be tested with naturalistic methods, through control and experiments, through statistical inferences on the basis of dependent and independent variables, etc. Gile provides some illustration with reference to the effect of situation-specific knowledge on performance in conference interpreting. A general problem, however, is the very high variability of performance, and information gained on a specific strategy cannot easily be related to one particular variable. As Gile argues, the value of information gained as a result of one method “should be checked through triangulation, that is, the use of more than one method for cross-checking purposes” (p. 165). Since at the moment the resources in the young discipline of Translation Studies are insufficient for extensive research, the use of recordings and transcripts from other studies as well as multiple replications can be used to test hypotheses. Although Gile’s focus is on interpreting, many aspects which he addresses in his chapter apply to research in general.

The issue of triangulation is taken up and illustrated in the contribution by **Arnt Lykke Jakobsen** (Investigating expert translators’ processing knowledge). His aim is to gain insight into the (tacit) processing knowledge of expert translators. In contrast to some of the chapters in section 1, the notion of knowledge representation does not refer to mental representations of human translators or MT systems. Jakobsen uses this notion to refer to the “ways in which a translator’s processing knowledge manifests itself, though only fragmentarily, in translational behaviour” (p. 173). Translation processing involves source text comprehension, target text production, with mapping processes in between. Translational behaviour as a kind of ‘language’, i.e. a “representation” of processing knowledge, can manifest itself in the ways in which a translator produces

a translation as well as in his/her concurrent comments about the translation process. For his empirical research, Jakobsen uses data gained from introspection (think-aloud data) plus data generated by the keystroke logging program Translog (type-along data) as two parallel sets of data to study one and the same translation event. Think-aloud data (as subjective or qualitative data recorded in real time) as well as keystroke and pause data (as machine-recorded, objective and quantitative real-time data) serve as knowledge representation. Processing knowledge thus becomes accessible to observation and analysis.

Jakobsen examined in particular the “expert translators’ chunking of the information stream”, with the basic assumption “that by studying the occurrences and the distribution of pauses in the processing stream, we can get an idea of what and how much is being processed at any one time” (p. 173). ‘Information’ here is obviously understood in a different way than in the chapter by Schubert. The study involved 5 expert translators and 4 final year students of translation and identified some behavioural regularities in the two groups. The keystroke data show considerable processing differences between expert translators and students. For example, expert translators worked in longer segments than students, and they were also much faster than students in the drafting phase, but spent more time on revision. TAP data served to explain processing differences which were observed in the keystroke data. Since there are several variables in the translation process and translators tend to differ in their performance, a combined use of the two sets of data (triangulation) can increase the strength of hypotheses and findings.

The chapters in Section 3 are predominantly empirical studies which draw on models of knowledge representation as developed in cognitive linguistics and on knowledge-based methods as tools to describe and/or evaluate translation and interpreting. **Mary Snell-Hornby** (*Of catfish and blue bananas: scenes-and-frames semantics as a contrastive “knowledge system” for translation*) illustrates how Fillmore’s notions of scenes and frames can be used for translation. Fillmore defined a frame as a system of linguistic choice, and a scene as a coherent segment of beliefs or experiences or imaginings. A frame triggers off a scene in the mind, and vice versa, i.e., scenes and frames activate each other. Snell-Hornby argues that “[r]arely has a linguistic concept proved so fruitful for the practice of translation” (p. 195). The translator starts from a frame, i.e. the source text and its linguistic components, on the basis of which he/she builds up his/her “own scenes as activated by personal experience and internalized knowledge of the material concerned” (p. 195). Based on the activated scenes, the translator must find suitable frames in the target language. Snell-Hornby’s use of frames and scenes could thus be said to correspond to the concepts of linguistic knowledge and world knowledge.

She illustrates the scenes-and-frames approach with various examples (English, French, German) both as a tool for translator training in a classroom situation (combining it with a functionalist model of translation) and as a tool for translation critique. Proficiency in and knowledge of the source language and culture as well as target language and culture will result in successful frame-scene-frame activation. Insufficient knowledge, however, can lead to the activation of scenes that deviate from those intended by the author, or to the selection of inadequate target text frames. Inappropriate target-text passages are thus the result of a mechanical frame-frame substitution.

Laura Sergio and Gisela Thome use another cognitive model as basis for translation critique, i.e. Fauconnier's concept of 'mental spaces'. Their basic assumption is that findings from language processing research are of relevance for translational semantics. Fauconnier's approach has been chosen since it was developed from a linguistic point of view, which puts the construction of meaning in a natural text into the centre of linguistic analysis. That is, grammar is considered to be cognitively motivated, mental spaces are constructed, and such a construction is part of the semantics and pragmatics of natural language. In their chapter (Translation-related analysis of the textualisation of a knowledge system on the basis of Fauconnier's concept of "mental spaces"), Sergio and Thome first describe the concept of mental spaces, and then use it for the analysis of short Italian text and its German translation. Their aim is to examine source text and target text for the "compatibility of their respective cognitive-semantic structuring" (p. 208). One of the findings is that the ambiguity in the Italian source text has not been possible to reproduce in the German target text. Both the discussion of the model and the illustration of the example are rather theoretical and thus not easy to follow. In their conclusion, they acknowledge that it is extremely difficult to apply this model, despite its usefulness, to larger stretches of text, and that some more refinement is required.

In their chapter (Modelling semantic networks on source and target texts in consecutive interpreting: a contribution to the study of interpreters' notes) **Helle V. Dam, Jan Engberg and Anne Schjoldager** use another complex model as the basis for their analysis, the semantic-network model as developed by Mundersbach and Gerzymisch-Arbogast (1989). The authors' long-term research aim is to identify features of efficiency and non-efficiency in interpreters' notes in consecutive interpreting. The basic assumption is that there is indeed a causal relationship between interpreters' notes and the quality of the ensuing target text. The function of notes is "to capture source-text meaning in order to serve as memory triggers for reformulation of this meaning in the target text" (p. 228). This chapter reports on a pilot phase which was conducted in order to generate some initial hypotheses.

The authors start with a presentation of the model of semantic networks which is assumed to capture the reader's text processing. The model is meant to show in a highly explicit way how coherence is constructed, operating with arguments (primarily noun phrases), relators (primarily verbs), empty relators (which are not represented in the text), and modifiers (connectors, sentence adverbials, etc) for the formalised representation. For the pilot study, the model was slightly adapted to focus on the text-semantic aspect of coherence, illustrated through an analysis of two paragraphs (source text Spanish), one of which was accurately rendered into the target language Danish, and one was inaccurately rendered. Semantic networks were created of both the source text and the target texts as a basis for assessing accuracy in interpreting. The notes for each paragraph were then analysed to find out "if and to what extent the characteristics of the notes used for the production of the accurate target-text passage were different from notes used for the inaccurate target-text passage" (p. 243). The authors examined quantitative and qualitative relations between notes and the source text (note-units-to-source-text-words ratio, proportion of source text words represented in the notes), and they also analysed the notes per se (choice of note form, i.e. words or abbreviations or symbols, choice of language). Based on their initial findings, they identified quantity, form and language of the notes as the three interrelated features of efficiency and formulated the following initial hypotheses: many notes work more efficiently than few notes; abbreviations may be more efficient as notes than full words; writing notes in the source language is more efficient than writing in the target language.

Although these conclusions may seem plausible, the authors point out that there is in fact no agreement in the interpreting community concerning these features, and – more importantly - that so far no empirical research has been conducted which would have corroborated or falsified these hypotheses. Concerning the use of the model of semantic networks they say that an "application of the model seemed a rather daunting task at first glance" but that if a scholar "invests a little time and effort adapting the model to his/her needs, the task is in fact less daunting" (p. 251). This may well be the case, but I doubt whether testing the initial hypotheses would indeed need to apply this highly complex model to a larger corpus. Other methods could be used as well (triangulation), even if they do not offer the formal rigidity of semantic networks.

The authors provide a very detailed account of how they went about their research and the reader can easily follow their arguments and understand how they arrived at the initial hypotheses. The key concepts of knowledge and knowledge systems, however, are not explicitly addressed.

Mudersbach and Gerzymisch-Arbogast's model is also the theoretical framework for **Young-Jin Kim's** chapter (Cultural constellations in text and translation), more specifically, Floros' method for translating culture in texts,

which itself is based on Mudersbach's concept of culture. Mudersbach defines culture as an "entirety of single fields that he calls cultural system (holon)" (p. 256), a definition Kim prefers to the one by Göhring, which Schubert had found useful for the description of technical translation. Holons and their parts (holems and subholems) enable the "systematic comparison of subspects of different cultures as long as they serve the same purpose" (p. 256).

She also rejects scenes-and-frames approaches, which were praised by Snell-Hornby, since they "seem to work intuitively and do not offer translators a systematic method" (p. 257). In contrast, Floros' model (2003) is presented as a method which enables a "systematic identification and the holistic transfer of culture" (p. 257). Culture is considered on the text level and on the system level. His model consists of 3 phases: a reception phase (with the translator working from text to system level, with the fundamental purpose of identifying cultural systems), a transfer phase (central here is a contrast-aware comparison of cultural systems), and a reproduction phase (the translator taking fundamental decisions for target text composition, working from the system level to the text level). Kim claims that these cultural systems which a reader is made aware of in the reception phase can be regarded "as knowledge systems reflecting the reader's background knowledge" (p. 258), but she does not provide a plausible explanation for this claim.

The model is then illustrated with a German cosmetics company's advertisement which is to be translated into Korean. That is, Kim does not analyse actual translations, but she wants to give guidance to practising translators of how to translate cultural specifics. In several very detailed tables she illustrates the cultural system of non-Christian holidays in Germany and in Korea, identifies similar and different cultural elements, and shows how such elements are realised in a text as cultural specifics. The translator is to do a compatibility check in order to detect potential problems for the translation of cultural specifics. For example, Mother's Day and Father's Day in Germany are comparable to Parent's Day in Korea, but they are different with respect to cultural elements, e.g. the gifts which are bought (perfume or after-shave in Germany, and carnations in Korea). She then comes up with a proposal of how incompatible elements can be transferred into the target language. For example, she proposes to render the reference to 'luxuriöse Düfte' ('luxurious fragrance') in the German source text into the Korean text as 'Always carnations? Choose something new this time!'. Questions which need to be added, in my view, are the role which advertising plays in Korea, and whether such a proposed strategy would actually work in view of the differences in the cultural systems, assuming the Korean target text is meant to fulfil the same function as the German source text did. In other words, the proposed compatibility check should be preceded by checking the social role and function of genres and text types.

In the final chapter (Pointing to contexts: a relevance-theoretic approach to assessing quality and difficulty in interpreting) **Robin Setton** comments on how a relevance-theoretic approach can be applied to the study of interpreting. A basic argument of relevance theory (or cognitive pragmatics) is that inferencing is integral to the mechanisms of human communication, with inferences drawing on information such as the environment or memory. Both interpreters and hearers at the receiving end of interpreted discourse must look for context to make inferences. Interpreters, however, depend more acutely on their comprehension systems (linguistic decoding and pragmatic inference) than their addressees. In relevance theory, knowledge is treated as contexts, i.e. “the subset of all the more or less firmly held assumptions in an individual’s cognitive environment which is used to process an utterance” (p. 279). Context is thus a psychological construct which includes assumptions, beliefs, etc. from the previous discourse, from memory, or the situation.

Setton refers to “small sample sizes, multiple potentially significant variables, and wide inter-subject variability” (p. 277) as difficulties for interpreting research today and argues that progress in interpreting research has been “slowed by its use of either fuzzy, unstable concepts or sterile, unenlightening statistics” (p. 285). In order to be fruitful in research on interpreting, theoretical entities need to be operationalised. He identifies “quality, fidelity and what is communicated” and “discourse difficulty and cognitive effect” (p. 282) as two issues which are central to interpreting research. His long-term research programme is intended to make possible ingredients for indicators of quality and difficulty measurable and operational. Clusters of indicators (e.g. linguistic units and constructs, cognitive constructs, speaker variables, features of output, interpreter variables) could be used to study these multivariate phenomena.

Setton argues, that in a “relevance-theoretic approach, the quality of any communication is a function of its relevance to a hearer, measured as cognitive effects relative to processing effort” (p. 288). Since inferencing plays an essential role in communication, completeness of the interpreter’s output will need to be assessed differently. For example, “referents not explicitly reproduced in the output will not be penalised as omissions if they are easily inferable” (p. 288). As far as discourse difficulty is concerned, Setton lists hearer-friendliness and interpreting-specific difficulty, or interpreter-friendliness (p. 289) as indicators. He reports on two pilot studies in which scoring protocols were used, with panels giving different weightings to components of quality (e.g. major failures, minor flaws, paraphrase, elaboration) and of difficulty (e.g. semantic density, syntactic complexity, prosodic range, proper names or numbers). Setton’s focus here is on the methodology used and less on actual results, so that his paper might actually have fitted better in section 2 of the present volume.

In the last part of the paper, he illustrates prospects for research involving large corpora and comments on the feasibility of corpus studies methods. For hearer-friendliness, he comments on lexical and syntactic tolerances, discourse connectors, semantic word-order, and prosodic accompaniment; and for interpreter-friendliness on semantic density, short or low-context lexical items, metarepresentational complexity, and translatability. Setton expresses the hope that advances in automatic corpus analysis will make it possible to apply a complex, multilevelled metric.

In their Introduction, Dam and Engberg had argued that there is no general agreement in Translation Studies about how exactly knowledge is relevant in translation and interpreting. Has this volume enhanced our understanding and contributed to reaching an agreement? There is no straightforward answer. The individual chapters present different models for the description of knowledge (use). The usefulness of such models is illustrated, with some key concepts being taken for granted, although used differently. The concepts 'information' and 'knowledge' can serve as an example. Schubert characterises 'information' as separate, unconnected utterances or propositions, and 'knowledge' as connected, ordered, systematized. For Rothkegel, 'knowledge' is some kind of mental model of objects/events, and it is the text which converts knowledge into usable information for a communicative purpose. Dam, Engberg and Schjoldager speak of 'source-text meaning' and of 'reformulation of this meaning in the target text', i.e., they operate with the concept of meaning, not with the concepts of information or knowledge. Chesterman points out that 'knowledge' as conceived in interactive and constructivist theories of learning is linked to emotions and values, involves actively knowing, and is closely linked to action and skills. Such aspects of procedural knowledge, i.e. studies of how knowledge is being made use of and why, are, however, hardly addressed in this volume (with the exception of Jakobsen). Another issue which is not addressed in this particular volume but of relevance for translation and interpreting research is knowledge assessment (some chapters - e.g. Dam, Engberg and Schjoldager, Setton - touch upon it in the context of training and performance evaluation).

As said at the beginning, in their introductory chapter, Dam and Engberg manage to synthesise the contributions and establish some overall coherence by showing how various classifications of knowledge can be relevant to translation and interpreting studies. There are, however, no cross-references between the individual chapters and contributors, which could have been expected since the papers were initially presented at a conference and revised for publication. The lack of thematic links across the chapters is also reflected in the subject index: 367 entries out of the total 477 occur only once in the whole volume, and the only concepts which are used in more than three chapters (judged by the index)

are ‘accuracy, cognitive science, knowledge representation, knowledge systems, machine translation’.

In view of the variety of the issues addressed and of the models used, readers of this volume will in all probability be selective, focusing on the information they are interested in and only skim (or ignore) the rest. Which raises the question: who are the intended addressees of this volume? The editors themselves do not comment on this, but the scholarly style of the contributions makes this a publication which primarily addresses academics. In terms of formal presentation, the book has been very well edited. I counted only 9 typing errors or similar minor flaws in a volume of over 300 pages

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