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Fundamentals of Translation

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Содержит 12 разделов, в каждом из которых приведены основы теории перевода, объяснения особенностей технического перевода, упражнения для выработки практических навыков, а также вопросы для самоконтроля. Предназначено для развития у студентов компетенции перевода научно-технической литературы. Материал пособия способствует формированию у студентов теоретической базы по научно-техническому переводу.

Для студентов бакалавриата, обучающихся по направлениям подготовки «Теория и практика межкультурной коммуникации» и «Прикладная лингвистика».

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Предисловие

Издание разработано в соответствии с Образовательным стандартом МГТУ им. Н.Э. Баумана по курсу «Практический научно-технический перевод» для самостоятельной работы студентов, обучающихся в бакалавриате по направлениям подготовки «Теория и практика межкультурной коммуникации» и «Прикладная лингвистика». Учебное пособие предназначено для студентов, не имеющих предварительного опыта перевода, но в своей учебной и профессиональной деятельности занимающихся переводом научно-технической литературы.

Цель данного пособия — ознакомить студентов с основами перевода, сформировать у них переводческую компетенцию для успешной работы с научно-техническими текстами на английском языке по специализации, изучаемой в вузе.

Пособие содержит 12 разделов. При модульной системе обучения в каждый модуль включено по 4 раздела (темы).

Учебное пособие предназначено для аудиторной и самостоятельной работы, оно представляет собой введение в основы научно-технического перевода. В издании ясно и кратко изложены фундаментальные понятия теории и практики перевода, включая такие вопросы, как:

теория перевода;

эквивалентность в переводе;

виды и методы перевода;

различные подходы при переводе с английского языка на русский.

Авторы пособия объясняют, что такое переводческая компетенция и каковы особенности технического перевода. В конце каждого раздела приведены вопросы для самоконтроля. В приложении представлены отрывки из аутентичных научно-технических текстов для развития практических навыков перевода. Эти тексты также могут быть использованы преподавателями для проверки уровня сформированности навыков научно-технического перевода у студентов.

Книга представляет интерес для практикующих студентов-переводчиков неязыковых специальностей, которые хотят расширить теоретическую базу и свои знания о переводе. Пособие может быть использовано в качестве дополнительной литературы на практических занятиях по английскому языку с аспирантами, специалистами и студентами старших курсов неязыковых специальностей.

Введение

Современный выпускник технического вуза должен обладать целым набором компетенций, в том числе и компетенцией технического перевода. Однако переводить с одного языка на другой не означает просто заменять слова. Каждый переводчик должен владеть переводческой компетенцией.

Переводческая компетенция — особый набор способностей, знаний и навыков, необходимых для успешного занятия профессиональной переводческой деятельностью. Переводческая компетенция включает способности понимания исходного текста и создания текста на языке оригинала. Широта и богатство творческого потенциала переводчика проявляются в его способности осмыслить изложенное (сказанное), обработать информацию, выраженную словами, понять за ними мысль, которую надо тут же гибко и адекватно передать на другом языке.

Авторы надеются, что теоретический материал в сочетании с практическими примерами, представленными в учебном пособии, помогут студентам, изучающим основы перевода, выстроить четкую систему понятий перевода, освоить основные стратегии перевода и подходы к нему, которые обучающиеся смогут применить на практике.

THE PRINCIPLES OF TRANSLATION

Language as a means of communication

A language is a *code* which possesses *features* — phonological (and, in the case of written languages, graphological), syntactic, lexical and semantic — and a language use is made possible by making selections among these sets of code features in order "to create ... adequate vehicles for the communication of meaning" [1:8].

Thus, language has a dual nature: it is (1) a formal structure (a code) and (2) a communication system. "Indeed, ***any language resembles a code being a system of interrelated material signs (sounds or letters), various combinations of which stand for various messages...***" [1:12].

The process of language communication involves sending a message by a **message sender** to a **message recipient** — the sender encodes his mental message into the code of a particular language and the recipient decodes it using the same code (language) [15:21].

During the last fifty years the study of language has undergone radical changes: the focus of interest has widened from the purely historical to the contemporary, from the prescriptive to the descriptive, from the theoretical system to the concrete realization, from the micro-level of the sign to the macro-structure of the text [10:8].

Definitions of translation

Translation is a specific type of bilingual communication since (as opposed to bilingual communication proper) it involves a third actor (translator), and for the message sender and recipient the communication is, in fact, monolingual [15:22].

Translation is the replacement of a representation of a text in one language by a representation of an equivalent text in a second language [6].

The following definition has been given in his own translation from French by R. Bell: "Translation is the expression in another language (or **target language** — TL) of what has been expressed in another, **source language** — SL, preserving semantic and stylistic equivalences" [1].

He also defines the goal of translation as "the transformation of a text originally in one language into an equivalent text in a different language retaining, as far as possible, the content of the message and the formal features and functional roles of the original text" [1:5].

What is translation? Often, though not by any means always, it is rendering the meaning of a text into another language in the way that the author intended the text [8:5].

Translation is a craft consisting in the attempt to replace a written message and/or statement in one language by the same message and or statement in another language. Each exercise involves some kind of loss of meaning, due to a number of factors. It provokes a continuous tension, a dialectic, an argument based on the claims of each language. The basic loss is on a continuum between overtranslation (increased detail) and undertranslation (increased generalization) [7:7].

Translation is a means of interlingual communication. The translator makes possible an exchange of information between the users of different languages by producing in TL a text which has an identical communicative value with the **source** (or original) **text (ST)**. This **target text (TT**, which is the translation) is not fully identical with ST as to its form or content due to the limitations imposed by the formal and semantic differences between SL and TL. Nevertheless the users of TT identify it to all intents and purposes, with ST — functionally, structurally and semantically [12:4].

Translation as a term and notion is of polysemantic nature, its common and most general meaning being mostly associated with the action or process of rendering/expressing the meaning/content of a source language word, word-group, sentence or passage (larger text) in the target language or with the result of the process/action of rendering.

The role of the translator

It is a little ironic that the role of the translator has only recently become a concern in translation studies [2:3]. The translator is a bilingual mediating agent between monolingual communication participants in two different language communities, i.e. the translator decodes messages transmitted in one language and re-encodes them in another.

It is the re-encoding process that marks the bilingual translator off from the monolingual communicator. As receivers, both have the same involvement in decoding — the difference is one of degrees rather than of kinds — but their encoding behaviour is in strong contrast.

When taking a turn as a sender, the *monolingual* is obliged

(a) to encode a text into the language used by the sender,

(b) to encode messages which are different from those received and

(c) to transmit them to the previous sender.

The translator's acts contrast on all three scores. For the *translator*, the encoding

(a) consists of re-encoding into a different language,

(b) concerns the same message as was received,

(c) is aimed at a group of receivers who are not the same as the original sender [1:15].

A simplified presentation of translation as a unidirectional and linear process:
(1) a translator receives signal 1 containing a message,
(2) recognizes code 1,
(3) decodes signal 1,
(4) retrieves a message,
(5) comprehends the message;
(6) translator selects code 2,
(7) encodes a message by means of code 2,
(8) selects a channel,
(9) transmits signal 2 containing the message [1:19].

Questions

1. How does a language act as a means of communication?
2. What changes have taken place in linguistic studies over the past fifty years? What impact do you think they have had on the translation theory?
3. Compare the definitions of translation proposed by several scholars. How do they differ? Which one seems to be the most encompassing? Can you suggest your own version?
4. What are the differences between monolingual and bilingual communication? What happens if a mediating agent (translator) participates in the bilingual communication process?
5. R. Bell admits that his model of translating is 'rather crude and vague' because it is based on the assumption that translation is a unidirectional and a linear process. Can you think of situations when decoding becomes cyclic and cooperative rather than linear and unidirectional?

Practice your translation skills

Imperative Mood

1. Suppose further that we propose the following general definitions.
2. Note that the test can be useful even when its basis is poorly understood.
3. As a final motivation here, for the usefulness of the analysis, compare (20) and (21).
4. If a dispute arises, re-formulate the project to eliminate the problem.
5. Suppose we adopt a hierarchical relationship between the two subtheories by fiat, such that the second presupposes the existence of the first.
6. Notice that we do not attempt to constitute something novel here. See Appendix A for a complete explanation of the statistical methods used in this test.
7. Let b(n) denote the total number of non-isomorphic structures.
8. Let us tabulate and briefly analyze the problem to be met.
9. Let us summarize briefly the characteristic features of tunnel diodes.
10. In conclusion, let me summarize what has been done.

11. Let me start by giving an analogy.
12. Let me conclude with one more example.
13. Let us see how this force acts in the abstract.
14. Let us begin by examining these "Writings" in detail.
15. But let us assure for the sake of argument that Cole is right in this matter.
16. Next let us deal with each hypothesis and generalization in turn.
17. Let us set down two requirements for the adequacy of the analysis.
18. Let us now examine more closely the findings of the third statistical test with respect to each of our four parameters.
19. Let us recall that at least a century and a half had to pass before the Copernican view of our local Universe was established.

Must, have to and *should*

1. These facts must be expected to produce variation.
2. Hence, this approach must be wrong.
3. It must have been an exciting and rewarding symposium.
4. Clearly, there must have been good reasons for this fundamental change.
5. The process of their decay must have been very gradual but constant.
6. The evolution of such a state must have been substantially motivated by the need to preserve information content.
7. The exact import of Maloney's claims must be established and tested, and the range of data expanded to cover other system types.
8. It should follow that (37–40) are anomalous.
9. Proponents of such theories should read this book.
10. Two points in connection with (13) should be noted.
11. No theoretical significance should be attached to the term.
12. The hypothetical character of all these formalisms should now be clear.
13. Further studies should include analysis of both of these sets of features.
14. It should be clear that this is not a counterexample to the general principle that we have proposed.
15. Why should the discussion of a scientific theory be constrained by a national boundary ?
16. One should note the recent rise of attention to these questions.
17. Someone should have edited the style of the non-native users of English.
18. Of course, new evidence might prove that this model should be changed or replaced.
19. The availability of this important collection should serve to stimulate considerable interest in structuralism.
20. These results should be of interest to all those who are interested in hypothesis formation.

TRANSLATION THEORY

A theory is an explanation of a phenomenon, the perception of system and order in something observed. It exists in the mind. It has no tangible manifestation [1:24–25]. As any observable phenomenon, translation can be the object of a scientific study aimed at understanding its nature, its components and their interaction as well as various factors influencing it or linked with it in a meaningful way. Theoretical research is to discover what translation is, to find out what objective factors underlie the translator's intuition, to describe the ways and methods by which the identity of the communicative value of ST and TT is achieved. The objective knowledge obtained can then be used to help the translator to improve his performance as well as to train future translators [1:5].

The core of the translation theory is the general theory of translation which is concerned with the fundamental aspects of translation inherent in the nature of bilingual communication and therefore common to all translation events, irrespective of what languages are involved or what kind of text and under what circumstances was translated. Basically, replacement of ST by TT of the same communicative value is possible because both texts are produced in human speech governed by the same rules and implying the same relationships between language, reality and the human mind. In any language communication is made possible through a complicated logical interpretation by users of the speech units, involving an assessment of the meaning of the language signs against the information derived from the contextual situation, general knowledge, previous experience, various associations and other factors. The general theory of translation deals with translation universal and is the basis for all other theoretical study in this area, since it describes what translation is and what makes it possible [12:6].

The general theory of translation describes the basic principles which hold good for each and every translation event. In each particular case, however, the translating process is influenced both by the common basic factors and by a number of specific variables which stem from the actual conditions and modes of the translator's work: the type of original texts he has to cope with, the form in which ST is presented to him and the form in which he is supposed to submit his translation, the specific requirements he may be called upon to meet in his work, etc. [12:7].

S. Bassnett-McGuire states that the purpose of translation theory is "to reach an understanding of the processes undertaken in the act of translation and not as is so commonly misunderstood, to provide a set of norms for effecting the perfect translation" [1:22].

As R. de Beaugrande warns: "it is inappropriate to expect that a theoretical model of translation should solve all the problems a translator encounters. Instead, it should formulate a set of strategies for approaching problems and for coordinating the different aspects entailed" [1:23].

We have to bear in mind that, as W. Wilss puts it, "Neither psycholinguistics nor neurology can as yet provide reliable information on how linguistic data are stored in the brain, how linguistic matching procedures take place and what mental structures are active in recalling linguistic information" [1:24].

Translation theory's main concern is to determine appropriate translation methods for the widest possible range of texts or text-categories. Further, it provides a framework of principles, restricted rules and hints for translating texts and criticizing translations, a background for problem solving. Translation theory attempts to give some insight into the relation between thought, meaning and language; the universal, cultural and individual aspects of language and behaviour, the understanding of cultures; the interpretation of texts that may be clarified and even supplemented by way of translation [7:19].

Questions

1. In V. Komissarov's opinion, what makes translation possible?
2. What are the interacting components in translation?
3. How can W. Wilss' observation affect translation studies?
4. What are the aims of a translation theory according to P. Newmark?

Practice your translation skills

Sequence of Tenses

1. He claimed that Gibbs (1989) had earlier suggested such a solution.
2. The investigators noted that the two variables had three levels.
3. We learnt that the results reported by these scientists were erroneous.
4. They concluded that his ongoing project was also a failure.
5. In Larson (1992) he agreed with Jabrdon that the analysis was hard to take seriously for other reasons.
6. He showed that it was 02 that had the most similarities to 05.
7. The originators of the theory argued that it was essential to take such relations as primitives.
8. Results showed that the relative frequencies were significantly different.
9. Their results demonstrated that such an event could have happened even before the date.
10. Friesen (1993) insisted that this class of variation had already been studied, presumably by Kuiken (1991).
11. We were told that the names would be read in a numerical order.

12. He suggested that comprehension in such cases is a matter of "grasping the simplest relation".
13. The results of the study indicated that increases and decreases of intensity were accompanied by similar changes in rates of a movement.
14. It was hypothesized that both frequency and intensity are positively related to perceived speech rate.
15. Fedron and Bond (1993) argued that the alternative explanation could be accepted.
16. Finally, they pointed out that the duration of the stimuli was the same across and within groups.
17. Moreover, a study of Follman, Merica and Silverman (1995) seemed to indicate that neither the direction nor the order of the categories significantly affects the reliability of a scale or the mean yields.
18. Earlier, I thought that we could drop the third analysis (summarized in 7) from consideration. 26. As Faltz (1988) rightly pointed out, it would have been much better to use another term.
19. In my personal communication with him I had to admit that I refuted the claim that he attributed to me.
20. They failed to remember that any choice among alternative analyses may imply a choice among alternative general theories.

May, might

1. The point may still seem a trivial one.
2. He may have stopped his experiment.
3. The argument against the proposal may continue.
4. The dichotomy may seem somewhat artificial.
5. Though these definitions may appear naive, they are sufficient for the purpose at hand.
6. Because of these limitations the book may not be the ideal text for its intended audience.
7. One may be motivated by the simple desire to persuade an interlocutor.
8. There may be a predisposition to initiate this process.
9. This may simply be because this is itself not amenable to summarizing in any rational terms.
10. This may or may not be a useful idea, but it is very different from McLowe's proposal.
11. Aristotle and the Stoics may have held analogous views.
12. Indeed, the reader may well have noticed that I have not been absolutely consistent in my own use of the term.
13. This concludes our discussion of how the devices mentioned at the beginning of this chapter may be shaped and used.
14. One final example of this method may be of interest.

15. Ultimately, she may have achieved her rather modest goal: to provide some ideas and material for those who teach the discipline.
16. It is plausible to suggest that this may have played some role in the development of this field of knowledge.
17. We might approach this by asking first, what is metalanguage good for?
18. It might be well to consider these claims as an introductory problem.
19. As one might guess, these topics are highly interdependent.
20. But Figure 1 does not conform as well as one might wish to the hypothesis.

EQUIVALENCE IN TRANSLATION

Types of equivalence

Texts in different languages can be equivalent in different degrees (fully or partially equivalent) in respect of different levels of presentation (equivalent in respect of context, semantics, grammar, lexis, etc.) and at different ranks (word-for-word, phrase-for-phrase, sentence-for- sentence). It is apparent, and has been for a very long time indeed, that the ideal of total equivalence is a chimera. Languages differs from each other; they are different in form having distinct codes and rules regulating the construction of grammatical stretches of language and these forms have different meanings.

To shift from one language to another is, by definition, to alter the forms. Further, the contrasting forms convey meanings which cannot but fail to coincide totally; there is no absolute synonymy between words in the same language, so why should anyone be surprised to discover a lack of synonymy between languages?

Something is always 'lost' (or, might one suggest, 'gained'?) in the process and translators can find themselves being accused of reproducing only part of the original and so 'betraying' the author's intentions" [1:6].

Faced by a text — written or spoken — in a language which we know, we are able to work out not only (1) the semantic sense of each word and sentence but also (2) its communicative value, (3) its place in time and space and (4) information about the participants involved in its production and reception.

We might take, as a light-hearted model of the questions we can ask of a text, the first verse of a short poem by R. Kipling:

I keep six honest serving men;
(They taught me all I know);
Their names were What? and Why? and When?
And How? and Where? and Who?

What? is the *message contained in the text*; the content of the signal; the propositional content of the speech acts.

Why? orients us towards the *intention of the sender*: the purpose for which the text was issued, the illocutionary forces of the speech acts which constitute the underlying structure of the text, the discourse. These run the whole gamut from *informing* through *persuading* to *flattering* and it is rare for a text to possess a single function. Multiple functions are the norm rather than the exception...

When? is concerned with the *time of the communication* realized in the text and setting it in its historical context; contemporary or set in the recent or remote past or future.

How? is ambiguous, since it can refer to:

(a) MANNER OF DELIVERY: the tenor of the discourse; serious or flippant or ironic...

(b) MEDIUM OF COMMUNICATION: the mode of the discourse, the channel(s) — verbal/non-verbal; speech/writing — selected to carry the signal. Where? is concerned with the PLACE OF THE COMMUNICATION, the physical location of the speech event realized in the text.

Who? refers to the PARTICIPANT INVOLVED IN THE COMMUNICATION: the sender and receiver(s). Both spoken and written texts will reveal, to a greater or lesser extent, characteristics of the speaker or writer as an individual and also, by inference, the attitude the sender adapts in relation to the receiver(s) and to the message being transmitted" [1: 7–8].

What kind of equivalence should be the translator's aim? A certain balance should be preserved between the overall context-free semantic sense of the text and its context -sensitive communicative value, i.e. between the equivalence of the content of the message and the equivalence of the functional roles of the ST and TT. Other authors speak about translation equivalence at syntactic (formal), semantic and pragmatic levels [Cf. 1: 5; 15: 58; 12: 9–10].

The unit of translation

The idea of translation equivalence is strongly related to that of the unit of translation, i.e. the text length required to obtain a proper equivalent.

One word is hardly a common unit of translation. It is especially true for analytical languages like English in which the words are usually polysemantic and their meaning strongly depends on the environment [15:60].

The notion 'a unit of translation' has been defined in these terms:

"The smallest segment of an SL text which can be translated, as a whole, in isolation from other segments. It normally ranges from the word through the collocation to the clause. It could be described as 'as small as possible and as large as necessary'..." [8:285].

Since a sentence is a basic unit of a thought, presenting an object and what it does, is, or is affected by, so the sentence is, in the first instance, your unit of translation, even though you may later find many SL and TL correspondences within that sentence.

Below the sentence, you go to clauses, both finite and non-finite. Within the clause, you may take next the two obviously cohesive types of collocations, adjective-plus-noun or verb-plus-object, or the various groups that are less context-bound. [8:31–32]. "Traditionally and from practical viewpoint the optimal length of text for translation is a sentence" [15:61].

It is difficult to imagine a better example of an issue which cries out for empirical investigation. If we ask what the unit is that the translator actually processes in the course of translating, we discover that there is good psychological and linguistic evidence to suggest that the unit tends to be the clause. There is also experimental evidence which supports the notion of co-occurrence between cognitive 'chunk' boundaries and syntactic boundaries within the clause; boundaries between major structural units (Subject, Predicator, Complement, etc.) and the forms which realize them (phrases for the most part). For example, the sentence

"The United Nations Secretary General reported substantial progress in the peace negotiations in Geneva today."

would be likely segmented during reading into five or six units:

|*the United Nations Secretary General*|
|*reported*|
|*substantial progress in the peace negotiations*|
|*in Geneva*|
|*today*|

or

|*the United Nations Secretary General*|
|*reported*|
|*substantial progress*|
|*in the peace negotiations* |
|*in Geneva*|
|*today*|

and not

|*the United*|
|*Nations Secretary*|
|*General reported substantial*|
|*progress in the*|
|*peace negotiations in*|
|*Geneva today*|..." [1: 29–31]

It seems appropriate, however, to cite an argument against focusing attention on the sentence: "It is self-evident that language does not exist in isolation from its users nor they do from the society in which they live and it is equally evident that language, whether as knowledge or as communication, does not consist of individual, isolated sentences. We must, of necessity, extend our analysis of the code... and go beyond the formal structure of language as a context-free system of usage to its context-sensitive use in discourse and, as a result, take the analysis of the formal aspects of the code beyond the sentence into the text" [1:161].

Questions

1. Why is the notion of equivalence considered to be the central one in the theory and practice of translation?
2. What is the formal equivalence? What is the functional equivalence? Give your own examples.
3. What point does R. Bell illustrate by quoting R. Kipling's poem? How does it relate to the notion of equivalence in translation?

Practice your translation skills

Will, would

1. Readers of this journal will be familiar with Hyme's book on this subject.
2. The assumptions defining this approach will not be familiar to most researchers, so a brief summary is in order.
3. One approach would be through examining discrepant facts.
4. The data obtained would enable one to confirm or refute with some confidence this hypothesis.
5. I would suggest that it is implausible.
6. For a strong focus on these issues, one would have to consider the important contributions of British science.
7. However, what if the evidence, contrary to what this author would predict, reflected a "general cultural proclivity".
8. I would further suggest that this idea is presumably highly implausible.
9. Hence, they would have to be handled by a different rule.
10. Finally, I would like to disagree mildly with one aspect of the editor's goal.
11. It would be interesting to repeat this experiment in another geographical area.
12. A theoretical reformulation would not undermine the significance of the results in this paper.
13. We would like to think that this is one of the more fruitful potential arenas in which this original concept could be put to work in the future.
14. These structures need to be considered in order to integrate this model with other adequate models.
15. Such a solution would seem simplistic to some of my colleagues.

TRANSLATION EQUIVALENTS

An important branch of the theory of translation is concerned with the study of ST and TT units which can replace each other in the translating process. The creation of equivalent texts results in, and in part is dependent on, the equivalence of correlated language units in the two texts. In any two languages there are pairs of units which are of identical or similar communicative value and can replace each other in translation. The communicative value of a language element depends both on its own semantics and on the way it is used in speech. Therefore, translation equivalence may be established between units occupying dissimilar places in the system of respective languages. Equivalent units cannot be discovered with confidence before a certain amount of TTs have been compared with their STs.

It is obvious that a description of translation equivalents, as opposed to the methods of the general theory of translation, should be bilingual, i.e. it should always relate to a definite pair of languages. Moreover, a bilingual theory of translation should study two separate sets of equivalents, with either language considered, in turn, as SL and the other as TL [12:8–9].

The structural similarity of ST and TT implies that relationships of equivalence are established between correlated units in the two texts. TL units in TT that are used to render the meaning of the respective SL units in ST can be said to substitute for the latter as their functional equivalents (or correspondences) [12:20].

The choice of translation equivalents depends on the context, situation and background information. "...in translation *equivalent* means indirectly equal, that is *equal by the similarity of meanings*..." [15:101]. This simple idea is very important for the understanding of translation: the words, that you find in a dictionary as translations of the given foreign language word, are not the universal substitutes of this word in your language. These translations (equivalents) are worth for specific cases which are yet to be determined by the translator. "*Translation equivalence never means the sameness of the meaning for the signs of different languages*" [15:59].

The semantic analysis of the text must take into account both the immediate surroundings, i.e. the meaning of other words and structures in the same sentence, and the broad context which comprises the contents of the whole original text, whether it is a small extract, an article or a large book. The information that can be gleaned front the original text should be supplemented by the translator's knowledge of the actual facts of life.

Analyzing the contents of the original the translator makes the assessment of the relative communicative value of different meaningful elements. In most cases his professed aim is to achieve the closest approximation to the original, i.e. to reproduce its contents in all the details. As long as the linguistic or pragmatic reasons make it impossible and the translation involves a certain loss of information, the translator has not infrequently to choose between several evils. As often as not, one meaningful element of the original can be retained in translation only at the expense of omitting some other part of the contents. The translator has to decide what bits of information he is ready to sacrifice and what elements of the original meaning are of greater communicative value and should be rendered at any cost.

The choice of the dominant aspect of meaning usually depends on the type of the text and the prevailing pragmatic considerations. While translating, for instance, figurative set expressions the translator may try to preserve their basic metaphorical meaning at the expense of other parts of the contents including the figure of speech that makes up the metaphorical structure of the collocation. In most cases the purport of communication is, first and foremost, to express a certain idea while the figurative way of expressing it is a kind of embellishment, a nice and pleasant luxury which can be dispensed with, if necessary. "When 'a skeleton in the family cupboard' becomes 'a shameful family secret' in translation, there is certainly a loss in expressiveness, but the basic sense is well preserved. The metaphorical meaning will be chosen as the dominant component to be preserved in translation." [12: 61–62].

Questions

1. Why is the idea of translation equivalence strongly related to that of the unit of translation?
2. What do you think about P. Newmark's definition of the unit of translation? What aspects of the issue does R. Bell emphasize?
3. How can language units with different linguistic status in SL and TL become translation equivalents?
4. Do you think it is true that "translation equivalence never means the sameness of the meaning for the signs of different languages"? Why/why not? Give your examples.
5. What are the roles of the context, situation and the translator's background knowledge in translation? Give your examples.
6. What is a "lesser evil" strategy? Why do translators have to use it?
7. What can a technical translator infer from the last paragraph quoted from V. Komissarov's text?

Practice your translation skills

Conjunctions

1. The real issue is whether or not we can raise this question.
2. Perhaps, the most surprising thing about Pankias' article is that it has not been written before.

3. One reason for that is that this characteristic is constant.
4. The reason is that an alternative hypothesis is not available.
5. The important thing to note is that significance of a signal depends on many factors.
6. The question, then, is which of our four analyses is produced by the best theory.
7. At any rate, his main claim is that all these evolutionary accounts are 'explanatory sterile'.
8. As to theory, the main problem with his analysis is what is left unsaid.
9. The only apparent virtue of the ideal model is that it is different from the four studied.
10. One problem, however, is that interesting and important phenomena are occasionally given only brief mention.
11. Riemsdijk's proposal is that what are generally thought of as German adjectives are not really adjectives.
12. A basic question to ask about this book, then, is whether that suggestion holds water.
13. The fundamental tenet of empiricism is that all non-analytic knowledge is derived from experience alone.
14. The importance of this observation was that it led to a number of interesting explanations of seemingly unrelated phenomena.
15. The second claim is that my treatment is the best one, given the devices this theory makes available.
16. Once again, the issue is not whether this is technically feasible, but whether there is any independent motivation for the assumption on which it rests.
17. The crucial question is, therefore, whether we are dealing with a universal and unique process that generates a unique type of pattern.
18. My point is not that Bright's dimensions are wrong, but that we do not know if they are right.
19. One of the basic arguments advanced for the use of the method is that it is the only procedure which assures a definite outcome.
20. One specification for the desired product is that the design be completed in such a way that it will conform to certain government standards.

To be to

1. The latter approach is therefore to be preferred.
2. However, the increased complexity of the theory is to be desired.
3. The same idea is to be found in Anderson 1994.
4. We will show that much is to be learned by overcoming this neglect.
5. Footnotes are to be used only for substantive observations.
6. Some explanation is surely to be found for this not uncommon situation.
7. In fact, as this collection of articles makes clear, such a claim is not to be made.
8. It is to be hoped that the current interest of scholars in his work will be stimulated.
9. The value of his research is certainly not to be underestimated.
10. It is hard to see how we are to be convinced of the nature of this principle.

11. However, it is difficult to tell why his theory is to be preferred over possible alternative formulations.
12. Despite these flaws, the paper is to be recommended, even for readers not particularly interested in the theory per se.
13. Analogous remarks are to be made about similar arguments.
14. This involves showing that the fact in question was necessary and inevitable — that it was to be expected.
15. The variety of empirical methodologies which Gerhardt brings to bear is certainly to be commended.
16. Nevertheless, the editors are to be credited for putting together studies which represent the diversity of current research.
17. Carrington is to be commended for his persistence, and to be congratulated on the technically polished form of the final book.
18. I am indebted to Alan Prina for the observation that if this convention is to be maintained universally, then the analysis above must be modified.
19. This program was to furnish validation data for theoretical models.
20. Such a view is to be found, for example, in such influential writings as Davidson's and Dummet's.

TRANSLATION VARIETIES

As among the functions of language the three main ones are the *expressive*, the *informative* and the *vocative* functions because these are the main purposes of using a language, we will now consider their implications for translators.

Language functions, text-categories and text-types

Function	Expressive	Informative		Vocative
Core	*Writer*	*'Truth'*		*Readership*
Author's status	'Sacred'	'Anonymous'		'Anonymous'
Type		Topic	Format	
	Serious imaginative	Scientific	Textbook	Notices
	Authoritative statement	Commercial	Paper	Propaganda
	Autobiography	Industrial	Article	Publicity
	Personal correspondence	Economic	Memorandum	Popular fiction
		Other areas of knowledge or events		[8:40]

The core of the *expressive* function is the mind of the speaker, the writer, the originator of the utterance. Fie uses the utterance to express his feelings irrespective of any response. It is essential that you, as translator, should be able to distinguish the personal components of these texts: i.e. unusual ('infrequent') collocations; original metaphors; 'untranslatable' words, particularly adjectives of 'quality' that have to be translated one-to-two or -three; unconventional syntax; neologisms: strange words (archaisms, dialect, odd technical terms) — all that is often characterized as '*idiolect*' or 'personal dialect' as opposed to '*ordinary language*', i.e. stock idioms and metaphors, common collocations, normal syntax, colloquial expressions and 'phaticisms' - the usual tramlines of language. The personal components constitute the "expressive" element (they are only a part) of an expressive text, and you should not normalise them in a translation.

The core of the *informative* function of a language is the external situation, the facts of a topic, the reality outside a language, including reported ideas and theories. For the purposes of translation, typical 'informative' texts are concerned with any topic of knowledge, but texts about literary subjects, as they often express value-judgments, are apt to lean towards 'expressiveness'. The format of an informative text is often standard: a textbook, a technical report, an article in a newspaper or periodical, a scientific paper, a thesis, minutes or agenda of a meeting.

One normally assumes a modem, non-regional, non-class, non-idiolectal style, with perhaps four points on a scale of language varieties: (1) a formal, non-emotive, technical style for academic papers, characterized in English by passives, present and perfect tenses, literal language. Latinized vocabulary, jargon, multi-noun compounds with 'empty' verbs, no metaphors; (2) a neutral or informal style with defined technical terms for textbooks characterized by first person plurals, present tenses, dynamic active verbs, and basic conceptual metaphors; (3) an informal, warm style for popular science or art books (e.g., coffee-table books), characterized by simple grammatical structures, a wide range of vocabulary' to accommodate definitions and numerous illustrations, and stock metaphors and a simple vocabulary; (4) a familiar, racy, non-technical style for popular journalism, characterized by surprising metaphors, short sentences, Americanise, unconventional punctuation, adjectives before proper names and colloquialisms.

The core of the *vocative* function of a language is the readership, the addressee. We use the term 'vocative' in the sense of "calling upon" the readership to act, think or feel, in fact to 'react' in the way intended by the text. This function of a language has been given a number of other names, including "conative" (denoting effort), "instrumental", "operative" and "pragmatic" (in the sense of used to produce a certain effect on the readership). Note that nowadays vocative texts are more often addressed to a readership than a reader. For the purposes of translation, we take notices, instructions, publicity, propaganda, persuasive writing (requests, cases, theses) and possibly popular fiction, whose purpose is to sell the book/entertain the reader, as the typical 'vocative' text.

The first factor in all vocative texts is the relationship between the writer and the readership, which is realized in various types of socially or personally determined grammatical relations or forms of address: T (tu, du) and V (vous, Sie, usted) and other variant forms; infinitives, imperatives, subjunctives, indicatives, impersonal, passives; first and/or family names, titles, hypocoristic names; tags, such as 'please', all play their part in determining asymmetrical or symmetrical relationships, relationships of power or equality, command, request or persuasion.

The second factor is that these texts must be written in a language that is immediately comprehensible to the readership. Thus for translation, the linguistic and cultural level of the SL text has to be reviewed before it is given a pragmatic impact...

Few texts are purely expressive, informative or vocative: most include all three functions with an emphasis on one of the three. However, strictly, the expressive function has no place in a vocative or informative text — it is there only unconsciously, as 'underlife' |8:39–42|.

Literary translation is an artistic creation and to be successful it must be accepted by the language speakers' community of the target language as a piece of literary prose in their native language, unlike other translation varieties which may be tolerated by the users even in poor quality (factual information sometimes is more important for the users than grammatical and stylistic correctness).

Besides, there is another factor that makes literary texts so difficult for translators — it is so called *hypertext.* Hypertext is the collective meaning of a literary text comprising all associations and allusions acquired by the words and word combinations of this text in their previous usage" [15:124].

Physical parameters of translation process

Though the basic characteristics of translation can be observed in all translation events, different types of translation can be singled out depending on the predominant communicative function of the source text or the form of speech involved in the translation process. Thus, we can distinguish between literary and informative translation, on the one hand, and between written and oral translation (or interpretation), on the other hand [12:51].

As the names suggest, in written translation the source text is in written form, as is the target text. In oral translation or interpretation the interpreter listens to the oral presentation of the original and translates it as an oral message in TL. As a result, in the first case the Receptor of the translation can read it while in the second case he hears it.

There are also some intermediate types. The interpreter rendering his translation by word of mouth may have the text of the original in front of him and translate "at sight". A written translation can be made of the original recorded on the magnetic tape that can be replayed as many times as is necessary for the translator to grasp the original meaning [12:54].

The following kinds or types of translating/interpreting are to be distinguished:

1. **The written from a written matter translating...** The matter under translation may be a belles-lettres passage (prose or poetry work), a scientific or technical 'newspaper passage/' article, etc.

2. **The oral from an oral matter interpreting,** which is a regular oral sense-to-sense rendering of a speech/radio or TV interview, or recording which can proceed either in succession (after the whole matter or part of it is heard) or simultaneously with its sounding.

3. **The oral from a written matter interpreting** is nothing else than interpreting at sight. It can also proceed either simultaneously with the process of getting acquainted with the content of the written matter, or in succession (after each part of it is first read through and comprehended.

4. **The written translating from an orally presented matter** is a rare occurrence. This is because a natural speech flow is too fast for putting it down in the target language (except for a shorthand presentation, which would be then a regular translation, i.e. interpretation from a written matter [13:28–29].

Interpretation, in its turn, is traditionally divided into *consecutive interpretation* and *simultaneous interpretation. Chuchotage* and *at-sight interpretation* are commonly regarded as alternatives of consecutive interpretation despite minor differences in physical procedures.

In consecutive interpretation the interpretation follows the source utterance, whereas simultaneous interpretation is performed simultaneously with the original speech. This time lag of the interpreter relative to the speaker is the main distinction of consecutive interpretation, which determines the peculiarities of the approach and translation devices used by the interpreter.

The consecutive interpreter adheres to predominantly denotative approach in interpretation whereas the basic approach of simultaneous interpretation is transformational. Without special equipment simultaneous interpretation is impossible [15:111–112].

However, both during consecutive and simultaneous interpretation interpreters use *text compression* and *text development* as basic translation devices.

Text compression aimed at saving interpretation time and removing source text redundancy is one of the main instruments of simultaneous interpretation which allows the interpreter to keep in pace with the source text not sacrificing the content.

In consecutive interpretation text compression is used as well — it allows to get rid of the source text redundancy, but the main instrument of consecutive interpretation is text development. Ability to compress the source text and develop the target one from the core structure are the basic skills of an interpreter.

Text development in the course of interpretation is the restoration of the full composition of a source sentence starting from its syntactic and semantic core accompanied by restructuring of the source sentence in compliance with syntactic and semantic standards of the target language. Test development is performed either with note-taking or without it. It usually starts from the Subject-Predicate pair and then other sentence elements are organized around this core. *"Text development is the optimal method of interpretation because it allows organizing the translation in accordance with the target language style and grammar standards rather than copy the source sentence structure"* [15: 138–140].

Questions

1. How do the three main functions of language interrelate with text- types?
2. Why should a translator be aware of the characteristic 'expressive', 'informative' and 'vocative' text-types?
3. What are the characteristics of an informative text? What are the stylistic differences of informative text formats?
4. Which vocative text-types do you think a modern technical translator has to deal with most of all?
5. What makes literary translation a specific variety? What qualities and skills are expected of a 'literary' translator? Give examples of hypertext allusions and associations.
6. What are the two principles of translation classification, according to V. Komissarov?
7. What forms the basis of I. Korunets' classification?
8. Why is interpretation usually made at a lower level of accuracy?
9. How can interpretation be classified?
10. What are some of the interpreter's translation devices?

Practice your translation skills

To be to

1. Some explanation is surely to be found for this not uncommon situation.
2. In fact, as this collection of articles makes clear, such a claim is not to be made.
3. It is to be hoped that the current interest of scholars in his work will be stimulated.
4. The value of his research is certainly not to be underestimated.
5. It is hard to see how we are to be convinced of the nature of this principle.
6. However, it is difficult to tell why his theory is to be preferred over possible alternative formulations.
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11. Nevertheless, the editors are to be credited for putting together studies which represent the diversity of current research.
12. Carrington is to be commended for his persistence, and to be congratulated on the technically polished form of the final book.
13. I am indebted to Alan Prina for the observation that if this convention is to be maintained universally, then the analysis above must be modified.
14. This program was to furnish validation data for theoretical models.
15. Such a view is to be found, for example, in such influential writings as Davidson's and Dummet's.
16. However, the differences between these approaches are to be resolved.
17. Randomness is not to be positively defined, but is a theoretical tool that one poses and adopts in so far as its use helps to understand scientific facts.
18. This is not to say that such facts cannot be described by a simple procedure.
19. This is not to say that no agreement as to the details of the process has been reached.
20. This is not to say that the paper does not contain interesting comments and insights, but it promises more than it delivers.

Predicates

1. Most conclusive were the results of the training phase.
2. Underlying this study are the following assumptions.
3. Too restrictive are definitions of many of the notions.
4. Probably the most interesting is the monograph's introduction.
5. Missing, unfortunately, is a list of the journals cited in the bibliography.

6. So powerful were his arguments that no scientist has ever attempted to answer them.
7. Also interesting is the consideration of methodological issues.
8. Also curiously missing is much discussion of the educational implication of the study.
9. Worth noting is the fact that such an adaptation pattern was also observed in other cases.
10. Noteworthy among these are the discussions of major differences in the theories.
11. But even more important is that it is often difficult to figure out what domains are relevant.
12. Better, though still flawed, is a definition of the major concept of the study.
13. Equally important, Luce suggests, are a number of other considerations.
14. More puzzling is his approval of this attack on scientists whom he, at least, views as wittgensteinians.
15. Implicit in this statement of Seal's position is the distinction between the two kinds of facts.
16. Following the appendix is a bibliography, extensive, though not annotated.
17. More curious than the presumed theoretical innocence of this analysis is the nature of the explanations it produces.
18. Symptomatic of this fact is the recent conference in Glasgow.
19. Of more immediate relevance to our work are recent studies of Lark (1991, 1992).
20. Still to be worked out was the question of exactly how and where this proposal could fit in the hypothesis.
21. Unfortunately, the solution, attractive as it looks, suffers from several shortcomings.
22. But in no way does it approach the book under review in depth, scope, or insight of coverage.
23. Working under hard conditions were all the early students of this new field.
24. Self-evident as this may be, the idea may unfortunately be too subversive to gain acceptance.

TRANSLATION METHODS & PRAGMATICS

Translation methods in the form of a flattened V diagram

SL emphasis	TL emphasis
Word-for-word translation	Adaption
Literal translation	Free translation
Faithful translation	Idiomatic translation
Semantic translation	Communicative translation

Word-for-word translation

This is often demonstrated as interlinear translation, with the TL immediately below the SL words. The SL word-order is preserved and the words translated singly by their common meanings, out of context. The main use of word-for-word translation is either to understand the mechanics of the source language or to construe a difficult text as a pre-translation process.

Literal translation

The SL grammatical constructions are converted to their nearest TL equivalents but the lexical words are again translated singly, out of context. As a pre-translation process, this indicates the problems to be solved.

Faithful translation

A faithful translation attempts to reproduce the precise contextual meaning of the original within the constraints of the TL grammatical structures. It 'transfers' cultural words and preserves the degree of grammatical and lexical 'abnormality' (deviation from SL norms) in the translation. It attempts to be completely faithful to the intentions and the text-realisation of the SL writer.

Semantic translation

Semantic translation differs from 'faithful translation' only in as far as it must take more account of the aesthetic value (that is, the beautiful and natural sound) of the SL text, compromising on 'meaning' where appropriate so that no assonance, word-play or repetition jars in the finished version. The distinction between 'faithful' and 'semantic' translation is that the first is uncompromising and dogmatic, while the second is more flexible, admits the creative exception to 100% fidelity and allows for the translator's intuitive empathy with the original.

Adaptation

This is the 'freest' form of translation. It is used mainly for plays (comedies) and poetry; the themes, characters, plot are usually preserved, the SL culture converted to the TL culture and the text rewritten...

Free translation

Free translation reproduces the matter without the manner, or the content without the form of the original. Usually it is a paraphrase much longer than the original, a so-called 'intralingual translation', often prolix and pretentious, and not translation at all.

Idiomatic translation

Idiomatic translation reproduces the 'message' of the original but tends to distort nuances of meaning by preferring colloquialisms and idioms where they do not exist in the original.

Communicative translation

Communicative translation attempts to render the exact contextual meaning of the original in such a way that both content and language are readily acceptable and comprehensible to the readership.

Only semantic and communicative translations fulfil the two main aims of translation, which are first, accuracy, and second, economy. In general, semantic translation is written at the author's linguistic level, and communicative at the readerships. Semantic translation is used for 'expressive' texts, communicative for 'informative' and 'vocative' texts [8:45–47].

Literal translation ranges from one word to one word ('hall', *Saul, sale, sala, zal*) through group to group ('a beautiful garden', *un beau jardin, ein schouer Garten*), collocation to collocation ('make a speech', *faire un discourse*), a clause to a clause, a sentence to a sentence.

Literal translation is to be the basic translation procedure, both in communicative and semantic translation, in that translation starts from there. Literal translation above the word level is the only correct procedure if the SL and TL meanings correspond, — or correspond more closely than any alternative; that means that the referent and the pragmatic effect are equivalent, i.e. that the words not only refer to the same "thing" but have similar associations (*Mama*, 'mum'...) and appear to be equally frequent in this type of the text; further , that the meaning of the SL unit is not affected by its context in such way that the meaning of the TL unit does not correspond to it [8:69–70].

"Pragmatic: affecting the readership; the communicative, emotive element in language, as opposed to the referential, informative element (e.g. the contrast between 'mind' and 'reality'). The two elements are always present in language, but in varying degree" [8:284]. Pragmatics is the study of contextual meaning. It shows how much more gets communicated than is actually said [14:24–25].

Every act of speech communication is meant for a certain Receptor, it is aimed at producing a certain effect upon him. In this respect any communication is an exercise in pragmatics. To begin with, the pragmatics of the original text cannot be as a rule directly reproduced in translation but often require important changes in the transmitted message. Correlated words in different languages may produce dissimilar effect upon the users [12:43].

The communicative effect of a speech unit does not depend on the meaning of its components alone, but involves considerations of the situational context and the previous experience. Here again, a great role is played by differences in the historical and cultural backgrounds of different language communities, in their customs and living conditions. It seems imperative, therefore, that translation should involve a kind of pragmatic adaptation to provide for the preservation of the original communicative effect.

The pragmatic adaptation of the translation must also see to it that TR understands the implications of the message and is aware of its figurative or situational meaning. It is obvious that there can be no equivalence if the original text is clear and unequivocal while its translation is obscure and hard to understand...

The pragmatics of the text, which is linguistically relevant and depends on the relationships between the linguistic signs and language users, is a part of the contents of the text. It is a meaningful element which preservation in translation is desirable at any level of equivalence. It is reproduced in translation if TR gets the whole information about the pragmatic aspects of the original text and the pragmatics of the original text is just as accessible and understandable to a translator as to SR. This does not imply that a translator will be actually influenced by this information or react to it in the same way.

A translation event is pragmatically oriented in two directions. On the one hand, it is translation, which means that its primary purpose is to give the closest possible approximation to the original text. This orientation towards a foreign text is one aspect of its pragmatics. But on the other hand, a translation event is a concrete speech act in the target language. This involves two important implications. First, a translation event may be pragmatically oriented toward a concrete TR. and, second, it is the result of the activities of a concrete translator who may have some additional pragmatic motivation, may pursue some aims beside and beyond the true reproduction of the original text [12:44–45].

E. Nida reformulated the problem of equivalence by distinguishing **formal equivalence** (closest possible match of form and content between ST and TT) and **dynamic equivalence** (principle of equivalence of effect on reader of TT) "which should be judged not against the original but against the Receptor's reactions... So, translation of the maintenance instructions is considered good if, after reading it, a technician will be able to operate the appropriate piece of machinery correctly" [12:46].

Formal equivalence is, of course, appropriate in certain circumstances. At crucial points in diplomatic negotiations, interpreters may need to translate exactly what is said rather than assume responsibility for reinterpreting the sense and formulating it in such a way as to achieve what they judge to be equivalence of effect [3:7].

A translator is assigned to his task and paid for it by people for whom his work is not the end of job but an instrument for achieving some other ends. Therefore, the translator tries to meet these "extra-translational" requirements, introducing appropriate changes in the text of translation. The specific goal, which makes the translator modify the resulting text, often means that, for all practical purposes, he assumes an additional role and is no longer just a translator. He may set himself some propaganda or educational task, he may be particularly interested in some part of the original and wants to make a special emphasis on it, he may try to impart to the Receptor his own feelings about the Source or the event described in the original. In pursuance of his plans the translator may try to simplify, abridge or modify the original message, deliberately reducing the degree of equivalence in his translation. It is clear that such cases go far beyond the inherent aspects of translation and it is not the task of translation theory to analyse or pass judgement on them.

In many types of translation any attempt by a translator to modify his text for some extra-translational purpose will be considered unprofessional conduct and severely condemned. But there are also some other types of translation where particular aspects of equivalence are of little interest and often disregarded.

When a book is translated with a view to subsequent publication in another country, it may be adapted or abridged to meet the country's standards for printed matter. In technical or other informative translations a translator or his employers may be interested in getting the gist of the contents or the most important or novel part of it, which may involve leaving out certain details or a combination of translation with brief accounts of less important parts of the original.

A specific instance is consecutive interpretation where an interpreter is often set a time limit within which he is expected to report his translation no matter how long the original speech may have been. This implies selection, generalizations, and cutting through repetitions, incidental digressions, occasional slips or excessive embellishments. It is obvious that in all similar cases the differences which can be revealed between the original text and its translation should not be ascribed to the translator's inefficiency or detract from the quality of his work. The pragmatic value of such translations clearly compensates for their lack of equivalence [12:46–47]. The status of the source text as a social product, its intended readership, and the socio-economic circumstances of its production, translation and reception by TL readers are all relevant factors in the study of the translation process [3:13].

Questions

1. How does the V diagram specify the translation methods?
2. Where is word-for-word and literal translation mainly used?
3. Which method do you think will a professional consecutive interpreter prefer? Why?
4. Why is semantic translation used for 'expressive' texts and communicative for 'informative' and 'vocative' texts?
5. Why should the pragmatic effect be among the primary concerns of atranslator?
6. What does the communicative effect of a speech unit depend on?
7. What is 'formal' and 'dynamic' equivalence according to E. Nida? What terms do you think they correspond to in P. Newmark's classification?
8. What is a pragmatic value of translation?
9. What factors may necessitate the pragmatic adaptation of TT?
10. How is sociolinguistics related to the theory of translation?

Practice your translation skills

There – subject

1. There are a number of reasons to rule out this possibility.
2. There are several problems with this objection.
3. There are two problematic issues here.
4. But there is an error in this section, caused in part by the approach.
5. There is a third, somewhat less salient argument against this analysis.
6. There are two serious problems with this proposal.
7. Finally, there are methodological issues to address.
8. There is also the vexing problem of circularity: how do we know what is relevant?
9. These papers show that currently there are more issues than answers.
10. There has been a revolution in the technology of observation in the last couple of decades.
11. There may be compelling reasons for rejecting such an interpretation, but none is mentioned in the paper.
12. There are a number of problems with this idea, independent of its peculiar implementation.
13. Moreover, there seems to be a problem in the use of this term itself.

14. There exists an obvious alternative analysis of these examples.
15. But there would have to be some other mechanism for dealing with the optional positions.
16. But how adequate is this assessment ? There seem to be two points regarding this position that are worth questioning. 24. There remain to be noticed two or three other points.
17. So far as I know, there is absolutely no disagreement over these judgments.
18. There appears to be a need for more investment of resources into developing more effective research techniques.
19. There follow a relatively brief conclusion, two copious bibliographies, plus a two-column index. 28. However, there exists an alternative analysis (Paul Crank, class lectures, spring 1994).
20. There is no such method and there is not likely to be any (at least in our lifetime).

Phrasal subjects

1. A brief discussion of some examples taken from Table VII follows.
2. The sensitivity of these results to the methods of analysis was explored in several ways.
3. In the sections that follow their conclusions and the results of several other investigators are reviewed.
4. Like the empirical tests, several completely different approaches to the problem seem to be evolving.
5. Current opinion on the way scientific theories are constructed is by no means unanimous.
6. Much more stringent constraints than the requirement of formal consistency associated with formalist philosophies are posed here.
7. The considerations involved in designing these steels, their limitations, and some of the steps that have been taken to overcome these limitations, are reviewed.
8. Various formalizations of the vicious circle principle as well as the point at which the continuum is impredictive are discussed.
9. Various open problems, especially whether a natural condition may be added so as to eliminate the anomaly, yet preserve everything else, are tackled here.
10. On the other hand, looking from the point of view of extra-logical knowledge representation, the clear distinction between assumptions and extra-logical axioms seems very natural.
11. The results of a program extending over the last four and one-half years to investigate the nature and characteristics of high-loss regular VHF propagation by means of the lower ionosphere are proposed.
12. The merely approximate agreement between the observed astronomical facts and the scheme laid out in the "Mysterium Cosmographicum" is no longer satisfying.

13. The role of non-classical logics in recent attempts to reformulate scientific and commonsense theories in such a way as to avoid even the appearance of the assumption of the existence of abstract entities will be surveyed.
14. The existence, nay, the necessity, at certain stages, of entertaining such unverifiable and unfalsifiable, and yet not quite arbitrary, hypothesis is an embarrassing conception which did not and does not fit into a purely positivistically oriented philosophy of science.
15. I want to stress that the development of such additional programs is by no means unwanted.
16. Some of the problems encountered in the application are described, and a method of optimizing the parameters of specific materials is discussed. No detailed technical discussion is presented. The application of these capacitors to various types of circuitry is briefly indicated.
17. Two types of output structures have been used.
18. Additional facilities for performing certain arithmetic operations are provided.
19. Attempts to compare the observations with various existing theories designed to account for the propagation as a scattering process have been made
20. Reliability of performance of typical systems is estimated.

TRANSLATION APPROACHES

It is a great challenge to the translation theory to discover how a translator does the trick, what are his mental processes which ensure production in TL of a text of identical communicative value with the given ST. True, these processes are not directly observable but they can be studied, even though with a certain degree of approximation, in various indirect ways. This direction of the translation theory is of considerable practical value for it makes possible the description of particular methods of translation that can be used by the translator to ensure the equivalence between ST and TT. The study of the translating process reveals both the translator's general strategy and specific techniques used to solve typical translation problems [12:9].

Roughly, the translation theories may be divided into three main groups which quite conventionally may be called *transformational approach, denotative approach,* and *communicational approach* [15:40].

Transformational approach

The transformational theories consist of many varieties which may have different names but they all have one common feature: the process of translation is regarded as **transformation** [15: 40].

According to G. Mirant [16: 43], translation is the transformation of objects and structures of SL into those of TL. In order to translate we perform a set of multi-level transformations of SL text into TL text using specific transformation rules.

The approach is based on the ideas of transformational grammar as formulated by R. Jakobson [4]. Transformational grammar studies rules for generating different syntactic structures with invariant lexical entities and logical and syntactic relations, e. g. "*Columbus discovered America*", "*America was discovered by Columbus*", "*America (which was) discovered by Columbus*" "*The discovery of America by Columbus*". Transformational grammar singles out certain structures as nuclear ones front which other structures (transforms) may be obtained, e.g. {actor — material process + goal}: "*I am looking for my book*".

(1) **One variety of the transformational approach** assumes that transformations within the language and translation from SL into TL follow the same rules. Each SL entity has a corresponding translation equivalent in the form of a TL entity. The process of translation is viewed as a search for these equivalent entities, which places an emphasis on the form rather than the meaning.

In the transformational approach we shall distinguish three levels of substitutions: morphological equivalencies, lexical equivalencies, and syntactic equivalencies and/or transformations.

In the process of translation:

– at the morphological level morphemes (both word-building and word-changing) of the target language arc substituted for those of the source;

– at the lexical level words and word-combinations of TL are substituted for those of SL;

– at the syntactic level syntactic structures of TL are substituted for those of SL" |15:41|.

G. Mirant gives the following example of translation by transformation: "The source sentence is: "The meaning of any sign is determined by the context" and its syntactic structure has the form:

Art., N1. Prep., A. N2, V (Passive Voice), Prep., Art., S3.

To obtain the target (Russian) text by transformation one has to perform the following transformations:

– at the lexical level:

the – 0 equivalent, meaning – значение, of – 0 equivalent, any – любой, *sign – знак, is – 0 equivalent, determined – определять, by – 0 equivalent, the –* 0 *equivalent, context – контекст;*

– at the syntactic level:

Art., N1, Prep., A, N2, V (Passive Voice), Prep., Art., N3—> N3, V (Active Voice), (Accusative) N1, (Genitive) N2;

– at the morphological level:

of – люб-ого знак-а; is determined – определя-ет.

Then the target text will be:

"*Контекст определяет значение любого знака*" |16:43|.

(2) **In another approach** transformational grammar is adapted by proposing several model kernel sentences as transitional stages between source and target language structures |17:7–8|. The basic assumption is that there is full equivalence between these kernel structures in SL and TL.

The transformational model postulates that in any two languages there is a number of nuclear structures which are fully equivalent to each other. Each language has an area of equivalence in respect to the other language. It is presumed that the translator does the translating in three transformational strokes. First — the stage of analysis — he transforms the original structures into the nuclear structures, i.e. he performs transformation within SL. Second — the stage of translation proper — he replaces the SL nuclear structures with the equivalent nuclear structures in TL. And third — the stage of synthesis — he develops the latter into the terminal structures in the text of translation.

Thus, if the English sentence "***It is very strange this domination of our intellect by our digestive organs***" (J.K. Jerome) is translated into Russian as «Странно, до какой степени пищеварительные органы властвуют над нашим рассудком» we presume that the structures "*domination of our intellect*" and "*domination by our digestive organs*" were first reduced to the nuclear structures "*organs dominate*" and "*they dominate intellect*", respectively. Then they were replaced by the equivalent Russian structures *«органы властвуют»* and *«они властвуют»*, after which the nuclear structures were transformed into the final Russian variant [12:31].

Therefore, the process of translation is divided into three stages:

– analysis: ST structures are transformed into SL model kernel structures;

– interlanguage transformation (universal semantic representation): SL kernel structures are substituted with the equivalent TL kernel structures;

– synthesis: TL kernel structures are transformed into the TL terminal structures (TL text).

The transformational approach quite convincingly suggests that in any language there are certain regular syntactic, morphological, and word building structures which may be successfully matched with their analogies in another language during translation. [15:50]

Transformational theory, however, fails to explain cases of situational equivalence:

"Fragile" → "Осторожно стекло".

However, as V. Komissarov rightly points out, it does not work in a number of cases where equivalence is established between seemingly inequivalent kernel structures:

"The split in the Democratic Party elected Lincoln." —

«В результате раскола в демократической партии к власти пришел Линкольн».

Denotative approach

A denotatum is an object. In F.de Saussure's model of the relationship between the linguistic sign and the denotatum it stands on the right:

$$\text{SIGN} = \frac{\text{CONCEPT}}{\text{ACOUSTIC IMAGE}}\ \text{OBJECT (denotatum)}$$

An example of this, for English, might be the relationship between the word 'tree' and the actual tree perceived by the senses which is referred to by using the word [1:85]:

$$\text{'tree'} = \frac{\text{TREE (concept)}}{\text{(word)} \qquad \text{TRI:/ (phonemic transcription)}}$$

The assumption is that the main content of communication, bilingual including, lies outside the boundaries of language. Therefore, translation is the description, by means of TL, of the objects described in SL. A crude model of translation may look as follows:

(1) translator receives signal 1 containing message,
(2) recognizes code 1,
(3) decodes message by identifying denotatum and concept and comprehending real-life situation behind message,
(4) selects code 2,
(5) encodes message by means of code 2,
(6) selects channel,
(7) transmits signal 2 containing message (Cf. 1:19).

Diagrammatically, the process of translation can be viewed as shown below:

source text → source concept → target concept → target text
(denotatum) (denotatum)

"As opposed to the transformational approach, the relationship between the source and target word forms is occasional rather than regular" [15:42].

Denotative theory works very well in a number of translation situations.

(1) When TL does not possess a linguistic sign corresponding to the SL item: *Jacksonphobia. America-firster.* In this case the translator either creates a new TL sign (*джексонфобия*) or chooses a sign which has a similar denotatum (*ура-патриот)* or just describes the denotatum.

(2) Another example is related to different ways of presenting a situation in SL and TL: *to sit up kite – поздно ложиться спать; instant coffee – растворимый кофе.*

There exist numerous cases when the translator needs to check the real life situation in order to select the right TL word. For example, the SL sentence is "*X was baited by the right*". The usual equivalent for 'to bait' is 'травить, преследовать', so we may expect something like:

'*Правые травили X*'. '*X подвергся преследованию правых*'.

In fact, however, X in this sentence refers to President F.D. Roosevelt, an outstanding, very popular and powerful public figure. In reference to him, we might prefer a 'softer' version: "*подвергся резким нападкам правых*" [Examples taken from V. Komissarov's published works].

The denotative approach treats different languages as closed systems with specific relationships between formal and conceptual aspects, hence in the process of translation links between the forms of different languages are established via conceptual equivalence [15:51].

In spite of its obvious strong points, the denotative theory has it weaknesses. For example it does not distinguish among various degrees of formality:

Officialese:	'The consumption of any nutriments whatsoever is categorically prohibited in this establishment.'
Official:	'The consumption of nutriments is prohibited.'
Formal:	'You are requested not to consume food in this establishment.'
Neutral:	'Eating is not allowed here.'
Informal:	'Please, don't eat here.'
Colloquial:	'You can't feed your face here.'
Slang:	'Lay off the nosh.'
Taboo:	'Lay off the f***ing nosh' [8:14].

Reference to the denotatum is not sufficient because we also need to establish and describe the relationship between the linguistic signs of SL and TL. Denotative theory is not strong enough to model the process of translation.

Questions

1. What are permanent equivalents? How are permanent equivalents related to the notion of context-free words? Give examples.
2. What is the relationship between permanent, variable, regular and occasional equivalents? Can you show it diagrammatically?
3. The scholars cited in lectures and use the terms 'theory', 'approach' and 'model' interchangeably. In what meaning?
4. What is the practical aspect of studying the translating process?
5. What underpins the transformational approach to translation?
6. What are the basic steps in translation according to the first variety of the transformational approach?
7. What is the role of kernel (=nuclear) structures in the second variety of the transformational approach?
8. G. Miram writes that the transformational approach fails to explain the cases where "the original text corresponds to one indivisible concept which is rendered by the translator as a text in another language also corresponding to the relevant indivisible concept" [16:46]. Can you give an example to illustrate this point?
9. What are the basic assumptions of the denotative approach to translation?
10. What is the main difference between transformational equivalence and denotative equivalence?
11. Which of the two models is based on the identity of the situations described in ST and TT?
12. Which of the two models is predominantly used (a) by simultaneous interpreters? (b) by consecutive interpreters?

Practice your translation skills

It — subjects

1. It follows that the properties of the existential closure relationship govern the fruitfulness of the method.
2. It is this step which essentially determines the form of the system and the magnitude of the derived units.
3. It is next to impossible to convey here even an approximate impression of the essence and range of this brilliant, content-packed volume.
4. It is in these terms that choice is built into the argument: choice exists in a range of alternatives in any interaction.
5. It follows from these considerations that nothing remains of Seliger's redundancy reduction principle: it turns out to be a pseudo-principle.
6. It is difficult to evaluate the hypothesis, because the exact goal of analysis is never made fully explicit.
7. It is unlikely that those reviewers who found aspects of that work objectionable for a variety of reasons will encounter anything here to make them happier.
8. The theory challenges the foundational principles of the discipline — it shifts attention to minor social processes.
9. But it would be fallacious to pretend that providing a description would be enough.
10. It remains the data rather than the hypothesis that counts.
11. It can thus be seen that the expressions are not equivalent.
12. It would be hard to exaggerate the importance of the scholarly tradition represented by Kant.
13. Again it is easy to see here a foreshadowing of current debates on the structure of the Universe.
14. I think the answer is that the principles have such broad applicability that it can be scary to experience their explanatory power.
15. This is a paradoxical technology because, although it functions electronically, its mode of data processing is sequential and analytical.
16. It can be argued that the development of the mathematical tools made manifest the separation of the senses in science.
17. Computer time is the most abstract notion of time ever incorporated into a machine–it represents the final triumph of the Western European view, in which time itself becomes a commodity, a resource to be worked.
18. Rationality cannot be equated to logicality; it cannot be separated from feeling and intuition.
19. It is a privilege, actually, to be asked to even attend this conference.
20. It is truly amazing how much privacy you can get for yourself if you spend all you time with computers.

Split subjects

1. However, no indication is given of the optimum mode.
2. Since Lange presented his hypothesis, many studies have been carried out on this issue.
3. Numerous articles have appeared dealing with this intricate problem.
4. An example is given below of an algorithm that was developed to acquire necessary data.
5. A very powerful computer can be constructed which can solve intrinsic mathematical problems.
6. More specifically, a rapid procedure is required which can be used to assess formability requirements.
7. Finally, a workability concept will be demonstrated that combines forming limits with the analysis.
8. A discussion is given of the possibilities for application of this type of propagation to communication systems.
9. An expression can be obtained which approximates these characteristics over the operating range of interest.
10. Simple formulae were derived that allow high-accuracy internal calibration.
11. Data are given on gamma and illumination considerations.
12. Conclusions are drawn for the study of the role of explanation in science.
13. A simple construction is described which can be used to predict the onset and termination of the instability.
14. Doubt has been expressed regarding the reliability of the data.
15. Detailed studies have been performed by Peters and Ritchie I1993 on the definition of formal constraints on the process.
16. It is worth mentioning that a whole domain of the field exists which adheres to the standard procedures of empirical science.
17. The account I have offered of this phenomenon is in some ways rather remote from traditional discussions.
18. A new approach is needed combining much broader perspective with a detailed empirical analysis.
19. A similar line may be traced that relates the trajectory of the time to the trajectories of S1 and S2.
20. In recent books and papers the question has been again and again raised whether this approach can contribute to the general theory.
21. The nine stimuli were recorded such that preceding each was the original segment that served as the standard with which each of the nine stimuli was to be compared.

SEMANTIC APPROACH

Since translation theory is to disclose the essence of equivalence between the meaning of ST and TT. It seems natural to assume that the model of translation process should be based on the analysis of the meaning of these texts. Theoretically, the semantic equivalence of ST and TT presupposes the identity or at least close similarity between all or some of the elements of the textual meanings. Then the translating process will be aimed at distinguishing these elements in ST and finding the TL units that carry the same information.

Meaning is "the kingpin of translation studies". Without understanding what the text to be translated means for the L2 users the translator would be hopelessly lost. This is why the translation scholar has to be a semanticist over and above everything else. But by semanticist we mean a semanticist of the text, not just of words, structures and sentences. The key concept for the semantics of translation is ***textual meaning***. [1:79]

An important part of the general theory of translation is the theory of equivalence aimed at studying semantic relationships between ST and TT. It has been noted that there is a presumption of semantic identity between the translation and its source text. At the same time it is easily demonstrable that there is, in fact, no such identity, for even a cursory examination of any translation reveals inevitable losses, increments or changes of the information transmitted. Part of this information, lost or added in the translating process, may be irrelevant for communication, another part is supplemented or neutralized by the contextual situation, but it is obvious that translation equivalence does not imply an absolute semantic identity of the two texts. The theory of equivalence is concerned with factors which prevent such an identity, it strives to discover how close ST and TT can be and how close they are in each particular case [12:6–7].

Componential analysis

Any semantic theory of translation involves the analysis of meaning, i.e. both "pattern recognition and, most importantly, the segmentation of the data into discrete, codable elements. This is as true of 'making sense' of language as it is of analysing chemical substances. For example, for the chemist, *water* and *hydrogen peroxide* share the common components H and O (hydrogen and oxygen) but differ in the amount of oxygen they contain; H20 as against H202, i.e. the 'meaning' of each depends on the components they possess and the way those components are organized.

A very similar 'atomic' and 'molecular' approach to the description of word-meaning was developed in the 1950s by anthropologists working on ... kinship systems and soon extended to other systems — colour categories, plant taxonomies, diseases, etc. — and to semantics as a whole. As a *theory* which sought to isolate *universal* semantic features (features which would apply in any language) componential analysis has been a disappointment. But as a *technique* for describing at least part of the semantic system of particular languages, it is still worth considering particularly as a means of gaining insights into the similarities and differences between languages; insights which cannot but be of value to the translator and the language learner.

The essential assumption of componential analysis is that the meaning of a word is the sum of a number of elements of meaning which it possesses — semantic **distinctive features** — and that these elements are **binary**, i.e. marked as present (+) or absent (–).

We might take, for example, a set of English words such as *man*, *woman*, *boy*, *girl* and show how a componential analysis can be used to specify' the **lexical entry** for each. First of all, it is clear that the four words (or, more correctly, the four concepts they realize) do, indeed, form a set of items. They share the characteristic or feature **human**. *Man* and *woman* share the feature **adult** and *man* shares with *boy* the feature male. For this set, these three features are sufficient to create definitions for each which distinguish them unambiguously. The lexical entries would be:

man {+human+adult+malc}, *woman* {+human+adult-male}, *boy* {+human-adult+male}, *girl* {+human-adult-male"|1:87–88|.

From the translator's point of view, componential analysis has considerable attractions as a practical technique even if ... it suffers from a number of defects as a theory.

Consider the problem of lack of lit between the lexical items of two languages; an issue which continually faces the translator. Take the difficulty of translating the German noun *Li hr.* Without help from the context, the translator cannot know whether the appropriate English equivalent is *watch, dock, hour* or *time* (*Die Uhr ist... The time is...*). Clearly, the lexical entry for *Uhr* does not contain 'size' as a significant component as it must be in English to distinguish *watch* from *clock...*

There are two major problems with componential analysis, both of which reduce its usefulness:

(1) that the 'features' proposed for the analysis of any item are arbitrary — not, in itself, necessarily a problem — and. hence, what may be criterial for one user may turn out to be trivial or secondary for another and

(2) the binary nature of the features (possession or non-possession). This limits the application of the analysis to items which are clear!) distinguishable in such terms and makes it difficult to create satisfactory lexical entries for several categories of items, those which:

(a) belong to ***multiple*** rather than binary ***taxonomies*** — metals, for example: *gold, silver, tin. copper, lead, zinc*;

(b) are in ***hierarchical relationships*** with each other — measuring scales, for example, *inch, foot, yard*;

(c) ***overlap — house, home, dwelling, place, share, divide***;

(d) relate to each other by reference to some *assumed norm — short/tall, hot/cold.*

For the translator, each of these is (potentially, at least) significant. Do users of both languages, for example, categorize the same metals as 'precious'? How do they perceive units of measurement — lime, space, volume, weight, etc. — or distinguish, for example, *house* from *home*? What norms do they use; is 1.5 meters tall or short? Is 25 °C hot, warm, cool or cold?" |1:90–91|.

Meaning postulates

A fundamental problem for the translator is that the relationships of similarity and difference between concepts (and the words that express them) do not necessarily coincide in the languages involved in the translation. However, it is not difficult to express such relationships for a particular language in terms of simple set theory and the key notions of ***inclusion*** and ***exclusion***; the first focusing on what concepts have in common, the second on what distinguishes them.

We can isolate three key types of relationship between concept and concept (and therefore, between word and word).

At one end of the scale we place *inclusion* (hyponymy) and on the other *exclusion* (antonymy). As might be expected, between the two and exhibiting features of overlap — partial inclusion and partial exclusion — we find a middle term — synonymy.

The first of these, **hyponymy**, involves total inclusion: one concept (or the meaning of one word) is included in another. For example, *animal* includes *tiger* or *wine* includes *hock*, i.e. distinguishing EXAMPLE from CLASS or, in traditional terminology, the *subordinate* (hyponym) from the *superordinate*.

Naturally, where systems are in agreement, hyponymy presents no problems for the translator. The difficulties start when they differ [for example, you can find] even in contemporary dictionaries, *foxhunting* and *bullfighting* within the class *sport*.

The second, **synonymy**, is particularly problematic, since it involves overlap rather than total inclusion or exclusion and assumes that, in principle, either item may be selected, in any context. Absolute, 100 per cent synonymy is, as might be expected, very rare and perhaps impossible, since it would require each item to be totally interchangeable and collocate not only with the same sets as the other but with all members of these sets. Two close English synonyms — *hide* and *conceal* — illustrate this.

Leaving aside the fact that *hide* can also be a noun and assuming, therefore, that both are verbs, we find the two to be virtually interchangeable (though the game of **conceal and seek* is clearly unacceptable!), except for correlations with less formal and more formal style respectively, i.e. it is the ***context of use*** rather than the ***co-text of usage*** which constrains the selection between them...

|There are| even more intractable problems where overlap is involved.

The Italian *canale* includes two concepts which are distinguished in English — *canal* and *channel* — by, in componential terms, the distinctive feature (artificial) which is |+| in the first case and |–| in the second. Presented with the statement by the Italian astronomer Schiaparelli in 1877 that he had seen a complex network of 'canali' on Mars, it was only a matter of time — a mere three years — before these 'canals' provided the rationale for the first story about ancient (extinct?) Martian civilization; a mythos which has spawned countless science fiction stories over the last century or more...

It would, as translators are well aware, be simple (and rather unrevealing) to proliferate examples of this kind.

The third, **antonymy**, concerns exclusion rather than inclusion and. as might be expected, exclusion involves a number of relationships which can be illustrated by considering the following words:

1) *true – false*;
2) *gold – silver – copper – iron – tin*;
3) *large – small*;
4) *teacher – student*;
5) *one – two – three – four*;
6) *become – stay/remain*.

It is clear that each word is not only in ***contrast*** with the rest of the words in the set but also that some sets consist of items which are in ***opposition*** and that, of these, some are ***gradeable opposites***.

Each of these examples serves to distinguish six major types of opposition: (1) taxonomic: (a) binary, (b) multiple and (c) hierarchical; (2) polar; (3) relative; and (4) inverse [1:91–93].

The semantic theory has a considerable explanatory power. It uncovers those aspects of the translating process which are not open to direct observation. It explains numerous causes and areas of differences between ST and TT. However, in V. Komissarov's words, it rests on the assumption that all language elements are semantically categorized, which is not the case and may not be the case in any foreseeable future.

Questions

1. What two approaches are mentioned as used within the semantic theory of translation? What are they used for?
2. How does componential analysis represent word semantics?
3. What are the limitations of componential analysis?
4. How can meaning postulates complement componential analysis in translation studies?
5. Why is componential analysis a valuable practical technique for the translator?

Practice your translation skills

Sentences with zero-subjects

1. As is generally true of conference volumes, the quality of these papers is uneven.
2. As is evident from the discussion in the preceding sections, we need efficient numerical procedures.
3. As is often the case with conference papers, several of the contributors report on research in progress.
4. As is typical of this school, the papers are short on theory and long on description.
5. As might be expected, there have been innumerable minor and several major revisions of Rolls' work since 1989.
6. As is obvious from the preceding discussion, her arguments against my approach are not only naive, but are also based on an incorrect interpretation of the basic fact.
7. As is typical of that period, the approaches combine keen insight with a certain lack of rigor and precision.
8. As will become clear in Section 2, there are several restrictions on the theory.
9. Finally, there is the analysis of the individual scientist's thematic presuppositions that motivate and guide his research, as amply discussed above.
10. They can not refer to a specific expression previously used — as appears clearly in the following paragraph.
11. As seems usual with works of this kind, there is no apparatus at all, and even the references in the text itself are rationed penuriously.
12. As will be argued in the next section, it should be possible to use prerecorded data derived from computer simulations to test the overall system performance.
13. As can be seen from this short discussion, data analysis of the large-scale tests requires a significant effort before comparisons between the model and the large-scale tests are possible.
14. As has already been illustrated, Banfield has no way of accounting for the interpretation.
15. As has been shown earlier, this is one of the most important characteristics.

To do

1. Time does not permit me to cover these questions fully.
2. And the paper does make a significant contribution.
3. But we do in fact have an agreed way of working them out.
4. Dowie and Crabble do have some sense of the distinction.
5. The model does have at best some systematic theoretical advantages.
6. However, most of the accounts which he examines do meet his criteria.
7. Does science deserve either the favorable or the unfavorable parts of its present reputation?

8. In earlier work I did in fact claim that it was untrue.
9. Yet some researchers have always assumed that the intuitive notion does have some scientific value.
10. Failures of components other than tubes have been negligible and do not warrant any conclusions of predictability.
11. Let us therefore look at a table (taken from Laskowski 1993) that does show such frequencies.
12. The number of genuine counterexamples is perhaps smaller than Goldsmith suggests, but they do exist.
13. What I do deny is that this suggestion can be successfully treated as either a logical presupposition or an entailment.
14. The only theory that does allow a hierarchy in the sense I intend is Emmond's, though this may no longer be true of more recent of the theory.
15. This does not lessen the profundity of her findings, although it does make them accessible to a wider audience.
16. Though he does not explore the application of this criterion in greater detail, he assumes that all the accounts he examines do satisfy it, if only implicitly.
17. Computers can and do arrive at results which revolutionize this field of science.
18. It is necessary to determine just what the costs of doing research are.
19. Not only does Krashen grapple with subtleties of research, but he also offers a different angle on the theory.
20. Not until Newton made his famous discovery did scientists realize the significance of this law.

COMMUNICATIONAL APPROACH

Communicative translation attempts to produce on its readers an effect as close as possible to that obtained on the readers of the original. Semantic translation attempts to render, as closely as the semantic and syntactic structures of the second language allow, the exact contextual meaning of the original.

In theory, there are wide differences between the two methods. Communicative translation addresses itself solely to the second reader, who does not anticipate difficulties or obscurities, and would expect a generous transfer of foreign elements into his own culture as well as his language where necessary. But even here the translator still has to respect and work on the form of the source language text as the only material basis for his work. Semantic translation remains within the original culture and assists the reader only in its connotations if they constitute the essential human (non-ethnic) message of the text. One basic difference between the two methods is that where there is a conflict, the communicative must emphasize the 'force' rather than the content of the message. Thus for *Bissiger Hund* or *Chien mechant,* the communicative translation *Beware of the dog!* Is mandatory; the semantic translations ('dog that bites', 'savage dog') would be more informative but less effective. Generally, a communicative translation is likely to be smoother, simpler, clearer, more direct, more conventional, conforming to a particular register of language, tending to undertranslate, i.e. to use more generic, hold-all terms in difficult passages. A semantic translation tends to be more complex, more awkward, more detailed, more concentrated, and pursues the thought-processes rather than the intention of the transmitter. It tends to overtranslate, to be more specific than the original, to include more meanings in its search for one nuance of meaning.

However, in communicative as in semantic translation, provided that equivalent-effect is secured, the literal word-for-word translation is not only the best, it is the only valid method of translation. There is no excuse for unnecessary' 'synonyms', let alone paraphrases, in any type of translation [7:39].

The communicational theory of translation was suggested by O. Kade and is based on the notions of communication and thesaurus. We shall distinguish between two kinds of thesauruses in verbal communication: *language thesaurus* and *subject thesaurus.*

Language thesaurus is a system of our knowledge about the language which we use to formulate a message, whereas subject thesaurus is a system of our knowledge about the content of the message. In regular communication there are two actors, sender and recipient, and each of them uses two thesauruses. (Although they use the same language their underlying knowledge bases may differ).

In special bilingual communication (i.e. translation), we have three actors: sender, recipient, and intermediary (translator).

A translator has two language thesauruses (source and target one) and performs two functions: decodes the source message and encodes the target one to be received by the recipient (end user of the translation)...

According to communicational approach, translation is "*a message sent by a translator to a particular user and the adequacy of translation depends on similarity of their background information rather than only on linguistic correctness*" |15:43–45|.

The communicational approach highlights a very important aspect of translation — the matching of thesauruses. Translation may achieve its ultimate target of rendering a piece of information only if the translator knows the users' language and the subject matter of the translation well enough I i.e. if the translator's language and subject thesauruses are sufficiently complete). This may seem self-evident, but should always be kept in mind, because all translation mistakes result from the insufficiencies of the thesauruses.

Moreover, wholly complete thesauruses are the ideal case. No translator knows the source and target languages equally well (even a native speaker of both) and even if he or she does, it is still virtually impossible to know everything about any possible subject matter related to the translation |15:51–52|.

One may note that the communicational approach pays special attention to the aspects of translation relating to the act of communication, whereas the translation process as such remains unspecified, and one may only presume that it proceeds either by a transformational or denotative path |15:44|.

The theory of equivalence levels

There are five different types of semantic relationships between equivalent phrases (texts) in two languages. Thus all translations can be classified into five types of equivalence which differ as to the volume and character of the information retained in each. Each subsequent type of equivalence retains the part of the original contents which includes the information preserved in the previous types.

Every translation can be regarded as belonging to a certain type of equivalence. Since each subsequent type implies a higher degree of semantic similarity we can say that every translation is made at a certain level of equivalence. Each level of equivalence is characterized by the part of information the retention of which distinguishes it from the previous level. The list of levels, therefore, includes:

1) the level of the purport of communication;
2) the level of (the identification of) the situation;
3) the level of the method of description (of the situation);
4) the level of syntactic meaning;
5) the level of word semantics.

It is worth noting that the information characterizing different levels is inherent to any unit of speech. Indeed, a unit of speech always has some communicative intent, denotes a certain situation, possesses a certain notional structure, and is produced as a syntactically patterned string of words.

Thus, a translation event is accomplished at a definite level of equivalence. It should be emphasized that the level hierarchy does not imply the idea of approbation or disapprobation. A translation can be good at any level of equivalence [12:15].

V. Komissarov (1973) sees translation theory moving in three directions: the denotative (information translation), the semantic (precise equivalence) and the transformational (transposition of relevant structures). His theory of equivalence distinguishes five levels: (1) lexical units, (2) collocations, (3) information, (4) the situation, and (5) the communication aim [7:9].

According to the "theory of translation equivalence level (TEL)" developed by V. Komissarov the translation process fluctuates passing from formal inter-language transformations to the domain of conceptual interrelations.

V. Komissarov's approach seems to be a realistic interpretation of the translation process, however, this approach fails to demonstrate when and why one translation equivalence level becomes no longer appropriate and why, to get a correct translation, you have to pass to a higher TEL [15:49].

"It may disappoint you to learn that there is no one theory that is entirely adequate for building a comprehensive formal model of translation" [16:8].

Questions

1. How does the concept of antonymy in the meaning postulates model differ from the common notion of 'words which have opposite meanings'?
2. What are the differences between semantic and communicative translation according to P. Newmark? Which is the principal one?
3. What distinguishes the communicational approach from the denotative and transformational models?
4. What idea forms the basis of V. Komissarov's theory of translation equivalence levels?
5. In what way does V. Komissarov's approach generalise the translating process models?

Practice your translation skills

One and it in the sentences

1. Shifty frameworks make it difficult to reach firm conclusions.
2. Such considerations cannot lead one to disregard some essential facts.
3. Our technique has the advantage of enabling one to study them during actual reactions.
4. An analysis such as this permits one to do away with an unnecessary constraint.
5. This would allow one to compare the surface realizations of different features.
6. Secondly, the hypothesis allows one to explain some newly discovered phenomena.

7. The scope of the book will make it of interest to those who are delving into other work in this framework.
8. I find it difficult to envision a situation where the claim could be tested.
9. These procedures made it clear that the sample can respond to a large number of stimuli.
10. Harris' philosophical position is vague, which makes it difficult to interpret some of the statements.
11. Modern methods of calculation make it possible to explore the potential-energy surfaces.
12. Putnam does not make it altogether clear what governs our practice when this occurs.
13. These data make it possible to construct a clearly oversimplified model to account for this increase.
14. There is an approach which makes it possible to quickly obtain quantitative as well as qualitative information about the system.
15. In light of these comments I feel it appropriate to note that this is not a work that makes for easy reading by either a general or specialist audience.
16. The main reason for omitting it here is to simplify the presentation; it remains to be seen whether this analysis can be justified empirically.
17. These results make it evident that the foundations of mathematics cannot be expressed in the form of another mathematical theory.
18. But whereas researchers had earlier felt it incumbent upon themselves to provide reasonably rich fragments of the theory, somehow this necessary work was never carried on in the new areas.
19. As noted earlier, a reader without much background in the field might find it hard to enter the stream of thought presented in the paper, and might have to do some outside reading.
20. I find it hard to believe that any but the most compulsive buyers will think this monograph a necessary adjunct to their libraries.

To make

1. Reference is not made to some recent studies.
2. It should be made clear that these samples are not yet available.
3. But Johansson tried to make odds even by raising some values.
4. It is of significant importance to make use of this valuable source of information.
5. The radio industry has now made available an absolute altimeter.
6. This law makes it possible to determine in which relative direction a low or high pressure area is located.
7. The following table makes it easy to see the difference between the two authors' data.
8. It should be made clear that only micro-microchips have been made to date.
9. Reference was made in the previous paragraph to different types of structures.
10. The designers of airplanes often make provisions for placing some cargo in the wings.

11. Improvements of this kind do cost money, and some means must be found to make up the difference in cost.
12. Make sure that all fuel lines are shielded in so far as is possible from all sources of heat.
13. Note at the outset that at least two considerations could make the search for such explanations unproductive.
14. In the following, I first briefly describe the major arguments made by this approach and point out what I see as defective with those arguments.
15. The present paper deals mainly with BBC Television, although reference has been made where necessary to other major developments in this field both at home and abroad.
16. Increasing use must be made of young graduates, having only unspecialized scientific education, with provision of on-the-job training and professional growth in engineering.
17. Unless the researcher is told what is wanted, is furnished with scientific assistance outside his own field when he needs it, and is made to understand how his work fits into the entire project, his efficiency is reduced.
18. The project is made up with the full consideration of all these points.
19. You must make out a list of what you need for your experiment.
20. The author always makes references to the additional literature on every subject of interest to the reader.
21. A constant attempt is made to keep the burden of paper work to a minimum, especially for the men working in the laboratory.

TRANSLATION PROCEDURES

While translation *methods* relate to whole texts, translation *procedures* or *techniques* are terms used for sentences, clauses, phraseological units and words.

Though each word in the language has its own meaning, the actual information it conveys in a text depends, to a great extent, on its contextual environment... Some words, however, are less sensitive to the contextual influence than others. There are words with definite meanings which are retained in most contexts and are relatively *context-free*. They usually have *permanent equivalents* in TL which, in most cases, can be used in TT. The translator is thus provided with reference points helping him to choose the appropriate translation variants [12:71].

Translating context-bound words

However, the meaning of most words "in any sentence largely depends on the context in which they are used. True, all words have meanings of their own which are defined in dictionaries but the context may specify or modify the word's meaning, neutralize or emphasize some part of its semantics. And before looking for an equivalent, the translator has to make a careful study of the context to identify the contextual meaning of the word that should be rendered in translation. This meaning is the result of the interaction between the word semantics and the methods of its actualization in the speech act.

Most of the words are *polysemantic*, that is, they have several meanings. As a rule, the word is used in the sentence in one of its meanings and the context must show what meaning has been selected by the speaker and cut off all other meanings irrelevant for the particular act of communication.

We know that in most cases, the meaning of a SL word can be rendered in TL by a number of *regular equivalents*. *Variable equivalents* can be found not only to the polysemantic words but also to the *monosemantic* words as well as to a semantic variant of a polysemantic word, that is, to one of its meanings which can be actualized in the course of communication.

It is clear that a translator has to find the appropriate *occasional equivalent* in each particular context. The context may modify the meaning of a word to such an extent that its regular equivalents will not fit TT. The contextual modification may extend to the connotative meaning of the word. The translator is greatly concerned about the adequate reproduction of this part of the word semantics since it has an impact upon the whole text. *"Professional skills in using both the dictionary data and the information extracted from the context to solve his translation problems are the hallmark of a good translator"* [12:75–78].

Translation procedures for lexical units

Transference (loan word, transcription) is the process of transferring a SL word to a TL text as a translation procedure. It includes transliteration, which relates to the conversion of different alphabets: e.g. Russian (Cyrillic), Greek, Arabic, Chinese, etc. into English. The word then becomes a 'loan word'.

The following are normally transferred: names of all living (except the Pope and one or two royals) and most dead people; geographical and topographical names including newly independent countries such as (le) Zaire, Malawi, unless they already have recognized translations... names of periodicals and newspapers; titles of as yet untranslated literary works, plays, films; names of private companies and institutions; names of public or nationalized institutions, unless they have recognized translations; street names, addresses, etc. In all the above cases, a similar type of readership is assumed and, where appropriate, a culturally-neutral TL third term, i.e. a functional equivalent, should be added.

Cultural equivalent. It is an approximate translation where a SL cultural word is translated by a TL cultural word: thus Palais *Bourbon* [is translated] as '(the French) Westminster'; *Montecitorio* as '(the Italian) Westminster': *nolaire* – 'solicitor'. The above are approximate cultural equivalents. Their translation uses are limited, since they are not accurate, but they can be used in general texts, publicity and propaganda, as well as for brief explanation to readers who are ignorant of the relevant SL culture. They have a greater pragmatic impact than culturally neutral terms.

Functional equivalent. This common procedure, applied to cultural words, requires the use of a culture-free word, sometimes with a new specific term; it therefore neutralises or generalises the SL word; and sometimes adds a particular thus: *baccalaureat* — 'French secondary school leaving exam'; *Sejm* — 'Polish parliament'. This procedure, which is a cultural componential analysis, is the most accurate way of translating i.e. deculturalising a cultural word.

Descriptive equivalent. In translation, description sometimes has to be weighed against function. *Samurai* is described as 'the Japanese aristocracy from the eleventh to the nineteenth century'; its function was 'to provide officers and administrators'. Description and function are essential elements in explanation and therefore in translation.

Synonymy. We use the word 'synonym' in the sense of a near TL equivalent to an SL word in a context, where a precise equivalent may or may not exist. This procedure is used for a SL word where there is no clear one-to-one equivalent, and the word is not important in the text, in particular for adjectives or adverbs of quality (which in principle are 'outside' the grammar and less important than other components of a sentence). Here economy precedes accuracy.

Through-translation. The literal translation of common collocations, names of organizations, the components of compounds (e.g. 'superman'. *Übermensch)* and perhaps phrases *(compliments de la saison*, 'compliments of the season') is known as **caique** or **loan translation.** I prefer the more transparent term 'through translation'.

In theory, a translator should not 'initiate' a through-translation. In fact, through-translations in contiguous cultures sometimes fill in useful gaps..." [8:81–84].

V. Komissarov speaks about 'operations', 'transformations' or 'manipulations' that the translator performs: "... the process [of translation] is viewed as a number of manipulations with the form or content of the original, as a result of which the translator creates the text in the target language. The type of operation is identified by comparing the initial and the final texts."

The first group of operations (or transformations) is characterized by imitation of the form of a word or of a collocation. In the first case the translator tries to represent the pronunciation or the spelling of the foreign word with the TL letters. Thus we get such translations as «битник», «стриптиз», «эскалация», etc. This method is usually called **translational transcription**.

In the second case a translator creates a blueprint collocation in TL by using a **loan translation.** This results in such forms as «мозговой трест» (brain trust), «работа по правилам» (work-to-rule), «люди доброй воли» (people of good will).

The second group of operations includes all types of lexical transformations involving certain semantic changes. As a result, the meaning of a word or a word combination in ST may be made more specific, more general or somewhat modified as a way to discovering an appropriate equivalent in TL [12:32].

Other translation techniques

Another type of lexical transformations is often called '**modulation**'. It involves the creation of an equivalent by replacing a unit in SL with a TL unit the meaning of which can be logically deduced from it and which is just another way of referring to the same object or an aspect of the same situation.

The third group of translation procedures comprises all types of transformations involving units of SL grammar. The translator may solve his problems by preserving the syntactic structure of the source text and using the analogous TL grammatical forms or 'a word-for-word translation'. This may be called '**a zero transformation**'.

In other cases a translator may resort to various types of grammatical substitutes. First, we may mention two types of transformations which change the number of sentences in TT as compared to ST. As a rule, the translator renders the original text sentence by sentence and the number of sentences remains the same. However, it may so happen that the structural and semantic problems of a translation event can be best solved by breaking an original sentence into two parts, i.e. translating it with two sentences in TL.

Another type of such **partitioning** is to replace a simple sentence in the original with a complex one in the translation, comprising one or several subordinate clauses. The problems that can be solved through this technique are varied. First it may come handy in dealing with the English syntactic complexes which pack in two subject-predicate units, each making up a sentence or a clause in the Russian translation...

The opposite procedure means **integrating** two or more original sentences into one or compressing a complex sentence into a simple one. This technique is also used for structural and semantic reasons. Sometimes one of the sentences is grammatically too incomplete to warrant its separate reproduction in translation.

The integration procedure may be necessitated by close semantic ties between adjacent sentences. The partitioning and integration procedures may be used together, resulting in a kind of **syntactic and semantic reshuffle** of sentences in translation...

Another type of grammatical transformations is characterized by the translator's **refusal to use analogous grammatical units in TT**. He tries to render the meaning of SL units by changing the grammatical form of a word, the part of speech or the type of the sentence.

Finally, there is a group of transformations which ensure the required degree of equivalence by a number of changes of both lexical and grammatical nature. They involve a different arrangement of ideas, a different point of view and other semantic modifications whenever a direct translation of a SL unit proves impossible. A typical example of such a procedure is the so-called **antonymous translation** describing the situation, as it were, from the opposite point of view and rendering an affirmative SL structure by a negative TL one or vice versa.

A complex change also occurs in **explicatory translations** in which a SL unit is replaced by a TL word combination describing or defining its meaning.

In conclusion, we should mention one more specific procedure which may come handy to the translator when he is baffled by an apparently unsolvable translation problem. It may be called the **compensation** technique and is defined as a deliberate introduction of some additional elements in translation to make up for the loss of similar elements at the same or an earlier stage. The compensation method is often used to render the stylistic or emotional implications of the original [12:33–38].

Another group of authors suggests the following classification:

The basic set of translation devices (a kind of 'translator's tool kit') comprises partitioning and integration of sentences, transposition of sentence parts, replacement, addition and omission of words and word combinations as well as a special type of transformations called antonymous translation.

Partitioning is either replacing in translation of a source sentence by two or more target ones [**outer partitioning**] or converting a simple source sentence into a compound or complex target one [**inner partitioning**].

Integration is the opposite of partitioning, it implies combining two or (seldom) more source sentences into one target sentence.

Transposition is a peculiar variety of inner partitioning in translation meaning a change in the order of the target sentence syntactic elements (Subject, Predicate, Object, etc.) as compared with that of the source sentence dictated either by peculiarities of the target language syntax or by the communication intent.

Replacement is any change in the target text at the morphological, lexical and syntactic levels of the language when the elements of certain source paradigms are replaced by different elements of target paradigms.

Antonymous translation is replacement in translation of a negative statement by an affirmative one or vice versa.

Addition in translation is a device intended for the compensation of structural elements implicitly present in the source text or paradigm forms missing in the target language.

Omission is reduction of the elements of the source text considered redundant from the viewpoint of the target language structural patterns and stylistics [15:90–96].

Questions

1. What is a connotative meaning? How does it influence the translator's choice?
2. What distinguishes transference from other translation procedures? What is the difference between transcription and transliteration?
3. Why do you think "through-translations should be used only when they are already recognized terms"?
4. What kinds of semantic changes can occur in the translation of lexical units? Why are the logical operations of generalization, specification and modulation used in the translating process?
5. What are the main types of grammatical transformations? Give examples.
6. What do you think is meant by 'complex translation transformations'? Give examples.
7. Why is the technique of antonymous translation used?
8. How are compensational devices used in translation?

Practice your translation skills

That, these and those pronouns

1. The procedure was identical to that of Study I.
2. These results are also consistent with those of Bowerman (1989b).
3. Lowe's findings are not directly comparable with those of Hartmann.
4. My analysis conflicts with that of Shrivel (1991).
5. For the most parts, the tables resemble those found in Hull 1992.
6. This shows a pattern similar to that suggested by Gillegan's work.
7. The present theory thus embodies a generalization similar to that of Gaster (1993).
8. Heath's approach in this article is somewhat different from that of other chapters.
9. Krauzmayer's data are thus earlier than those of Bruno Schweizer's studies of 1969.
10. With a few exceptions, his examples follow those that are by now well known to many scholars in the field.

11. In some examples, the details of a study provided by Lundt in the text do not match those in his accompanying table.
12. Furthermore, Fasold's own contributions are clearly differentiated from those of others.
13. These values compare favorably with those of standard oscillators.
14. My findings differ only slightly from those of other authors.
15. Thus, if I compare Blot's bibliography to that of Scalise 1990, the total number of common items is eight.
16. I would like to examine here an aspect of Kruger's discussion which distinguishes his position from that of other researchers.
17. The plan of the current book follows that of the parent book — a cyclic presentation, first of the general framework and essential concepts and categories.
18. The approach has three aspects, that of general theoretical principles, that of known results and conclusions, and that of the basically known, but now refined, experimental method, and the computational procedure.
19. For the sake of simplicity, we treat these as the same properties.
20. While there are different classes of failures, we must first analyze those which can be anticipated.

To have

1. Many computing machines have special orders built in them.
2. An analog computer may have more than 100 or 200 circuit elements.
3. The equipment had to be thoroughly checked out before being returned to operation.
4. The other main range prevails when power changes have appreciable temperature effects.
5. For the detection of any small difference more careful measurements have to be made.
6. The component in question has some starting points determined by the manufacturer's design and tolerance.
7. These difficulties will always have to be taken into consideration by the equipment engineer.
8. This kind of analysis has come to be used increasingly in historical, philosophical and sociological researches.
9. To meet the export requirements the domestic consumption has to be curtailed.
10. This point has certain properties which we have to take into consideration when we wish to put power into the antenna.
11. Brazil has taken the lead in the movement to denuclearize Latin America and had the question put on this year's agenda of the General assembly.
12. In a great many universities the fields of research are so varied and broad that it is not considered best to have overall control and direction.
13. Polar continental masses in winter are cold and dry because having moved over land they have little moisture and low temperature.

14. Such oscillators must have their supply voltages carefully filtered to avoid frequency modulation.
15. Kapitsa's aim had grandeur which one must admire. 16. Here we will certainly have some distortions occurring.
16. A more accurate determination of position may be had by replotting the observed bearings.
17. All this criticism does not mean that I believe his data or conclusions are not without merit, but merely that they are not so firm as the author would have us to think.
18. Third, where available documents permit, I have focused attention on that revealing stage of the individual's scientific work which may be called the nascent phase.
19. Those few philosophers of science who have looked at such problems have tended to label them as 'metascience problems', hidden at the basis of science, and not really part of it.
20. The committee gave overwhelming approval to a separate resolution that would have the Assembly urge all states to take such separate and collective action as is open to them in conformity with the UN Charter to bring about an abandonment of apartheid.

TRANSLATION COMPETENCE

Translation studies has only recently become translator-oriented, rather than centred on the target text or the languages themselves. This shift of perspective has run parallel to developments in applied linguistics concerned with the study of bilingualism, contrastive analysis, interlanguage and second language acquisition [2:20].

First we are going to "describe translation competence in terms of generalizations based on inferences drawn from the observation of translator performance" [1:39].

The competence of the human translator can be described in terms of an expert system.

An expert system contains, in essence, two basic components.

1. A knowledge base which contains the combined knowledge and expertise of the domain (or, more likely, the sub-domain). In medicine, for example, this would include lists of illnesses together with their associated symptoms.

2. An inference mechanism ... software which can use the knowledge base to reason or make inferences about the information contained there. In medicine this mechanism would compare symptoms reported to it with those listed in the database and match symptoms with likely illnesses...

We would envisage a translator expert system containing the [following] kinds of knowledge and skills:

(1) a knowledge base consisting of:
- (a) SL knowledge; the syntactic rule systems of the code, its lexicon and semantics and its text-creating systems;
- (b) TL knowledge; equivalent to that in the SL;
- (c) text-type knowledge;
- (d) domain knowledge;
- (e) contrastive knowledge of each of the above;

(2) an inference mechanism which permits:
- (a) the decoding of texts, i.e. reading and comprehending SL texts;
- (b) the encoding of texts, i.e. writing TL texts, e.g. a writer's assistant system which helps with the writing. [1: 39–40]

The second 'alternative' would be to deny the competence- performance dichotomy which we have been implicitly accepting and redefine our objective as the specification of a multicomponent "communicative competence' which would consist, minimally, of four areas of knowledge and skills: grammatical competence, sociolinguistic competence, discourse competence and strategic competence.

(1) **Grammatical competence**: knowledge of the rules of the code, including vocabulary and word-formation, pronunciation/spelling and sentence structure, i.e.

the knowledge and skills required to understand and express the literal meaning of utterances.

(2) **Sociolinguistic competence**: knowledge of and ability to produce and understand utterances appropriately in context, i.e. as constrained by topic, the status of the participants, purposes of the interaction, etc.

(3) **Discourse competence**: the ability to combine form and meaning to achieve unified spoken and written texts in different genres. This unity depends on cohesion in form (the way in which utterances are linked structurally to facilitate interpretation of text) and coherence in meaning (the relationships among the different meanings in a text; literal meanings, communicative functions or social meaning).

(4) **Strategic competence**: the mastery of communication strategies which may be used to improve communication or to compensate for breakdowns (caused by limiting factors in actual communication or to insufficient competence in one or more of the other components of communicative competence) [1:41].

R. Bell then adapts D. Hymes' definition and specifies translator communicative competence as "the knowledge and ability possessed by the translator which permits him/her to create communicative acts — discourse — which are not only (and not necessarily) grammatical but ... socially appropriate" [1:42].

Lastly, in the behavioural framework, translational competence is viewed as:

1) the ability to generate a target-text series of more than one viable term (target text 1, target text 2 ... target text 3) for a source text;

2) the ability to select only one target text from this series, quickly and with justified confidence, and to propose this target text as a replacement of source text for a specific purpose and reader [9:281].

Translation into the second language

The business of translating into a second language is clearly very different from translating into the first language. The two activities are in a way mirror images. In translating from a second language, the main difficulty is in comprehending the source text: it is presumably much easier to marshal one's first language resources to come up with a natural looking target text. In translating into a second language, comprehension of the source text is the easier aspect; the real difficulty' is in producing a target text in a language in which composition does not come naturally. It is probably wise to assume at the outset that perfectly balanced bilinguals are so rarely found that virtually all human translation activity falls into one of two categories — into or from the second language.

Native writers can manipulate all the devices that go to make up natural-looking texts. The same case could be argued at finer levels of linguistic analysis; first language writers are, presumably, less likely to make grammatical errors and unfortunate vocabulary choices than second language writers [2:57].

Let us assume that translation competence into the second language is somehow tangled up with second language proficiency. It is, however, a very special variety of second language proficiency: the second language translators have to work within the limitations of their second language repertoire, and the stages of individuals' language development must be reflected in the quality of their translation. But the translators also have to work within the limitations of the source text, and it is this that makes translation into the second language a very special variety of second language writing.

One aspect of this is that translation closely circumscribes writers' output, reducing their ability to produce optimum quality output. Writers of primary texts are free to a greater or lesser extent to control the content in accordance with their productive ability.

Another aspect is the special character of written language itself, and the fact that high levels of second language proficiency in writing reflect control over these special features of written language. ... Much of what is professionally translated is at the more formal end of the stylistic scale, and ... the ability to produce language more characteristic of writing than speaking is a built-in requirement for translators [2:58–59].

Translators and the 'craft' of translating

Bear in mind, however, that knowing a foreign language and your subject is not as important as being sensitive to language and being competent to write your own language dexterously, clearly, economically and resourcefully.

Being good at writing has little to do with being good at 'essays', or at 'English' as you may have learned it at school. It means being able to use the appropriate words in the appropriate order for the object or process you are attempting to describe; continuously trying to improve your writing (a translation is never finished); and increasing your own English vocabulary co-extensively with your knowledge of new facts and new foreign- language words. And it means making flexible use of the abundant grammatical resources of your language, which are enriched by contemporary speech. It is something which, like translation, you can learn: you are not born a good writer; you do not have to be one now; you have to be determined to become one, to relate new experience to fresh language.

A translator has to have flair and a feel for his own language. There is nothing mystical about this 'sixth sense', but it is compounded of intelligence, sensitivity and intuition, as well as of knowledge. This sixth sense, which often comes into play ... during a final revision, tells you when to translate literally, and also, instinctively, perhaps once in a hundred or three hundred words, when to break all the 'rules' of translation [8:3–4]. A satisfactory translation is always possible, but a good translator is never satisfied with it. It can usually be improved. There is no such thing as a perfect, ideal or 'correct' translation. A translator is always trying to extend his knowledge and improve his means of expression; he is always pursuing facts and words. He works on four levels; translation is first a science, which entails the knowledge and verification of the facts and the language that describes them — here what is wrong, mistakes of truth, can be identified; secondly, it is a skill, which calls for appropriate language and acceptable usage; thirdly, an art, which distinguishes good from undistinguished writing and is the creative, the intuitive, sometimes the inspired, level of the translation; lastly a matter of meritorious translations is the reflection of individual differences [8:6].

Questions

1. What is translation competence according to R. Bell?
2. What are the implications of the translator expert system model for translator training?
3. How does the communicative competence characterization relate to the translator expert system model?
4. What does the behavioural model of translator competence tell us about the variety of translations?
5. What factors make translation into the second language inevitable? Desirable?
6. What are the differences between translation into a first and second language?
7. Why is learning to write in a stylistically authentic way considered to be an important part of translator training?
8. What is the relationship between second language competence and second language translation competence?
9. Do you agree with P. Newmark's prioritization of translator's skills and aspects of knowledge? Why/why not?
10. Do you think the four-level description of translation can be applied to technical translation? Why/why not?

Practice your translation skills

Infinitive

1. The answer to this question remains more difficult to reconstruct.
2. Clear evidence is, in fact, difficult to find.
3. It appears that some general claims mentioned in Sec.4 may be difficult to maintain.
4. This possibility is more difficult to puzzle out than the first.
5. It is a feature of such works that their generalizations are by no means obvious or easy to discover.
6. We cannot claim to have discovered all and only the features of the object.
7. The author of the paper claims to have been the first to arrive at such a conclusion.
8. We still have a long way to go before we can claim to have solved this problem.
9. He therefore chose to neglect two ruling kinds of evidence.
10. He therefore did not need to know of Lorenz's paper of 1904.
11. Nowe has managed to provide a full-bodied logical system that accomplishes all of the following objectives.

12. Debate over this and other issues has been slow to get off the ground.
13. Factors 4–5 are more difficult to interpret than the first three.
14. The results of this integrated research are hard to find.
15. So many topics are covered that the main thread is very hard to follow.
16. But the direct link between theory and analysis is difficult to substantiate.
17. However, such differences are difficult for a scientist to accept.
18. Limitations of space make it impossible for a comprehensive survey to be offered here, but three examples will be adduced below.
19. Furthermore, she offers an explanation for these problems that seems reasonable and easy to accept.
20. Forbes does not claim to have achieved the goal of banishing relativism, but claims rather to have laid out a series of challenges, empirical or otherwise, to have clarified a number of issues, and to have presented a serious alternative.

Gerund

1. Two things are worth mentioning about this analysis.
2. But the monograph is well worth reading.
3. I am wary of setting up an entirely new notion.
4. To correct the mistake requires no more than drawing the same distinction.
5. I am grateful to M. Brook for bringing these facts to my attention.
6. This account requires saying that such a position is obligatory.
7. Space limitations prevent me from describing this procedure in detail.
8. But the theory may be worth constructing, the data worth finding.
9. We are actually interested in comparing one group of contrasts with another.
10. It is worth recalling in this connection Hill's remark.
11. The chapter is particularly persuasive in countering this claim.
12. Although the preceding facts support this possibility, other considerations caution us against exaggerating it.
13. The logic of my attack in this chapter and the last commits me to rejecting Strawson's treatment.
14. He proposed several other explanations as well, which space limitations prevent me from discussing.
15. Thanks are due to two anonymous reviewers for bringing these examples to my attention.
16. If we regard an object's having been mentioned as a way of its being salient for purposes of reference, why should we not regard another alternative?
17. I propose handling all the examples I shall give in this chapter along similar lines.
18. The case against this claim is strengthened by our finding such further counter-examples.
19. I regret having to say this, since the book is far ahead of anything else that has been written on the topic.
20. On the whole, the contributors have succeeded in providing a broad, if patchy, overview of the problem they deal with.

TECHNICAL TRANSLATION

Translation of scientific and technical materials has a most important role to play in our age of the revolutionary-technical progress. There is hardly a translator or an interpreter today who has not to deal with technical matters. Even the 'purely' literary translator often comes across highly technical stuff in works of fiction or even in poetry. An in-depth theoretical study of the specific features of technical translation is an urgent task of translation linguistics while training of technical translators is a major practical problem.

In technical translation the main goal is to identify the situation described in the original. The predominance of the referential function is a great challenge to the translator who must have a good command of the technical terms and a sufficient understanding of the subject matter to be able to give an adequate description of the situation even if this is not fully achieved in the original. The technical translator is also expected to observe the stylistic requirements of scientific and technical materials to make text acceptable to the specialist [12:52–53].

Technical translation is one part of specialized translation; institutional translation, the area of politics, commerce, finance, government etc., is the other. I take technical translation as potentially (but far from actually) non-cultural, therefore 'universal'; the benefits of technology are not confined to one speech community.

The profession of translator is co-extensive with the rise of technology, and staff translators in industry (not in international organizations) are usually called technical translators. Technical translation is primarily distinguished from other forms of translation by terminology, although terminology usually only makes up about 5–10% of a text. Its characteristics, its grammatical features (for English, passives, nominalizations, third persons, empty verbs, present tenses) merge with other varieties of language. Its characteristic format ... is the technical report, but it also includes instructions, manuals, notices, publicity, which put more emphasis on forms of address and use of the second person.

Further, unless its non-technical style is jazzed up and popularized, it is usually free from emotive language, connotations, sound-effects and original metaphors, if it is well written... Part of a good translator's job often consists in rephrasing poorly written language and converting metaphors to sense.

However, the central difficulty in technical translation is usually the new terminology. The main problem is likely to be that of some technical neologisms in the source language which are relatively context-free, and appear only once "*Terminological words* are relatively context-free though the context often helps to identify the specific field to which the term belongs" [8:151–152]. In the sentence "*These rifles are provided with a new type of foresight*" the context clearly shows that the meaning of '*foresight*' is that of a military term and therefore all other meanings of the word can be disregarded.

As a rule, English technical terms have their permanent equivalents in the respective Russian terminological systems. Many Russian equivalents have been formed from the English terms by transcription or loan translation. Quite a few of them are international terms. In some cases there are parallel forms in Russian: one formed by transcription and the other, so to speak, native.

The translator makes his choice considering whether ST is highly technical or not, for a borrowed term is usually more familiar to specialists than to laymen. He has also to take into account the possible differences between the two forms in the way they are used in TL. For example, the Russian «индустрия» is restricted in usage and somewhat old-fashioned.

Dealing with context-free words the translator must be aware of two common causes of translation errors. First, English and Russian terms can be similar in form but different in meaning... Such words belong to the so called false friends of the translator... Second, the translator should not rely on the 'inner form' of the English term to understand its meaning or to find a proper Russian equivalent for it is often misleading. A 'packing industry' is not «упаковочная» but «консервная промышленность». Translation of technical terms puts a premium on the translator's knowledge of the subject-matter of ST [12:72–73].

Beginning technical translation

We think that the basic technology is engineering and the basic branch of engineering is mechanical; if you want to become a technical translator that is where you start. However, you should not specialize at the start, but get as much practice as possible in a range of technologies, in particular the ones that are thriving, which, at present, means computer applications in the spectrum of commerce and industry. Again, bear in mind that you are more interested in understanding the description, the function and the effect of a concept such as entropy rather than in learning laws, particularly axioms, theorems, theories, systems in some of which entropy is involved. In a sense, you are learning the language rather than the content of the subject. When you translate a text, you have to be able to stand back and understand roughly what is happening in real life, not just, or as well as convincing yourself that the sentence you have just translated makes sense linguistically. Even though much scientific and technological language and terminology can be translated 'literally' and in newer subjects contains an increasing number of internationalisms and fewer false friends, you have to check the present validity in the register and dialect (viz. usually British or American English) of the terms you use. But here again, there are priorities. Technical terms that appear on the periphery of a text, say relatively context-free in a list or a foot note, are not as important as those that are central; their nomenclature can be checked without detailed reference to their function or the description. In a word, to translate a text you do not have to be an expert in its technology or its topic; but you have to understand that text and temporarily know the vocabulary it uses.

In science, the language is concept-centred; in technology it is object-centred: in, say, production engineering, you have to learn the basic vocabulary with the translations — e.g. 'lathe', 'clutch', 'clamp', 'bolt', 'mill', 'shaft', 'crank', etc. — in diagrams as in ... Oxford Illustrated dictionaries and obtain a clear idea of outline, composition, function and result, as well as learn the action verbs with which they normally collocate: 'a cam rotates' [8:154–155].

Translation method

When you approach a technical text... you read it first to understand it (underline difficult words) and then to assess its nature (proportion of persuasion to information), its degree of formality, its intention (attitude to its topic) the possible cultural and professional differences between your readership and the original one. Next, you should give your translation the framework of a recognized house-style, either the format of a technical report adopted by your client, or, if you are translating an article or a paper, the house-style of the relevant periodical or journal.

You have to translate or transfer or, if not, account for *everything,* every word, every figure, letter, every punctuation mark. You always transfer the name of the publication, a periodical. You translate its reference ('Vol. 1, No. 5') and date, and the general heading or superscript ... using the standard formulae of the corresponding English [TL – N.D.] periodical. For authors, delete the *par* or *von* , reproduce names and qualifications, and transfer the place of the author's appointment (e.g. *Ecole Jes Hautes Etudes* is not normally to be translated) — the reader may want to write to the author. However, you can translate any transferred word in a footnote, if the house-style permits, if you think the clients or readership would find it particularly useful, particularly if it is not a 'transparent' word [8:156].

Normally, as a translator, you are entitled to 'change' the *title* of your text. All titles are either descriptive or allusive; in a non-literary text, a descriptive title that succinctly names the subject and states its purpose is appropriate. (Allusive titles are suitable for some imaginative literature and popular journalism, and may have to be changed.)

The advantage of the title of a scientific article is that it normally states the subject, but not always the purpose or intention of the process described. The title of the SL article is often too long by English standards and ... [some words] could be omitted [8:156–157].

In a technical translation you can be as bold and free in recasting grammar (cutting up sentences, transposing clauses, converting verbs to nouns, etc.) as in any other type of informative or vocative text, provided the original is defective. Here particularly you, who are a professional writer, should produce a better text than the writer of the original, who is not. However, with the terminology take no risks; play for safety.

As a technical translator you vary your format in relation to your customer. If he wants a 'cover-to-cover' translation, you normally keep the house-style of the original. If you translate for a publication, you adopt its house-style, and you should peruse its back-numbers to see what this is. A publication such as the *British Medical Journal* has a 'marked' house-style, including rather pronounced use of passives ('examinations are done', 'a decision was required'), restrained double-noun compounds ('endoscopy plan'), frequent use of suffixed or non-suffixed deverbals collocated with equative verbs or ... all-purpose verbs (e.g., 'the answer is', 'the outcome was', 'take action', 'have effect', 'medication was given', 'management was changed'), occasional use of 'we'.

Lexically, the main characteristic of technical language is its actual richness and its potential infinity — there are always unnamed bones and rocks. In many areas of science, Graeco-Latin terms are used for classification purposes, and in translation they serve as internationalisms, and can be used as functional equivalents when a SL term for a natural object is missing in the TL. You ensure equivalent level of register by transferring standardized Latin and/or Greek terms and by translating SL Graeco-Latin terms by English Graeco-Latin terms, unless/until the words are so frequent that they have a more common Germanic variant ('bleeding', 'heart failure', 'stroke', 'chicken-pox', 'mumps'), where you also bear in mind that English with its phrasal verbs and nouns, and monosyllables, tend to use a more informal style of its own than Romance languages and, in particular, German [8:159—160].

The last point is obvious. Technology being an explosion, escalating exponentially, ongoing, this is the field, on the frontier of knowledge, where you have to be most up to date. Data banks, terminology bureaus, informants, the latest editions of all text- and reference books — nothing else will do; tell your client/employer or your librarian that you have to have these available where possible. Do not hesitate to ring relevant firms and ask for their research or their information departments. If you get a chance, go on or press for refresher courses and visits to research conferences, a tour of plants and factories.

However, terminology makes up perhaps 5-10% of a text. The rest is 'language', usually a natural style of language; and here you normally find an authoritative text aspires to such a style; if it does not, you gently convert it to natural and elegant language — the writer will be grateful to you. So write it well [8:160].

Questions

1. How does the main goal of technical translation affect the requirements a translator is to meet?
2. What text characteristics distinguish technical translation from other varieties? Are they universal for all languages?
3. According to P. Newmark, what is the characteristic format of technical translation? Does he leave out any typical formats? Why?
4. Why does P. Newmark single out context-free technical neologisms which appear only once in ST as the main terminological problem the technical translator is likely to encounter?

5. What rules for dealing with terminology in English-Russian translation does V. Komissarov offer?
6. Do you agree with P. Newmark's arguments against the technical translator's early specialization? Why/why not?
7. How do you understand his statement:"*...to translate a text you do not have to be an expert in its technology or its topic; but you have to understand that text and temporarily know the vocabulary it uses"?*
8. What are the stages in the initial assessment of a technical text that P. Newmark distinguishes?
9. What 'changes' does he say the technical translator is entitled to make?
10. Which, if any, of P. Nemark's recommendations do you find particularly useful? Why/why not?

Practice your translation skills

Grammar issues

1. Clearly, some principle is needed to resolve the dilemma.
2. The data were quantified and, one assumes, submitted to statistical testing.
3. Yet the approach is not as comprehensive as it understands itself to be.
4. This is not to say that the article does not present a kind of argument.
5. Anyone using this bibliography should take not of one important limitation.
6. However, it is interesting to note that the same is also true of other cases.
7. Interestingly, Corbett uses the hierarchies to make two distinct predictions.
8. One may disagree with the definitions of numerous concepts as provided by Powell.
9. It makes little sense to change the term in this article, so I continue to use it despite its misleading connotations.
10. The presentations of each approach are, given their brevity, surprisingly comprehensive.
11. Clearly, the explanations which I offer hare are to be taken only as suggestive.
12. This approach suffers, however, from some empirical and theoretical difficulties.
13. And, as we have seen, this requires us to consider the consequences of alternative analyses for the theory.
14. But we have just seen that this is probably not possible.
15. Some theoretical assumptions behind this approach should be explicated.
16. What we most emphatically cannot do is to rely on traditional analyses because they are traditional.
17. This conclusion confirms the tentative conclusion that we have reached earlier.
18. I shall have nothing else to say about these cases for lack of reliable data and new ideas.
19. Another major empirical lapse is that he never examines the kind of data that could test his claim.
20. However, none of the results we have reviewed conclusively separate the effects.

21. These considerations lead to a familiar conclusion, though it is not Blight's.
22. A number of experimental studies have tested this hypothesis.
23. Opposed to this are two factors, neither measurable.
24. Notice the striking similarity this description bears to his observations.
25. As Theodosius Dobzhansky noted, nothing in biology makes sense except in the light of evolution.
26. This equation is readily seen to be of the same form as Eq. (14).
27. This problem is far too involved for one to be able to solve it.
28. The small number of subjects also raises the question of whether the results can be generalized.
29. These results held even given a significantly great amount of variance in the latter group.
30. Another concern may involve the fact that the evidence in these early studies is relative.
31. For several reasons, it might be considered that this early set of studies is not conclusive.
32. Each of these issues is addressed in more recent research using different methods.
33. My approaches to the construction of this schedule are departures from the methods so far described.
34. Notice too that this analysis violates one of the formal points made earlier.
35. Further difficulties arise for the strong version of the theory when one considers the object's behavior.
36. As the discussion progresses, various more sophisticated treatments will be considered.
37. The results obtained proved to be analogous to those reported by previous authors.
38. As an illustration of the kind of approach I have in mined, consider the following analysis.
39. A serious difficulty will be in that such processes have not yet been considered.
40. Suffice it to say that there are a number of arguments that converge to make possible this idea.

Заключение

Анализ традиционных методик перевода позволяет сделать вывод о том, что игнорирование природы текста, его семиотической сущности, а также понятия переводящей личности снижает качество перевода и его воздействие на получателя перевода. Поэтому уровень ответного воздействия переводного текста на получателя перевода всегда будет в той или иной степени зависеть от уровня владения переводчиком рядом переводческих компетенций.

Авторы выражают надежду, что теоретический материал, изложенный в учебном пособии, и практические задания послужат основой для дальнейшего формирования практических навыков перевода научно-технической литературы у студентов как лингвистических, так и нелингвистических специальностей.

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TEXTS FOR TRANSLATION

Text 1

Computing Machinery and Intelligence

By A.M. Turing

1. The Imitation Game

I propose to consider the question, "Can machines think?" This should begin with definitions of the meaning of the terms 'machine' and 'think.' The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, "Can machines think?" is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game." It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart front the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either "X is A and Y is B" or "X is B and Y is A." The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's object in the game to try and cause C to make the wrong identification. His answer might therefore be:

"My hair is shingled, and the longest strands are about nine inches long."

In order that tones of voice may not help the interrogator the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms. Alternatively the question and answers can be repeated by an intermediary. The object of the game for the third player (B) is to help the interrogator. The best strategy for her is probably to give truthful answers. She can add such things as "I am the woman, don't listen to him!" to her answers, but it will avail nothing as the man can make similar remarks.

We now ask the question, "What will happen when a machine takes the part of A in this game?" Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, "Can machines think?"

2. Critique of the New Problem

As well as asking, "What is the answer to this new form of the question," one may ask, "Is this new question a worthy one to investigate?" This latter question we investigate without further ado, thereby cutting short an infinite regress.

The new problem has the advantage of drawing a fairly sharp line between the physical and the intellectual capacities of a man. No engineer or chemist claims to be able to produce a material which is indistinguishable from the human skin. It is possible that at some time this might be done, but even supposing this invention available we should feel there was little point in trying to make a "thinking machine" more human by dressing it up in such artificial flesh. The form in which we have set the problem reflects this fact in the condition which prevents the interrogator from seeing or touching the other competitors, or hearing their voices. Some other advantages of the proposed criterion may be shown up by specimen questions and answers. Thus:

Q: Please write me a sonnet on the subject of the Forth Bridge.

A: Count me out on this one. I never could write poetry.

Q: Add 34957 to 70764.

A: (Pause about 30 seconds and then give as answer) 105621.

Q: Do you play chess?

A: Yes.

Q: I have K at my K1, and no other pieces. You have only K at K6 and R at R1. It is your move. What do you play?

A: (After a pause of 15 seconds) R-R8 mate.

The question and answer method seems to be suitable for introducing almost any one of the fields of human endeavour that we wish to include. We do not wish to penalise the machine for its inability to shine in beauty competitions, nor to penalise a man for losing in a race against an aeroplane. The conditions of our game make these disabilities irrelevant. The "witnesses" can brag, if they consider it advisable, as much as they please about their charms, strength or heroism, but the interrogator cannot demand practical demonstrations.

The game may perhaps be criticised on the ground that the odds are weighted too heavily against the machine. If the man were to try and pretend to be the machine he would clearly make a very poor showing. He would be given away at once by slowness and inaccuracy in arithmetic. May not machines carry out something which ought to be described as thinking but which is very different from what a man does? This objection is a very strong one, but at least we can say that if, nevertheless, a machine can be constructed to play the imitation game satisfactorily, we need not be troubled by this objection.

It might be urged that when playing the "imitation game" the best strategy for the machine may possibly be something other than imitation of the behaviour of a man. This may be, but I think it is unlikely that there is any great effect of this kind. In any case there is no intention to investigate here the theory of the game, and it will be assumed that the best strategy is to try to provide answers that would naturally be given by a man.

Text 2

Non-Traditional Machining Process Selection —An Integrated Approach

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1. Introduction

Recent advances in the application of hard and difficult-to-machine materials used in turbine, aviation, tool and die making industries etc. has resulted in the development of Non-Traditional machining processes. Need is felt for machining of specific materials with high precision and advanced surface finish and NTM processes turns out to be extremely useful for such applications as the energy in its direct form is used to remove material from the workpiece. It is worth mentioning that the development of new materials along with innovative and complex product design also tries to test the capabilities of traditional machining methods. Thus the enhanced and efficient process capabilities of NTM processes make them acceptable for the manufacturing industries.

Since in the last few decades, a large variety of feature rich NTM processes have developed significantly. So for the effective utilization it is very much essential to select a particular NTM process for a desired shape feature and work material combination as it remains a critical issue since the variety of NTM processes is large enough. As such a particular NTM process may be highly acceptable for a given set of requirements but it may fail to prove its acceptability and strength under different set of conditions. Consequently, a cautious approach in the selection of NTM process for a given machining problem is necessary keeping in view the following influential attributes:

1) Physical as well as operational uniqueness of the NTM processes,

2) Potential of machining different shape features on work material,

3) Applicability of diverse processes to different types of materials, and cost factors of various NTM set up.

To address the critical issue of careful selection of NTM process, need is felt for developing a method such that best process can be selected for the requirement based application of product. Though there are numerous NTM processes to machine various intricate shape features in different work materials. However, in this paper, seven NTM processes, viz., ultrasonic machining (USM), abrasive jet machining (AJM), electrochemical machining (ECM), electric discharge machining (EDM), electron beam machining (EBM), laser beam machining (LBM) and plasma arc machining (PAM) are considered and they can machine various materials like aluminium, steel, super alloys, titanium ceramics etc. The NTM processes can also make precision holes, standard holes (with slenderness ratio ≤ 20), standard holes (with slenderness ratio ≥ 20), and precision thorough cavities and standard thorough cavities. They can also perform double contouring, surface of revolution, shallow and deep through cutting operations on different work materials.

The presence of a large number of attributes which are not only conflicting in nature but is interdependent also; so the selection of a particular NTM for machining a particular product becomes an intricate decision. Since there are a lot of criteria which are both qualitative and quantitative in nature of which a number of criteria are subjective in nature. So, under such conditions the existence of large number of multi-objective, multi-attribute decision-making methods (MODM/MADM) comes to the rescue of decision maker. There are a number of research paper which have used various MCDM methods like analytic hierarchy process (AHP), analytic network process (ANP), technique for order performance by similarity to ideal solution (TOPSIS), multi-objective optimization using ratio analysis (MOORA) etc. to solve the NTM process selection problem. But there exists a lack of evidence to suggest that a single method combining fuzzy AHP, QFD and grey relational analysis (GRA) have ever been used for solving such a problem. In the existing literature either AHP or QFD alone has been implemented for the NTM process selection (Chakraborty and Dey, 2006; 2007) and calculations are entirely based on the crisp values of the expert's judgment. But as far as the literature survey is concerned virtually there is no research paper available which has ever applied GRA for solving NTM process selection problem. Also it is worth mentioning that in the existing literature the priority values of the product characteristics have been assigned a definite value which can have a range of priority values. For finding the weight of product characteristics FAHP has been applied since there exists a range of values for it. No doubt there are few papers which do integrate the Fuzzy-AHP and QFD but in the present paper QFD has been implemented for the identification of the technical requirements whereas Fuzzy-AHP has been used to find weightage of individual technical requirements so that problem arising from the traditional QFD.

Содержание

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