Translation as Text

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Models of Translation

Analysis in any discipline involves decomposing the object of study. Some features are selected for study and are brought to the foreground. Others, equally important, are relegated to the background. Hjelmslev has discussed this selection process and related it to the semiotic concept of pertinent (Greimas and Courtes 1982: 31). The selection of those aspects of a phenomenon that one will study is made on the basis of a set of research parameters. The research parameters reflect the pertinence of the phenomenon to the scholar. Research parameters in translation studies might include the following:

1. the application domain (practice, pedagogy, criticism, automation)
2. the point of textual reference (source-centered, translation-centered, target-centered)
3. the systemic focus (linguistic system, value system, knowledge system, text system, cognitive system, political system)
4. the object focus (source text, translation, parallel text)
5. the activity focus (text comprehension, text production, translation strategy, cognition)
6. the research method (case study, experiment, textual analysis, participant observation)

In translation studies the potential for misunderstanding is not just the result of a divergence of research interest. Such divergence is characteristic of research. It is also the result of a failure to clarify the research parameters active when a complex subject of study is partitioned for research purposes.

Translation studies today is characterised by alternative perspectives on translation. They have their origins in different research aims and interests. Different motivations for research and the varied prospects for utilising its results produce a natural partitioning of translation studies. These different partitions can be referred to as models of translation. A model is a conceptual construct. It is a logically connected set of conceptualisations of an object of study. It may also be a hypothetico-construct. This means that the model asserts something about empirical (translational) reality which the researcher intends to prove. As a hypothetico-conceptual construct, the model claims to have descriptive and explanatory power. It is important to note that models are not theories. Models are like hypotheses. They only claim to explain and describe reality. A model cannot become a theory without providing evidence which supports its claim to explanatory power. Such evidence is often lacking in translation studies. In the place of empirical verification, many of these models depend on weaker forms of authority: the sophistication of the argument, the status of the model's author, or the coherence of formal systems. More condemning, the relationship between translation theory and translation practice is weak, as evidenced by the small number of empirical investigations reported in the literature.

Identifying the research parameters which motivate the different models of translation is a first step towards clarification. Two divergent views of translation may not really be in opposition. They may simply focus on different aspects of a larger phenomenon; still, the broader discipline of translation studies needs a conceptual baseline. We argue that the textual approach to translation can serve as that baseline. Without an integrating concept we run the risk that translation will be understood only in parts, and never as a whole. If there are no integrating concepts, there can be no hope of an integrated or unified theory of
translation. An integrated theory would bring the various models of translation and the various kinds of translation together in a more encompassing theoretical structure.

Building models without a common set of concepts has led to the fracturing of translation studies noted recently by Newmark and earlier by Savory. In two recent papers, Newmark (1991) maintains that modern translation theory is in a quandary. He makes the point that all theories have their uses, but when they are claimed to be exclusive or monopolistic they become pernicious dogma. Newmark is right about dogma. It has no place in translation studies and cannot exist in any empirically based discipline. He goes too far when he claims that an integrated theory of translation is not possible. Each approach to translation can validate itself. It can achieve validity by carefully selecting its research aims and using a rigorous methodo-critical system in the description of the phenomenon within that selection. The scope, and therefore the explanatory power, of the model of translation is restricted to the elements subjected to analysis. It is not necessarily the case that an integrated model is impossible. Simply because some approaches to translation have decided to focus on a restricted set of elements does not mean that a more comprehensive and meaningful set of features cannot be constructed. This could be done by merging the common conceptual elements of the various models and accounting for the areas of difference.

An integrated approach requires an integrating concept. We have proposed the text as an integrating concept. In translation we are concerned with three incarnations of the text. There is the source text and there is the target text. The third text is what we call the virtual translation. The virtual translation is a composite of the possible relations between a source text and a range of potential target texts. It is a mental model of the elements and relations which exist in the mental space between real source and not-yet-realised target. The translator factors the conditions of the translation situation into her understanding of the source text to create this mental model. He or she negotiates a target text from the mental model using the procedures available in her translator's competence. What the layman calls 'the translation' is the target text, the linguistic incarnation of a virtual translation that was a work-in-progress until it was delivered to its reader. We call this cognitive structure a virtual translation because we want to emphasise its mental nature. It is a mental construct only progressively committed to paper. The virtual translation is always constrained by the source text and by the textual expectations of the reader. Even though it is a mental construct, it is text-like. The concept of virtual translation is one that emphasises the fact that the translator works with a mental representation. The representation is anchored by a source text and oriented in its progressive elaboration by the determinants of the translation situation. As it emerges into linguistic reality in the target culture, it is increasingly controlled by the target culture's linguistic and textual systems. The virtual translation includes a number of interdependent constituents and relations. Relations in the virtual translation are between the elements of the two linguistic systems and between elements of the source text and the target text in potentio. The mental representation includes the propositional context and the illocutionary force of the messages underlying the source text. It includes the pragmatic conditions surrounding the text in the source and target communities.

Because the virtual translation is influenced by many communicative and functional elements, this object of translation studies truly reaches into the semiotic domains of semantics and pragmatics. It accounts for the authors and readers of translations. It accounts for their knowledge, thoughts, and feelings; it includes their aims, intentions, needs and expectations.

The process of translation is a process of decision-making. It is a set of procedures and strategies for making judgements when selecting the optimal choice from a range of potential equivalents. A theory of translation should attempt to understand how that decision-making is accomplished. How is the mental representation of the virtual translation constructed and how does it emerge as a target language text? A theory of translation should explicate how the professional translator moves from the concrete source text, to the construction of the virtual translation, to producing the most appropriate target text. It should explicate the factors that play into the decision-making, including communicative function, target language textual style, potential audience, and the requirements of the host culture and
linguistic system.

No integrated theory of translation should concentrate on just one of these issues. It is legitimate, however, for partial theories of translation to circumscribe their areas of interest. In the following chapters, we will expand on the notion of translation as text by showing how the text as (virtual) translation, and the related concepts of textual meaning and communicative value, can function as integrating conceptual structures in translation studies. Although we argue that an integrated theory of translation is possible, we recognise that before we can proceed with our argument, we should describe some of the partial theories that have preoccupied translation studies to date: the critical, practical, linguistic, text-linguistic, sociocultural, computational, and psycholinguistic models. This inventory of research perspectives is not just an authorial strategy. It is a necessary preparation for any serious discussion at this stage in the development of our common discipline. The order in which we review the models does not indicate any order of priority.

The Critical Model

The critical model normally presupposes a finished translation. The translation exists in time and space. The critic's objective is evaluative commentary. This perspective on translation is result-oriented and static. There is no inherent interest in understanding how the translation was accomplished or in understanding how the translator used particular translation procedures. The critic orientates himself to the results of translation, not its processes. More sophisticated critical models may assess the degree of equivalence between a translation and the original text. What often occurs, however, is that a critic loses sight of the source text as a concrete linguistic entity. The primary object is the target text. If the source text is available (and comprehensible) to the critic, he may use it in analysis. But there is no doubt that the major factor determining a critic's acceptance of a translation is the translation product viewed as a text in its own right.

There are many variations of the critical model of translation. These models develop and change over time. They are conditioned by distinct historical, social and individual factors. Two features of the critical model, the degree of subjectivity, and the dominance of the target language, are directly related to the critic's ability to assess the source text and make genuine comparisons. The two skills, however, that would enhance the reliability of the critical model are least developed by some practitioners of the approach. These critics, primarily publishers' readers and book reviewers, concentrate largely on the acceptability of the text in the target language. There is a difference between this literary criticism of translations and translation criticism. The first focuses on the literary or textual qualities of the work as it exists in translation. The translation is judged on its own merits as a target language text. Translation criticism, on the other hand, appraises the text as a translation.

There are various realisations of the critical model that merge into the other models of translation. For instance, criticism, or rather correction, is an integral part of translation teaching (the practical model). It is used in translation classes with translation students. More often than not, it is applied to parts of translated texts. This approach deals with effects emanating from the target text. These effects may be subjective ("it sounds wrong") or the result of the violation of more conventional linguistic and textual norms. Another important variation of the critical model is translation revision performed as quality control. In this case it is carried out by a better or more qualified second translator who invests her greater experience and her broader knowledge of the target audience in this demanding task.

Translation criticism should always be comparative, maintaining the source and target texts as a pair. A full development of the critical model would have to develop a research methodology which is essentially contrastive. It would have to merge translation values, translation results, and source and target language values.

There is a unique kind of critical translation analysis which is not comparative. It focuses on the source text to be translated and deals primarily with defective texts. It does not regard the original as inviolable; it urges the translator to look for defects. Translators in industry constantly complain that "the one big problem has to do with the quality of the source texts - source texts that are simply not satisfactory as departure points for the purposes to be served by the corresponding target texts" (Berglund 1990: 146). The most
common flaws, which often go undetected if the conscientious translator does not interfere, are obscurity, inconsistency, and interference.

The critical model, with its retrospective thrust, starts out from the product. It concentrates on translation as result, not as process. The proponents of this model still have to take into account the kind of translation that was done. Different types of text presuppose different translation techniques and different criteria for revision or criticism. Hence, the critical model of translation studies presupposes a variety of critical methods based on the types of text involved. The criteria established for assessing industrial translations are bound to be different from the criteria used by a critic of literary translations. The critical model is an indispensable part of a global view of translation. The critical model focuses on textual acceptability. Acceptability is a defining characteristic of textuality. Because of this intrinsic link to textuality the critical model can participate fruitfully in the more global text-based conception of translation that we propose.

The Practical Model

The practical model of translation takes the source text as a point of departure. The goal is an understanding of the target text through a study of the processes of translation (translation behaviours, translation strategies) that lead to an acceptable translation. Where the critical model was retrospective the practical model is prospective. The objects of study are the declarative knowledge and procedural knowledge necessary for the translator to do his or her work. The practical model involves a thorough analysis of the source text and its context. The major practical objective is determining how to transfer the contents of the source into the target. The practical model assesses latent translations in the source text and studies the transfer mechanisms used to bring one of these into target text reality. The practical model emphasises the construction of the virtual translation and the realisation of a target text from it. The critical model, on the other hand, focuses on target text realities and only presupposes a potential source. Thus, the practical model is also based on the integrating concept of the text.

The practical model is not static, but dynamic. It is not easy to characterise this model of translation with a single term. It is embraced by practitioners, researchers, teachers, and students of translation. Because of these different users, it is possible to recognise several different submodels, including the practical, the teaching, and the learning approaches. As a result, the model exists in various degrees of sophistication. The designation practical emphasises the fact that this approach to translation studies focuses on the processes of human translation practice. It is a way of looking at translation if you actually have to do it. Another appropriate designation might be performative model. All of the sub-models share the prospective interest, but they play different performative roles. These different roles result in the use of different sets of declarative and procedural resources to get practical results.

Our differentiation of the sub-models raises an interesting point. It shows that models are not entirely the property of the researcher. The real conceptualisations that practitioners have of the translation process are also models. What is often overlooked by the translation scholar is that practitioners also have a conception of the translation process that guides them. This informal translation model is a first-order model of translation. It is not completely conscious. Often it is latent, but detectable and quite consistent. Of course, this everyday knowledge tends to be less explicitly formulated. Mostly, it is not put into words at all. The experienced translator, the successful teacher, and the gifted student realise practical models of translation in strategies and tactics of translation that defy a clear-cut order. Nevertheless, they appear as regular patterns under empirical observation. Evidence of good translations over the centuries proves that there have always been practical models.

As practical models are formalised by rigorous processes of observation, comparison, and empirical study, patterns will emerge. First-order practical models will yield second-order practical models for teaching translation and for improving practice. The relationship between first-order and second-order understandings of translation is a significant issue that we will take up again in our discussion of translation theory.

The Linguistic Model

The linguistic model of translation makes statements about the linguistic mechanisms
involved in the transfer or replacement of source language signs by target language signs. This approach treats translation as a specific, perhaps unique, type of language use. It does not consider external or extralinguistic factors such as critical norms or the constraints of practice. It concentrates, instead, on systemic relationships between the source and target languages. The model studies the linguistic resources of the source and target languages and the mechanisms available in the target language for overcoming the structural differences between source and target that appear in translation. The linguistic model investigates the transfer potentials of words and constructions and tries to establish correspondence rules between languages. Correspondence rules may obtain at various linguistic levels. They may obtain between source and target language words and between source and target language grammatical structures. They may also refer to larger structures. Most correspondence rules are of a complex grammatical-lexical type. The corpus of knowledge about the rule-governed linguistic behaviour of the translation pair is the basis of the contrastive linguistics of translation.

There is also a more general linguistic model that is often taken to represent the linguistic model proper. Sometimes called 'translation linguistics' (Jäger 1975) or 'linguistic theory of translation' (Catford 1965), this abstract branch of translation studies is even thought to be the same thing as translation theory. In our opinion, equating any form of the linguistic model with a full translation theory is not justified. There is more than just linguistics involved in translation. Further, this identification wrongly suggests that linguistic theory-making is the main part of translation studies. It treats the linguistic model as the chief pretender to the throne of translation theory, when it is just one important model among many.

Some scholars have claimed that the linguistic model differs from the other models of translation because it is not an applied model. Because the model deals with the systemic relations between languages, it is highly abstract. The abstract nature and formality of the model is thought to set it apart from the applied models, to make it more theoretical. In the context of translation studies, the binary distinction between the term applied and its presumed opposite, theoretical, is an artifice. It equates theory with abstractness and application with concreteness. In other words, the more we deal with language as system (and the less we deal with concrete translation behaviors) the more theoretical our model. This distinction obscures the relationship between theory and practice. The practical model, which certainly deals with applied problems of language in use, is just as theoretical as the linguistic model. Theory-building is a process of observation, concept formation, hypothesis construction, and verification which may be applied in any discipline. Theory-building proceeds from the observation of the concrete and is a process of making and verifying generalizable statements. These statements may refer to the structural features of language or to translation practice.

Further, the linguistic model of translation is precisely about understanding how language can be applied by translators. The contrastive linguistics of translation is an applied linguistics, in that it studies the linguistic correspondences that actually occur or can occur in translation practice. Any model of translation that claims to deal with translation is dealing with language in use. Translation practice is the application of a translator's knowledge to problems of intercultural communication. This includes the translator's knowledge of the paired linguistic systems. Translation practice results in texts. The application of translational competence to text production is a form of work in all but the most scholarly of situations, and is a legitimate object of translation theory. Thus, all models of translation are 'applied', to the extent that they study a unique form of applied communicative problem-solving. If they state the results of their studies in the form of descriptive and explanatory constructs, then they are also theoretical.

The linguistic model's abstract and formal nature is partly traceable to its concern with linguistic meaning. The linguists of translation investigate how meanings are carried over from one language to another. The reconstruction of meaning is understood as a form of language recoding. From this perspective, translation is primarily a research and rewriting activity. Source linguistic units are rewritten as their target language equivalents. Their respective meanings are held relatively constant. Meaning invariance between source and target language signs and sign constellations is a first principle in this model. Meaning invariance allows greater
possibilities of formal description.

Of course, scholars who embrace the linguistic approach to translation bring with them their views on meaning. As a consequence, they interpret equivalence in a variety of ways. Their understanding of equivalence depends on how far they presuppose a repertoire of semantic universals rich enough and distinguished enough to match the meaning gradients between the simple and complex signs of the two languages.

What current linguistic models describe is not just the matching of discrete linguistic elements below the sentence boundary. It is the genuine reconstruction of utterance meanings. In this respect, the linguistic model goes beyond contrastive grammar and lexicology. The study of the variable mechanisms for reconstructing meaning during translation involves the _semantic quanta_ carried over during restructurings and relexicalisations. There is no doubt that any attempt to measure linguistic meaning transfer of this kind presupposes some form of universal semantics.

The linguistic model is an extension of linguistics applied to bilingually mediated communication. It is a comparative and descriptive model which comes in a variety of forms. All of these forms share a common feature: they focus on the formulation of objective statements about the systematic correlation of patterns of source and target language sign sequences. All source-target differences that occur in translation are traceable to differences in the two language systems. From this point of view, translation studies is nothing but an extension of systemic linguistics. Interlinguistic relationships are a justified concern of professional linguists, and in this respect, they represent basic research. They contribute to our theoretical understanding of the way languages work. It is unclear whether the linguistic model is of use for practicing translators. The linguistic model of translation has been rejected by some practicing translators and by proponents of other models of translation. The model has been characterised as being too abstract and removed from practical application. It is only in this sense, the sense of practical utility, that the linguistic model is not an applied model. The linguistic approach has even been attacked as counterproductive (Berglund 1990; Newmark 1991).

There are two senses of the word _applied_ which can be used with the linguistic model. The first is "having practical utility in the teaching or improvement of translation practice." The second is "examining, describing, and making objective statements about the interaction of linguistic systems as they occur in the applied activity of translation." The linguistic model is applied in the second sense, but not in the first. The generalizations of the linguistic theorists of translation may or may not be helpful for adherents of the critical or practical models. They may be impartial with respect to any potential application. This impartiality is reflected in the way linguistic statements on translation are formulated. The model of translation propounded by linguists cannot possibly stand in any direct relationship to the other models. Scholars using the other models must account for the linguistic aspects of translation within their own research agendas and borrow what they need from the contrastive linguistics of translation. The linguistic model is a legitimate way of looking at translation for its own, linguistic, sake. It tells us something about linguistic reality but not necessarily something about translation reality. At the very least, it is an important part of the knowledge background of someone who wants to take on translation as a profession, as the knowledge of certain sciences is essential for the aspiring physician.

**The Text-Linguistic Model**

The text-linguistic model of translation maintains that an original text and a translation are different not only because their sentences are different (having been determined by the linguistic rules of two different language systems), but also because there are constraints operating at a level beyond the sentence. A traditional contrastive linguistic approach cannot explain these suprasentential _textual_ factors.

Another motivation for the development of the text-linguistic model of translation comes from the practical experience of doing translations and teaching translation students. If we look at good translations and compare them with dreary dictionary-bound, grammar book-inspired, linguistically correct translations, the limitations of the linguistic approach will be apparent. The lexical items, syntactic structures, and textual properties that make a successful translation are not necessarily those a contrastive linguistic model
might have predicted. The linguistic systems of the source and target cannot account for the pragmatically motivated transformations and modifications made to a linguistically adequate target text. By *pragmatics* we refer to the various uses of language by speakers and writers in particular communicative situations (Neubert 1968, 1973). The translator must usually modify the source text using a variety of methods, including explicitation, deletion, and modulation in order to produce a more satisfactory and pragmatically adequate translation. This textually adequate translation is better than anything that could be produced using only the more evident equivalents suggested by a language-systemic model. Translations are more than duplications or restructurings of source language sequences. They represent configurations of *text sentences*. The sentence-by-sentence progression of a translation is determined by top-down processes driven by the conventions that obtain for a particular textual category in the target culture (Neubert 1988). The linguistic model presumes a bottom-up process which begins with words and their discrete meanings. Bottom-up translation can never yield acceptable target language texts.

In the text-linguistic model meaning is not sentence-bound. The model locates and distributes meaning equivalence throughout the text. Instead of being isolated in words and sentences, meaning is also carried globally in the text. What is actually carried over into the target text during translation is the composite semantic value and pragmatic function of the source text. With the global meaning of the original as the determining factor, the translation is reconstructed as a new semantic and pragmatic totality in the target language community. The surface structure of the reconstruction is not a sentence by sentence rendering of the original. It is a top-down recreation of the text through the purposeful selection of target language resources. The selection of linguistic resources is guided by the virtual translation (mental model) in the translator's mind. The linguistic resources of the target clothe the virtual translation and create the translation as physical text.

The model is called 'text-linguistic' because it is a further development of the linguistic model. It reflects the expansion of translation studies into discourse analysis and pragmatics. The text-linguistic model differs from the linguistic model in its broader, text-based conception of meaning and its more realistic formulation of the notion of translation equivalence. It locates equivalence at a textual and communicative level, not at the sentential and lexical level. The text-linguistic approach provides more powerful analytic tools for the study of translation than sentential linguistics has provided. This analytic power has its price. Because of the systemic relationships between source and target languages, semantic correspondences between individual sentences in source and target texts are quite predictable in a linguistic model. The similarities and differences between the textual worlds of the source and target cultures are less defined and less predictable. This is, of course, part of the nature of texts. They are not entirely the product of linguistic rules. Most translations have to simulate the typical textual profiles of the target culture. The rules that will show a translator how to produce the right textual profile every time have not been written yet. The temptation is to envy the predictability that the sentence-bound linguistic model can provide. There are, however, limits to this predictability; as one moves beyond the sentence boundary, the linguistic model cannot predict what actual, high-quality professional translations will look like (Neubert 1987; Neubert 1989: 63).

The linguistic and text-linguistic models treat meaning differently. In the text-linguistic model, translation does not involve the transfer of meanings. It is, rather, the *communicative values* of the source text that are transferred. The term refers to the communicative contextualisation of words and meanings in discourse. Communicative values are meaning composites seen entirely at a textual level and in communicative context. One might argue, as is fashionable in some linguistics circles, that we should expand the boundaries of linguistics to include all of the variables associated with human communication. One might then dispense with a separate text-linguistic model, and include it as a special form of the linguistic model. As it stands, it is better to consider the text-linguistic model as a distinct approach. Its frame of reference is not the linguistic system but the textual systems of two communicating communities. Textual systems are complex sets of expectations text users have about what texts should be like. With an understanding of these expectations in mind, the translator engages in a
textual process of transfer and text production. In the translator's eyes, the target text is a text induced as a response to another text. The translator facilitates the textuality of the target text by mediating the two textual systems. Translations according to this model are text-induced text productions.

The Sociocultural Model

There is another model of translation that deemphasises the linguistic system. The model does recognise the verbal substratum of translation, but defines translation primarily as an attempt at crosscultural communication. In this model, texts are seen as unique products of the history and social structure of a particular culture. Because their texts are unique, texts are not repeatable. An extreme version of this model leads to translation nihilism. Translation would be impossible. Less radical views would propose specific strategies to prevent sociocultural loss during translation. In the sociocultural model texts are either not translatable or target texts are corruptions of the original sources. Some proponents of the sociocultural model will admit translatability. They simply think that translation's ability to overcome historical and socio-cultural barriers is limited. These translation sceptics will sometimes refer to "untranslatable" texts for which the target culture has no need. The texts have no counterparts in the other culture. In these cases, the textual situations are incompatible.

The socioculturalists particularly oppose the idea of translation equivalence; they see it as an illusion. They perceive translations as glimpses into alternative realities where perceptions are different. If this otherness is translated away, they argue, then genuine translation is betrayed. Given this position, it follows that translations should always be recognized as surrogates. What the readers of the surrogate text retrieve from them is never the "real thing". This contradicts the text-linguistic model where the motivation is communion with the textual conventions of the target community. The sociocultural approach maintains that translations should always read like translations. The target text must be an oblique rendering of the source. Points of socio-cultural and linguistic difference are maintained as markers of its sojourn into alien territory. Nevertheless, the rules of the target linguistic system still apply because the result must be minimally accessible to the target audience. Sociocultural translation creates surface understanding on the basis of linguistic sequences that are formally correct, but leave the reader unsettled. The model produces target texts that are an unnatural hybrid of target language and source text. Many proponents of this school believe this is as it should be.

The sociocultural target text is composed of familiar words and phrases, interspersed with untranslatable borrowings from the original. A translation's effect on the target culture is always hard to predict. The basic tenet of the sociocultural model is that this effect must be different from the effect of the original on its native audience. Translations and their readers have to live with this state of affairs. By compensating for the unavoidable divergence of source and target culture, and by meddling with their linguistic consequences in the target text, sociocultural theorists argue that translators prevent readers from appreciating the source culture. In their view mediated translations do away with the original author and place too much responsibility for the target text in the hands of the translator. A variation of this approach (Venuti's resistive translation) calls, ironically, for more translator influence. Venuti urges translators to discard their "invisibility" (Venuti 1988). These arguments are a clear break from the more pragmatic line of the textually oriented translation scholar. Clearly, one's model of translation shapes one's ideas of what a translation should be and what must be done to produce one.

A choice of the sociocultural model over the text-linguistic model is not a choice between two global models. The sociocultural approach is clearly only applicable to certain kinds of texts. It is useful in situations where the violation of textual conventions in the target language is warranted by an overriding concern with the value of source language linguistic form as carrier of cultural value. The text created in the target language is, however, still a text. It is an artificial ideotext or "opaque" text crafted by the translator as a specific vehicle for cultural values. Such texts would rarely be used for more mundane and practical kinds of translations. These opaque texts, unless they are completely idiosyncratic, display their own textual profile. This profile might be a hybrid of the conjoined textual systems of the two.
cultures. It could be an adaptation of the source language textual system to the target culture. The text is still the central issue in this model, just as it is in the critical, practical, and text linguistic models.

The Computational Model

The five models discussed so far presume that translation is a completely human process. Since the earliest days of the digital computer, however, attempts have been made to translate by or with the assistance of computing machines. There arereally two computational models of translation, machine translation and computer-aided translation. Machine translation requires very little, if any, human assistance during the actual translation phase. Computer-assisted translation leaves the translation process in the hands of the human translator but provides intelligent support for his or her activities.

Machine translation reduces the processes and procedures of translation to formal representations. The representations are not based on human behaviour. It is quite possible to get reasonable results without using human-derived algorithms. Texts are translated by substitution and transposition; the process is controlled by rules that act directly on the character strings in the source text. A human-programmed expression of a linguistic model underlies the translation software, but the actual transfer does not involve human participation. Machine translation is based upon formal representation; translation equivalence is reduced to formal equivalence. This equivalence-based recoding of linguistic form is rarely adequate. Pre-editors and post-editors have to edit the machine product for the human reader. Strangely enough, human post-editing can improve machine translation; in complex systems with knowledge acquisition capabilities it may be possible to analyze the revisions that are made by pre- and post-editors. The analysis of revisions can provide new rules to be added to the translation rule-base. By investing their expertise, translators can improve the set of transfer rules. An evolving cycle of feedback and revision, with increasingly successful translation runs, could produce more sophisticated machine translation systems. The machine translation model parallels the linguistic model. The formal equivalences on which the machine relies are equivalences between the source and target languages. They are programmed as sets of rewrite rules triggered when the program encounters words and constructions and recognizes them as tokens of stored dictionary entries and programmed syntactic templates.

There are several approaches to machine translation. What they have in common is a reliance on formal transfer mechanisms. Some approaches use direct transfers between source and target language; others utilize an interlanguage. An interlanguage is a set of metalinguistic expressions which are used to mediate the different sign systems. As machine translation becomes more sophisticated, this interlanguage will include even greater amounts of semantic and pragmatic information. Machine translation could be enhanced by incorporating text-linguistic information. One could, for instance, qualify equivalence rules with text-type specific operators. The software would then automatically select those renderings typical of particular text types. The amount of editing would be greatly reduced. This refinement would be possible only in certain domains and with text types whose textual conventions are expressible as procedural or declarative knowledge. Corporate translation users will have to assume the development costs for such systems. Applications will only be feasible if there are large numbers of texts to be translated. Machine translation is clearly linked with high-volume specialized commercial and technical translation.

The machine translation model may be quite effective in these restricted applications. It can be effective even if it is not psychologically valid. It is enough that it be structurally valid. Structural validity means that the translation result is acceptable, but the process used to achieve it is not psychologically real. The machine translation model is not a model of translation activity, what a translator does. It is a formal model developed to achieve results. While it may be possible to design computer software that translates like human beings do, we might find that such formal representations are not as efficient as purely structural representations (Shreve 1990).

In the other computational model, computer-assisted translation, the computer is a tool for the human translator. The translator stays in control of the translation. The translator works within a software environment tailored to his or her work-style. The environment acts as an amplifier or
prosthesis for the translator (Shreve 1991). The effective software design of computer-assisted translation environments requires empirical studies of translation behaviour. Based on preliminary empirical work, the well-designed computer environment should support those areas of consultation and research which consume most of the translator's time. Computer assistance (excluding normal word-processing functions) involves five primary areas of reference support (Shreve 1990; Scherf 1990; Gommlich and Förster 1991):

1. terminological/lexical assistance
2. encyclopedic and knowledge - organizational assistance
3. text-typological and parallel text assistance
4. translation-strategic assistance
5. document management assistance

The translation-strategic component is a mechanism for recording and retrieving successful translation strategies. A properly designed system could capture effective solutions to typical translation problems and store them. Computer-assisted translation would include translation expert systems capable of providing intelligent decision support (Neubert 1986).

Both sub-models of computer translation require linguistic and translation expertise. Even though the machine translation model does not mimic the actual process of human translation, the results of the translation are judged against human translations. The algorithms driving the machine translation may then be altered to provide more acceptable results. Both machine translation and computer-assisted translation involve decision-making. In the case of machine translation the computer makes decisions based on formal representations created to achieve end results. In computer-assisted translation decisions are made by human beings, using a knowledge support system designed to enhance the quality of the translations.

To a certain extent, translations produced by machine translation are accepted as unfinished products. They are a kind of raw material which a human translator or post-editor has to finish. Our ability to proceed beyond this raw material stage in machine translation is limited by our ability to understand and represent the translation process as a textual and not just a linguistic process. The limits are not technical limits. The knowledge needed to improve machine translation has not been captured in a formalism appropriate for automation.

The computational model contributes to a better understanding of the other models. The attempt to produce good translations by machine (or with machine support) presumes an appreciation for the important issues in translation. Both models are ultimately concerned with producing usable texts. Like the practical model, the computational model is pragmatic. The quest for better translations will push computational models to find ways of dealing with textuality and the text production process. These models will focus on the text and its textuality.

The Psycholinguistic Model

No single model can deal with all aspects of translation. The six models discussed so far have not dealt specifically with the mental operations involved in the translation process. Translation in relation to other kinds of verbal process is a 'task that makes certain demands on the cognitive system' of its practitioners (Neubert 1991). The psycholinguistic model is concerned with describing the cognitive aspects of the translation process. Translation teachers began this line of enquiry when they started to search for ways to adapt their teaching to reflect the cognitive demands translation made on their students. The psycholinguistic approach has outgrown this initial pedagogical perspective. It now deals with the general cognitive structure of translation, including the specific cognitive processes that are involved. The model attempts to isolate the cognitive factors and language processing strategies which characterize translation. The primary research question in this model is: What goes on in the mind of the translator? (Kjings 1986).

The psycholinguistic perspective views translation as a "black box" in which cognitive processes occur. Toury (1982: 25) comments on the empirical implications of the psycholinguistic model:

Translated texts and their constitutive elements are observational facts... translation processes, those series of operations whereby actual translations are derived from actual source texts, though no doubt also empirical
facts, and as such part of the object-level of translation studies, are nevertheless only indirectly available for study as a kind of 'black box'.

To uncover the cognitive processes hidden inside the black box, students of translation must use empirical methods, including experiments. This model, of the ones so far described, is the most overtly empirical. It has modelled its research agenda on psycholinguistics and the cognitive sciences.

One method for unveiling the contents of the black box is the think-aloud-protocol (TAP). These protocols capture the translator's reactions and commentaries as he or she reflects on the task at hand. They track the development of the text from its initial to its final version using the translator's verbalized self-commentary. A solely verbal protocol, however complex it may be, does not always pinpoint those concrete textual problems in the original or in the nascent target text that have prompted a particular reaction or comment. Some researchers have resolved this problem by using more sophisticated research methods. Video-cameras, for instance have been used to record rapid eye movements that accompany translation; they are used to index the respective portions of the protocol to specific segments of the source and target texts. One problem with early studies using the think-aloud-protocol was that they used student translators.

Using these subjects confused the real problem of translation with problems arising from inadequate language skills. Most studies now focus on the work of experienced translators (Krings 1986, 1988).

The notion of translation process, which we shall take up in the next chapter, is of particular interest in the psycholinguistic and the practical models. In the practical model, the translation process is understood as what the translator does when he or she translates. Translation teachers and other scholars interested in the heuristics of translation have enumerated translation strategies which are distillations of the observation of practice. Such distillations, based on observable patterns of practice, have their cognitive counterparts. One goal of the psycholinguistic model should be to determine the cognitive substrates of observable patterns of practice. The cognitive substrates might then be matched with pedagogical concepts such as "translation strategy" to explain how transposition, modulation, equivalence and the other so-called translation strategies are psychologically realized.

It is unlikely that the intricate network of mental processes that make up translation can be neatly reduced to a series of heuristic translation methods such as amplification or transposition. Nevertheless, it might be possible to identify distinct categories of mental operations that take place in the working translator's mind. These operations would be combined in complex ways to produce specific linguistic patterns in target texts. Generalizations about textually realized patterns are the so-called "strategies" we teach to students in the classroom. Teachers are not the only ones who can benefit from psycholinguistic research. A better understanding of the psychology of translation can help those who work with the computational model. As software develops to the point where serious artificial intelligence is feasible, it might be possible for computers to learn from human translators. The cognitive strategies culled from think-aloud-protocols and from interviews might serve as templates for algorithms to control the inner workings of an intelligent translation machine.

The psycholinguist is interested in the cognitive effects of situational variables on the "internal" translation process. He or she is interested in the cognitive translation behaviours evoked in response to those variables. Some important research questions might include investigating the influence of language system, time constraints, levels of experience, information structure of the source text, and familiarity with the target culture on the cognitive processes of translation. Ultimately, the psycholinguistic model will find that the cognitive processes of translation are a unique subset of the cognitive strategies of text processing. They are related to text production and text comprehension. The psycholinguistic model can expose the intricate cognitive ways and means of translation as a textual process. The source text and the nascent target text are reference points at either end of the black box of translation.

Translation Theory: a Prologue

This summary of the models of translation is an attempt to explain some common factors and to resolve differences. Many controversies in
translation studies might be quelled by a better understanding of how the different perspectives on translation relate to one another. Each model represents a particular point of view, but there are also significant interdependencies. Eventually, without yielding their specific perspectives, each of these models could contribute to a more ambitious and more adequate integrated theory of translation.

There is a great deal of confusion about what a theory of translation is and should be. Without dwelling in detail on the philosophical background of the notion of theory, it is clear that the expression is used by different scholars at different times for a variety of purposes. There is little attempt to distinguish the various senses of the term. There appear to be many levels of theory, each with different intersubjective authority. Some of the senses are mundane. To the layman, a theory is very much like an opinion. It is a common-sense construct which is descriptive and explanatory, but its intersubjective status is weak. Sometimes, by persuasion, or faith, or the use of compelling arguments, these opinion-like constructs are accepted by others. They achieve authority by consensus. These broadly-held opinions are sometimes called theories. Later, they may be codified into formal systems; the formalism adds rigour and the possibility of "proof" within the system. Sometimes a theory is an explanation derived by deduction or construction from such a system. The theories of literary criticism and linguistics are often of this type. Sometimes specific methods for uncovering patterns and verifying statements may be added to the system. The empirical theories of science are examples of theories augmented by verification methods. Given this confusing state of affairs, it is understandable that Newmark and others should deny the possibility of an integrated theory of translation (Newmark 1991).

This volume argues for an empirical approach. Alfred Schutz (1963: 235) characterizes the approach as involving "discovery through processes of controlled inference ... stabile in propositional form and capable of being verified by anyone who is prepared to make the effort to do so through observation." Our call for an empirical approach to translation studies is not new. It is part of a general movement toward a more rigourous, observation-based and verifiable translation studies. It has been called for, among others, by Toury (1982) and Snell-Hornby (1988). Although she has not used the term "empirical", Snell-Hornby's agenda for an integrated translation studies dovetails in many respects with our own.

On what basis can it be claimed that an integrated theory is impossible? Is it because the subject of study is so complex? While complexity is an obstacle, to be sure, it is not a reason to deny an integrated theory. Translation scholars have already dealt with complexity by decomposing the problem. The models we have discussed each focus on one part of the larger issue. By fully developing each of these partial perspectives a holistic view might be constructed, but only if a common methodo-critical system is maintained. The notion of an integrated theory does not preclude special theories of scientific, literary, and poetic translation. This notion of diversity in integration is a central issue of Snell-Hornby's 1988 volume.

Our current conceptual disarray is a result of our motley genealogy. Proponents of the critical model use a variety of approaches, many derived from literary-critical and political "theory" systems (Lacan, Foucault, Marx). Linguists and text-linguists often use formal systems derived from logical calculi and linguistics to express and validate their theories. Such theories are more like mathematical proofs. Psycholinguists of translation have adopted the empirical techniques of the behavioural scientists, and their theories are empirical. The pedagogues and translators using the practical model are interested in application theories. Such theories are based on the observation and recording of what appears to work. These, being observation based, are also empirical. It is, however, a naive empiricism. Sometimes pedagogues proceed simply from entirely subjective descriptions of "what has worked for them." These are first-order, not second-order formulations. What we accept as a theory depends on what we want from the theory, on the assumptions that we start with, and on the history and authority of the discourse which defines our profession. When these conditions are so different, then a common ground appears quite visionary.

Earlier we called for explicitness in translation studies. Scholars should reveal research aims and research objectives. This explicitness should extend to the theoretical systems they use. If scholars say that their models are descriptive and
explanatory, we need to know the bases on which this claim is made. Is the claim based on an elaborate argument, a critical apparatus, a closed conceptual system, a developed systematics, or the empirical method? An integrated empirical theory of translation which brings together the various perspectives is possible, but only within the limits of empiricism. Several integrated theories might be possible at once, each based on its own principles. What is not possible is integrating the motley mix which now characterizes translation studies. As long as the foundations of the common methods for the discipline are in doubt, an integrated theory is out of reach.

Having an integrated theory of translation does not presuppose that there will be one kind of translation proposed as the best kind of translation. The purpose of translation theory is not to propose that communicative or pragmatic translation is better than semantic or philological. This confuses the different types and techniques of translation with ways of describing and verifying our observations of translation. Different ways of doing translation, insofar as they actually occur, are the subject matter of translation studies, not its methods. We can accept, given our own arguments so far, that there are many different types of translation. The different forms arise from the fact that every translation is a dynamic intersection of translation situation with translation process. This intersection produces translation results which are always judged as texts. An integrated theory of translation should proceed from a focus on the description, explanation, and verification of statements about what is done, rather than what should be done, to produce target texts. Even here, the empirical approach may have a significant impact. Since the acceptability conditions for target texts may be assessed empirically, it could be possible to base translation heuristics on empirical results. Too often translation theorists work backwards from a particular style or type of translation, seeking to justify it. At this point in the development of our discipline we need to focus on the observable facts of translation and proceed forward to a generation of verifiable general statements.

Our observation of the facts of translation will probably show us that there is a virtual infinity of translation situations and a true infinity of translation results. The true stuff of translation studies is the body of practice, what translators actually do and how translation users react to what they do. Our task is to recognize in the infinite variety of the practice of translation significant patterns and regularities. We need to describe typical patterns, typical ways of dealing with problems, typical situations in which certain kinds of translation are preferred. It may be that there are no patterns in translation practice and each translation is completely unique, a kind of linguistic miracle. Then we would agree that translation theory is impossible. There can be no science of miracles. But, if we were allowed the single assumption that translation is not random, then an integrated translation theory must be possible.

If we base translation theory on translation practice, then we are not faced with choosing linguistic/semantic over pragmatic/communicative approaches or emphasising source-culture over target-culture values. Rather, we recognize that there is a translation reality which is extremely diverse and which calls for different translation responses. Our approach to translation insists that all of these approaches are valid if they have a basis in the textuality of translation and are empirical in method.

By basing translation theory on translation practice, we make an implicit argument for a translation studies which is based on the first-order phenomena of translation. The first-order facts of translation are centred on the text. They are actual source texts, actual textual situations, real first-order accounts of translation processes, and real reactions of readers to target texts. In the next chapters we shall address the specific textual factors that are the primary variables in an empirical approach to translation. At the end of the discussion we shall return to the issue of translation theory and summarize our agenda for a text-based empirical translation studies.
References