



### Translation of a technical Guidebook

Mohamed Ibrahim Osman Ahmed – Abbas Mukhtar Mohamed Badawi

Department of English – College of Languages – Sudan University of Science and Technology

#### Abstract

The present paper intends to explore the hurdles involved in translating guidebooks or manuals as well as considering the different translation strategies that can be used to overcome the hurdles that are sure to crop up. In this paper the authors seek to apply functional translation theories. This is greatly true particularly when translating general technical terms, industry terms and contract terms. The theoretical basis for the study consists of Eugene Nida's and Vinay & Darbelnet's models for translation as well as theories on terminology by Rune Ingo and Terésa Cabré. Before we examine technical translation in greater detail and try to relate it to various theories of translation, it would be useful to look at what we mean by "technical translation" and contrast some misconceptions about technical translation with the realities of what it means to be a technical translator.

**Key words:** Guidebook, Functional Translation, Misconceptions, Technical Terms

#### المستخلص:

تهدف هذه الورقة إلى استكشاف العقبات التي تتطوي عليها ترجمة كتيب دليل المستخدم وكذلك النظر في استراتيجيات الترجمة المختلفة التي يمكن استخدامها للتغلب على العقبات التي من المؤكد أن تنشأ في هذه الورقة ، يسعى الباحثان إلى تطبيق نظريات الترجمة الوظيفية . هذا صحيح إلى حد كبير خاصة عند ترجمة المصطلحات الفنية العامة وشروط الصناعة وشروط العقد . يتكون الأساس النظري للدراسة من نماذج يوجين نيدا وفيناوي وداربيننت للترجمة وكذلك نظريات حول المصطلحات من إعداد رون إنجو وتيريزا كابري . قبل أن تُفحص الترجمة التقنية بمزيد من التفصيل و محاولة ربطها بنظريات مختلفة للترجمة ، سيكون من المفيد النظر إلى ما تعنيه "الترجمة التقنية" ومقارنة بعض المفاهيم الخاطئة حول الترجمة التقنية مع حقائق ما يعنيه أن تكون مترجم تقني .

#### Introduction

Prior to setting about practically translating a text, the translation operation may look as if the task is unproblematic can easily be dealt with as long as all the resources are available. However, this view hurriedly changes as the true translating process starts. Traditional tools such as dictionaries and even modern ones as the Internet can be of very little help. Hence, the task of bringing about a proper translation of the source text which is highly authentic and genuine and precise is without a doubt hardly attainable. The situation becomes more intricate when it comes to translating

technical texts. This condition is further complicated by the specific subject field which can pose plenty of hurdles extremely insurmountable or be dealt with successfully by a translator.

In consideration of the ever increasing industrial products in today's world whose operation or handling is to a greater degree beyond the knowledge and skills of an average person, technical translation has gained an unprecedented supremacy. This is largely because of the sole fact that products are only accessible through users' guide which is written in the producer's native tongue.



In view of this profuse production accompanied by brochures written by experts in different scientific fields in a language which is hardly accessible to non-native speakers as it is fully packed with abundant technical terms, the need for technical translators has increased quite considerably. This paper will examine the anticipated problems to be faced by technical translators upon handling the translation of users guide and will consequently try to suggest the likely solutions.

#### **The Aim of Technical Translation**

It would be unfair to consider the sole objective or aim of the technical translation is the transmission of technical information. Despite the fact that for example users' guide is intended to be translated to serve one specific end through passing technical information precisely to help the users getting about using their devices successfully, there is still more to technical translation than just passing of technical information. What poses great challenges to technical communicators is whether or not that all the required information has been conveyed in a way that allows readers to access information easily, appropriately and efficiently. Undeniably, this is the same situation with technical writing which forms the basis for technical translation, being the main fountain that rifts technical translation with the nuts and bolts or most basic constituents. Hence, the two disciplines can be viewed as so strongly interdependent activities.

Therefore, technical translation is enormously believed to be communicative activity as any type of translation. This postulation is augmented in the following quote from Sykes (1991:1):

Technical translation is a service industry. The value of the service provided by the

translator, depends here, primarily not on the efforts which went into its preparation, its literary merits, its quality of presentation, production and reproduction, etc but on its gap-building capacity, its message and content, its scientific or commercial utility to the requester.

Consequently, technical translation is first and last a communicative service not by replicating the basic source of information. It is indeed communicative service given in response to a certain demand for technical information taking into account fundamental issues linked with intelligibility, clarity and speed of delivery.

To accomplish the job of being communicative, technical translation is conducted by numerous individuals namely the author, the translator and the reader.

In fact the process of communicative act is carried out by multiple agents. However, the major parts are assumed by a variety of stakeholders. Being well aware of the fact that technical documentation is not conducted in response to a particular requirement or intention on the part of the author, Nord (1991:24ff) distinguishes between the sender and the text producer (author). Taking a user's guide as an example, the sender would then is the software company that builds up and circulates the software. To further guarantee the transfer of the product to external potential users or purchasers, the company establishes a specific unit with competent personnel to take care of the technical or scientific writing to produce comprehensive and intelligible user's guide with the intention of helping users to operate their software. Accordingly, the text producer is an employee hired by the company that produces the software.

Nord (1997:21) further adds a very important point in relation to the scientific text. He stated that unless the source text was originally written with the intention to be translated, this lead to unpredictable hurdles for the translator. This position in itself creates some problems in the prospect of the current international situation with multilingual realities where several translations are required not to mention the question of the diverse legislations. Again, sometimes the translator may call for the direct intervention of the author of technical document for clarification of certain points. This may turn out to be impossible in itself as most of the translators hired by these companies as freelancers as well as the text writers. It follows from that stakeholders of technical translators are not only the scientific text writer, the translator and the reader.

#### **Suggested Stakeholders**

In view of this complicated reality of translating a technical document namely users' guide the following remedial steps may be taken:

- Document Initiator
- Writer/Text Producer
- Translation Initiator
- Translator
- User

The document initiator is person responsible for producing the original source language. In the case of product documentation, this is consistently the company producing the product. The Document Initiator's takes as their basic objective to get hold of documentation that will help users learn how to use the product effectively, safely and precisely enough. This can be realized by a true intention to help users, to provide a "complete" product, to improve the company's

competitiveness and reputation, to reduce calls to technical support or simply to comply with legal requirements.

The Translation Initiator is the person or entity responsible for starting the translation process. This is generally the Document Initiator but it is possible that the Translation Initiator is a different department or manager within the same company. The motivations for the translation process are similar to those for the document production process, i.e. a desire to enter into new markets where the documents serve not only as a way of training customers but also as an "ambassador" for the company and its products. Translations may be motivated by a need to comply with legal requirements such as the Council of the European Union Resolution C411 which states that "customers are entitled to manuals produced in their own language" irrespective of where the product was made (Council of the European Union 1998:3). The Translation Initiator sends the document and some form of instructions to the Translator.

In spite of the fact the translator ranks second in the hierarchy, this does not always hold true. Texts quite often are dispatched to agencies or localization vendors who will in turn send the document to a translator. However, this step though can be helpful to the translator, it creates still some problems for the translation initiation or even the translator simply because the vendor's remarks might not be taken as seriously as they ought or expected to be. Certainly, this depends on the systems and processes the agency has in place as well as on the personalities and communication skills of the project managers and administrators involved.



Administrators are so concerned to send the texts to agencies before it is finally sent to the translator otherwise they will have the reputation of their company at stake were the translator failed to convey the desire effect. In fact they will have to be quite certain that translator have had enough information that will help them produce a thorough rendering. On the other hand, certain agencies have robust processes in place to ensure that translators are given detailed information such as whether the text is for publication or for information purposes; whether terminology or style specialized guides need to be used and so on. However, for the sake of clarity and simplicity, we will assume that the instructions from the Translation Initiator have been conveyed perfectly to the Translator and that there is no cause to suspect that ambiguities have been introduced or instructions lost.

Translators are often recruited by companies in order to carry out the work of translation that is working in-house for the vendors. They can also be freelancers. Whether this or that, they are responsible for doing the job of translation, producing a replica of the original text in foreign languages. However, this work though undergoes a number of steps prior to translation proper, there are still some problems. Translation initiators often do not present translators with the information necessary for precise rendering on the pretext that this is part and parcel of their profession. They may argue that a client would provide a mechanic with an exhaustive checklist upon servicing the car. At best, many clients will simply specify that the document is for publication purposes, should use company's own terminology and should "read well". In this

regard, in-house and staff translators fare a little better than their freelance counterparts. Holtz Mattarni (1984:111) argues that the crucial factor in the assessment of the whole process is taken or made by the *User*. As regards the quality of translation, there are two types of users: the source language user and the target language user. Though the two users are apparently different they still have some common certain points in common or have certain macro-aims in that they need to learn how to use the software. This very essential goal can be achieved in diverse ways. Both the technical writer and the technical translator share common purposes as they are both so concerned to know what their users need to know. Again, In order to translate effectively, a translator needs to fully understand and know the users (Reiss & Vermeer 1984: 101).

The most important constituent of the whole paradigm is the *user* for whom the software has been produced and the technical translation was conducted. The needs of the user has been so controversial and provoked much argument amongst translation theorists. Some have conclude that the target language reader may need to have an understanding and hence an appreciation of the culture of the source text or even the source language. Others believe that the target reader seeks to attain the very same level of understanding of the users' guide as that of the native speaker Some argue that the target language reader may seek to have an insight sociocultural realities of the source language. Despite all these varied views one sole fact remains is that the target language reader principally hopes for a better understanding of the manual to help them set their software into operation quite effectively.



Again, most target language users view the users' guide as an original text not a translation unless otherwise this is proved untrue. This belief is bound to change quite drastically having discovered for one reason or other that the text is sheer a translation to the effect that the reader will lose much trust in the text. Moreover, the translation should function as an original text or else the technical translation may distract readers from their primary concern that is finding the information they need to use the manual.

### **Translator's Role**

With respect to its central task in the whole translation process, the translator's position is, justifiably more complex than the other stakeholders. Such being the case this calls for closer study. The translator's job as was already mentioned is to communicate information through the text. This intention takes precedence over any other consideration in relation to translation the user's guide. As Robinson (2003:142) maintains, "translators don't translate words they translate what people do with words".

Undoubtedly, the translator relies on varied external sources, not just the source text, to produce a target text that lives up to the reader's expectation of providing the required communicative function. Hence, in this connection, the translator acts as a cross-cultural agent. This is not to decry the translations' role who are already dissatisfied with the job and aspire for a more powerful position as that of a technical writer. Quite the opposite in fact! The sign of a good technical translator is the ability to do some of the things a technical writer does to make sure that the person who ultimately reads the text can do so with relative ease and that whatever tasks the reader needs to perform, are easier having read the text.

In point of fact, the definite job of the translator is still uncertain to a greater degree and hardly understood. As Mossop (1998:40) argues that "no systematic observations, or even self-descriptions, of how professional translators proceed when they translate". We can argue about what is actually involved in translating a text and how it is done by a translator but in terms of what a translator actually does and when, we are still guessing to a large extent.

### **Adjusting Clarity of Translation**

There are certain ways of adjusting the clarity of the technical translation mainly through adding or removing. Gopferich (1993:52) says that it is quite indispensable, now and again to add additional information to a text to confirm that the information and text are as utilizable and effective as possible. Similarly, some information needs to be deleted, condensed or made implicit because it is of less importance for the target audience, because it may not apply to the target audience's particular situation or because it may result in confusion. Put simply, sometimes information must be sacrificed in order to protect the integrity of the communication. Pinchuck (1977:206-207; 210-211) asserts that a text should not exceed beyond giving the desired information for the readers suiting their very needs. Providing the readers with more information than is desired is as much the same as giving less information than is needed. They lead to frustration, inconvenience and the exertion of very strenuous efforts on the part of the readers in order to get about the text. Practically, try as far as possible not furnish readers with information that sound less important at a given time.





However, this situation can be exploited in a harmful way whether deliberately or by mistake. O'Neill (1998:76) argues those doctors who have picked up translation; counting on their much subject knowledge, tend to summaries texts to improve them. Conversely, unless this operation is what the readers need, this can turn out to be very problematic and hence the translators have actually committed very weighty and unpardonable mistakes.

Again, this interference with the translated technical text is also noted when editing and reformulating a poorly formulated text. However, the acceptable type of intervention is the one that improves without tampering with the content of text making further complex. Sykes (1971:6) the translator should "not feel compelled to perpetuate the more sinful omissions or commissions of his [sic] author". Sykes goes on to advice technical translators to "look out for unnecessary verbiage (including padding)" as it allows the translator to "rephrase rather than paraphrase".

#### **Material**

The source text important safety measures in three users' guide namely a boiling kettle, a washing machine and a hairdryer. The instructions have been taken inside the classroom as cutouts, photocopied and distributed to the students to translate them into Arabic. What is interesting in study is the linguistic features of interest in the current study are the varied aspects of technical terms with which the three texts are laden. The aim is to find out to what extent the students have managed to handle these terms by providing the right equivalent in Arabic.

The translated text is intended to be used as safety instructions for a users' guide. The translators (here the students) have to render these texts in a way as to cater for the essential information required by the users in order to exercise the utmost precaution to avoid electric shock.

#### **Translation Theory**

In the present study Nida's equivalence and Vinay and equivalent Darbelnet's direct and oblique translation shall be considered as the theoretical basis. Nida applied a relatively scientific approach to his translation attempts through the systematization of the techniques involved. In order to establish his theory about equivalence and equivalent effect Nida drew on borrowing and already existing concepts particularly those of Noam Chomsky' models for sentence analysis. The main reason for his attempts is to detach the concept of meaning from a closely connected lexical meaning to a moderately functional approach where meaning is to a great extent attained through extra-linguistic factors such as context and culture. The most appropriate models to be adhered to in the present research are those of the hierarchical structure and componential analysis. According to Munday (2001, p.38) these two models are potentially strong enough to help in establishing the relationship between the terms and comparisons of the languages in question. The following is an illustration of the involved model:

- Hierarchical structure make a distinction between the terms as with respect to their position in a hierarchy such as water, ocean, lake
- **Componential** analysis, on the other hand, handles the terms as regards their position to time or place :



wash dry iron Nida further introduced two kinds of equivalence, namely: Formal equivalence addressing the form and content of the word, and functional equivalence which views how the message is received in the target language.

#### **Vinay and Dabelnet's Direct and Oblique Models**

According Munday two more models of translations are introduced by Vinay and Darbelnet those of direct translation and oblique translation.

The two strategies are carefully developed into seven independent procedures of which the direct translation model can be viewed as:

- **Borrowing** – the word from the source text is directly borrowed or taken into the target text
- **Calque** which is similar to borrowing except that a whole structure or a sentence is transferred to the target language
- **Literal translation**: this type of translation is resorted to where there is great structural similarity.

Direct translation may frequently prove impossible due to the fact that the precise meaning is difficult to be conveyed or when simply the structure of the target language does not allow the transfer of meaning the following four strategies are resorted to:

1. **Transposition**- A change in the grammar from SL to TL (singular to plural; position of the adjective, changing the world class or part of or recategorization speech)
2. **Modulation**-Variation through change of viewpoint, of perspective, and very often of category of thought (Vinay and Darbelnet) introducing a clarification with respect to the original formulation.
3. **Equivalence**-(Vinay and Darbelnet)= To substitute a TL statement for a SL statement which accounts for the same situation, even

though there is no formal or semantic correspondence. To render a set phrase [idiom, cliché, “locución”] from the SL with a set phrase from the TL which expresses the same idea, although in a different way (Delisle).

**4.Adaptation**-(Vinay and Darbelnet) (CULTURAL EQUIVALENT for Newmark)= To replace a situation of the SL by an analogous situation of the TL (when communicative situations are difficult to understand in the culture of TL, when the situation of the SL does not exist in the TL - a cultural gap- and therefore another equivalent situation has to be created)

#### **Terminology**

The outburst in scientific research led to the appearance of completely novel disciplines which are in turn brought about wide range of diverse concepts that need to be classified and assigned names. This has given birth to a new branch of linguistics namely Language for Specific purposes (LSP). LSP is the language or jargon used by professionals to communicate in varied domains of science and disciplines. Ingo (2007:83) demonstrates that LSP as far as technology is concerned has divided quite remarkably into various *technolects* covering a wide range of specific areas including economy, law, computer science and electronics. Ingo (2007:101) asserts that in LSP a term is used to refer to a word or a concept that is not part of the language in question such as a name of a new medicine, machine or any unknown phenomenon not known before. Cabre (2009, p.64-65) stated that the issue of terminology can be viewed as having two distinct manifestations or levels: The supreme or higher level is the one in which communication occurs between experts, whereas the lower level is when the information is passed to the ordinary or average persons.

In the present paper special attention will be given to the *general technical terms* as the most suitable type of terminology in the present situation. The general technical terms are fixed set of words used when communicating information regarding a technical subject mostly by non-specialists. Terms such as *safety measures, electrical equipment, appliance or cable* are considered as general terms as long as they are part of the word-power of several students of translation. They are also common to a wide range of subject field and learners

are expected to have come across in the course of their general study.

In order to get about their translation students in this study are asked to use standardized technical dictionaries. Some of these dictionaries are stored into the students' mobile phones. The texts they are going to consider in this study are English texts taken from three Users' Guide, namely a hairdryer, a washing machine and a boiling kettle. Students will handle the parts associated with the safety measures as these are somewhat less technical. The texts are as follows:

### Washing Machine

1. If the washing machine has to be left inactive for a long time it is advisable to disconnect electricity and leave the door partly open to avoid unpleasant smells.

This last point is valid even during periods of normal use.

The manufacturer will not accept responsibility for damages caused by faulty installation of the machine that should always be done according to the instruction in this user's guide.

غسالة

1. إذا كان يتعين ترك الغسالة غير نشطة لفترة طويلة ، فمن المستحسن فصل الكهرباء وترك

الباب مفتوحاً جزئياً لتجنب الروائح الكريهة.

هذه النقطة الأخيرة صالحة حتى خلال فترات الاستخدام العادي.

لن تتحمل الجهة المصنعة المسؤولية عن الأضرار الناجمة عن التثبيت الخاطئ للجهاز الذي

يجب القيام به دائماً وفقاً للتعليمات الواردة في دليل المستخدم.



### Boiling Kettle

1. Children do not realize the dangers associated with electrical appliances. Never allow children to work with electrical equipment without supervision.
2. An appliance should never be left unattended when plugged in.
3. In the case of obvious damage to the appliance or the cable consult an electrician.
4. Repairs to electrical equipment may only be carried out by properly trained person. Repairs which are improperly carried out can result in considerable danger for user.
5. Use only a dry anti-slip level surface.
6. Only suitable for water-never put other liquids in the

jug kettle. غلاية

1. الأطفال لا يدركون المخاطر المرتبطة بالأجهزة الكهربائية.
2. لا تسمح أبداً للأطفال بالعمل باستخدام المعدات الكهربائية دون إشراف.
3. لا ينبغي أبداً ترك الجهاز بدون مراقبة عند توصيله.
4. في حالة حدوث تلف واضح للجهاز أو الكابل ، استشر كهربائياً.
5. الإصلاحات التي لا يجوز تنفيذ إصلاح المعدات الكهربائية إلا من قبل شخص مدرب بشكل صحيح .يتم تنفيذها بشكل غير صحيح يمكن أن يؤدي إلى خطر كبير للمستخدم .استخدم فقط سطح جاف مضاد للانزلاق.
6. مناسب فقط للسوائل الأخرى التي لا تضع الماء في غلاية إبريق.

### Hairdryer

1. Never operate this appliance if it has been dropped or damaged
2. This hair dryer is provided with an appliance Leakage Circuit Interrupter (ALCI)
3. The ALCI safety device is equipped with a test button so that its operation can be checked
4. These limits are designed to provide reasonable protection against harmful interference into a residential installation.

مجفف الشعر

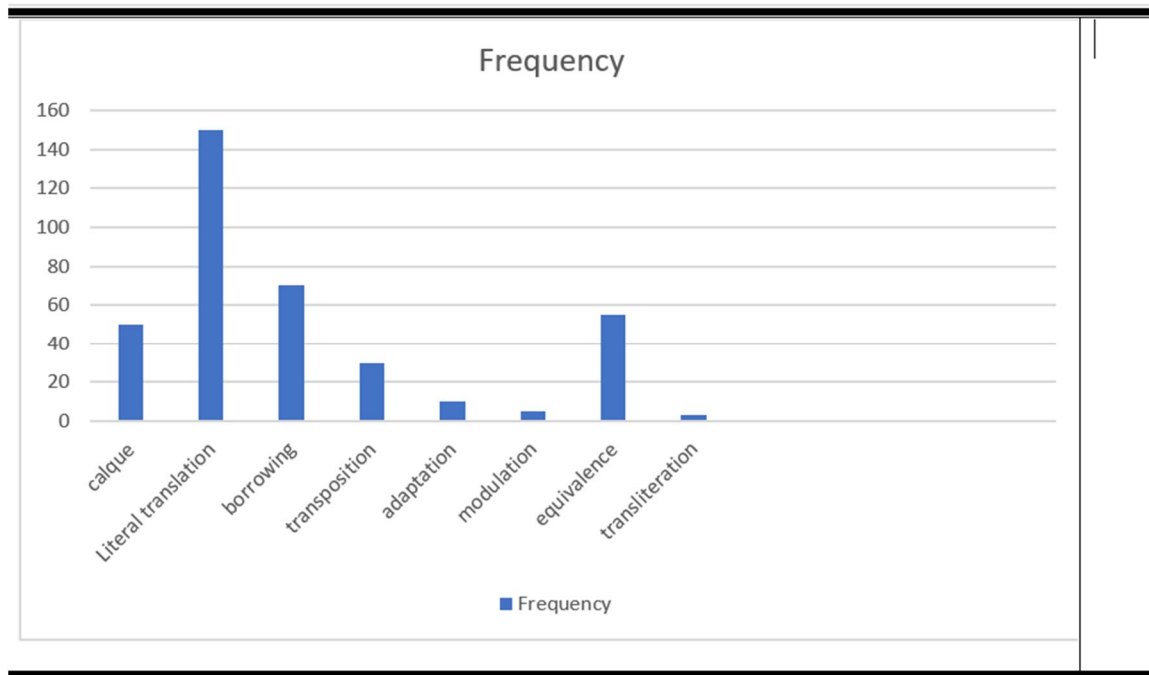
1. لا تقم أبداً بتشغيل هذا الجهاز إذا تم إسقاطه أو تلفه
2. يتم توفير مجفف الشعر هذا مع قاطع دائرة تسرب الأجهزة (ALCI)
3. جهاز السلامة ALCI مجهز بزر اختبار حتى يمكن التحقق من تشغيله
4. تم تصميم هذه الحدود لتوفير حماية معقولة ضد التداخل الضار في المنشآت السكنية.

### Analysis

As it is apparent from the above translation, a number of techniques have been employed by the students as an attempt to render the safety measures that are heavily laden with technical terms.

Some of the most used strategies are those of calque, literal translation, and borrowing. There are also many instances of transposition, adaptation, modulation and equivalence.

Translation Strategies	Frequency
calque	50
Literal translation	150
borrowing	70
transposition	30
adaptation	10
modulation	5
equivalence	55
transliteration	3





### Bibliography

- Alcaraz, E. and B. Hughes (2002) *Legal Translation Explained*. Manchester: St. Jerome Publishing
- Amman, M. and H.J. Vermeer (1990) *Entwurf eines Curriculums für einen Studiumgang Translatologie und Translatorik*. Heidelberg: Institut für Übersetzen und Dolmetschen
- Anderson, J.R. (2000) *Cognitive Psychology and its Implications*. 5<sup>th</sup> edition. New York, USA: Worth Publishers
- Apple Computer Inc. (1978) *Apple II BASIC Programming Manual, Informative and Entertaining Reading for Novice and Professional Alike*. Press release dated 8<sup>th</sup> June, 1978 [online] Available from: <http://www-sul.stanford.edu/mac/primary/docs/pr4.html> [Accessed: 16/04/02]
- Asch, S.E. (1956) Studies of Independence and Conformity: A Minority of One against a Unanimous Majority. In: *Psychological Monographs*, 70, pp. 1-70
- Austin, M. and R.F. Dodd (1985) *The ISTC Handbook of Technical Writing and Publication Techniques: A Practical Guide for Managers, Engineers, Scientists and Technical Publications Staff*. London, UK: William Heinemann Ltd.
- Bannon, L. (1991) From Human Factors to Human Actors The Role of Psychology and Human-Computer Interaction Studies in Systems Design. In: J. Greenbaum and M. Kyng (eds) *Design at work: Cooperative Design of Computer Systems*. Hillsdale, USA: Lawrence Erlbaum Associates, pp. 25-44.
- Bødker, S. (1991) *Through the interface: A human activity approach to user interface design*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Borowick, J.N. (1996) *Technical Communication and its Applications*. New Jersey, USA: Prentice-Hall
- Broadbent, D. (1958) *Perception and Communication*. London, UK: Pergamon Press
- Brockman, R.J. (1990) *Writing Better Computer User Documentation: From Paper to Hypertext – Version 2.0*. New York, USA: John Wiley & Sons
- Buchanan, R.A. (1992) *Textbase Technology: Writing with Reusable Text*. In: P. O' Brian Holt and N. Williams (eds) *Computers and Writing: State of the Art*. Oxford: Intellect Books
- Cabré, M. Teresa. 1999. *Terminology*. Philadelphia, PA, USA: John Benjamins Publishing Company. Elibrary. Print.
- Cao, Deborah. 2007. *Translating Law*. Clevedon, GBR: Multilingual Matters Limited. Elibrary. Print
- D'Agenais, J. and J. Carruthers (1985) *Creating Effective Manuals*. Cincinnati, USA: South Western Publishing Co
- Deutsch, M. and H.B. Gerard (1955) A Study of Normative and Informative Social Influences on Individual Judgements. In: *Journal of Abnormal and Social Psychology*, 51, pp. 629-636
- Dillon, A. (1992) Reading from paper versus screens: A critical review of the empirical literature. In: *Ergonomics*, 35(10), pp. 1297-1326
- Dix, A. (1998) *Human-computer Interaction*. 2<sup>nd</sup> Edition. New Jersey, USA: Prentice Hall
- Downton, A. (1991) *Engineering the human-computer interface*, London; New York, USA: McGraw-Hill Book Co



Ellis, H.C. and R.R. Hunt (1993) *Fundamentals of Cognitive Psychology*. 5<sup>th</sup> edition. Dubuque, Iowa: WCB Brown & Benchmark Publishers  
EN 292-2:1991 - Safety of machinery. Basic concepts, general principles for de-sign. ISBN: 0580203646

Fabrizio, R., L. Kaplan and G. Teal (1967) Readability as a function of the straightness of right-handed margins. In: *Journal of Typographic Research*, 1, pp. 90-95

Faulkner, C. (1998) *The Essence of Human-Computer Interaction*. London, UK and New York, USA: Prentice Hall

Gavin, H. (1998) *The Essence of Cognitive Psychology*. Hertfordshire, UK: Prentice Hall Europe

Gerzymisch-Arbogast, H. (1993) Contrastive Scientific and Technical Register as a Translation Problem in Scientific & Technical Translation. In: S.E. Wright (ed) *Scientific and Technical Translation: American Translators' Association Scholarly Monograph Series, Vol. VI* 1993. Amsterdam, The Netherlands and Philadelphia, USA: John Benjamins

Halverson, S. (1997) The Concept of Equivalence in Translation Studies: Much Ado About Something. In: *Target*, 9(2), pp. 207-233

Harrison, S. and P. Mancey (1998) Optimal amount of time for obtaining accurate usability-test results. In: *ACM Proceedings of the 16th annual international conference on Computer documentation*. New York, USA: ACM Press. pp. 173-179

ISO 9241-11:1998 Ergonomic requirements for office work with visual display terminals (VDTs) – Part 11: Guidance on usability. Geneva:

International Organization for Standardization

Jung, M. and O. Becker (2003) *Die Bedienungsanleitung - kundenfreundlich und rechtssicher*. cognitas - Gesellschaft für Technik-Dokumentation: Paderborn [online] Available from: [http://www.cognitas.de/pdf/tuev\\_cognita\\_s.pdf](http://www.cognitas.de/pdf/tuev_cognita_s.pdf). [Accessed: 21/03/04]

Kade, O. (ed.) (1977) *Vermittelte Kommunikation, Sprachmittlung, Translation*. Leipzig: VEB Verlag Enzyklopädie

Kalat, J.W. (2004) *Biological Psychology*. 8<sup>th</sup> Edition/International Student Edition. London: Thomson Wadsworth

Kellogg, R.T. (1988) Attentional overload and writing performance: effects of rough draft and outline strategies In: *Journal of Experimental Psychology: Learning, Memory, and Cognition*. Vol. 14, No. 2, pp. 355-6

Landauer, T.K. (1995) *The Trouble with Computers: Usefulness, Usability and Productivity*. Massachusetts, USA/London, UK: The MIT Press

Larson, M. (1987) Establishing project-specific criteria for acceptability of translations. In: Marilyn Gaddis Rose (ed.), *Translation excellence: assessment, achievement, maintenance*. American Translators Association Scholarly Monographs, pp. 69-76. Binghamton, NY: University Center, State University of New York.

Mehlenbacher, B. (1993) Software usability: choosing appropriate methods for evaluating online systems and documentation. In: *ACM Proceedings of the 11th annual international conference on Systems documentation*. New York, USA: ACM Press, pp. 209-222



- Microsoft Press (1998) *The Microsoft Manual of Style for Technical Publications - Version 3.0*. [CD-ROM] Redmond, Washington: Microsoft Press
- Miller, G.A. (1956). The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information. In: *Psychological Review*, 63, pp. 81-97
- Molich, R. and J. Nielsen (1990) Heuristic evaluation of user interfaces. In: *Proceedings ACM CHI'90 Conference on Human Factors and Computing Systems*. Seattle, USA: ACM Press, pp. 249-256
- Mossop, B. (1998) The Workplace Procedures of Professional Translators. In: Andrew Chesterman (ed.) *Translation in Context: Selected Contributions from the EST Congress Granada 1998*. Amsterdam/Philadelphia: Benjamins, pp. 39-48
- Newmark, P. (1990) *About Translation*. Clevedon: Multilingual Matters
- Newmark, P. (1993) *Paragraphs on Translation*. Clevedon: Multilingual Matters
- Nida, E. (1964) Toward a Science of Translating: with special reference to principles and procedures involved in Bible translating. Leiden: E. J. Brill
- Piaget, J. and B. Inhelder (1969) *The Psychology of the Child*. London, UK: Routledge & Kegan Paul
- Pinchuck, I. (1955) *Scientific and Technical Translation*. London: André Deutsch
- Power, R., D. Scott and A. Hartley (2003) Multilingual Generation of Controlled Languages. In: *Proceedings of EAMT-CLAW 03: Controlled Language Translation*. Dublin, 15<sup>th</sup>-17<sup>th</sup> May, 2003. Geneva: EAMT, pp. 115-123
- Quesenbery, W. (2001) *What Does Usability Mean: Looking Beyond "Ease of Use"*. [online] Available from: <http://www.cognetics.com/presentations/whitney/more-than-ease-of-use.html> [Accessed: 05/07/02]
- Ramey, J. (1989) Escher Effects in Online Text. In: E. Barrett(ed), *The Society of Text: Hypertext, Hypermedia, and the Social Construction of Information*. Massachusetts, USA and London, UK: The MIT Press, pp. 388-402
- Raskin, J. (2000) *The Humane Interface*. New York: Addison-Wesley
- Redish, J.C. (1988) Reading to learn to do. In: *Technical Writing Teacher*, Fall, 15 (3), 223-233
- Reiss, K. and H.J. Vermeer (1984) *Grundlegung einer allgemeinen Translationslehre*. Tübingen: Niemeyer
- Steiner, G. (1975) *After Babel: Aspects of Language and Translation*. Oxford and New York: Oxford University Press
- Sullivan, M. and A. Chapanis (1983) "Human Factoring a Text Editor Manual". In: *Behaviour and Information Technology*, 2, 2, pp. 113-125
- Sykes, J.B. (ed.) (1971) *Technical Translator's Manual*. London: Aslib
- Treisman, A. (1964) Strategies and models of selective attention. In: *Psychological Review*. 78, pp. 282-299
- Van Laan, K. and C. Julian (2001) *The Complete Idiot's Guide to Technical Writing*. Indianapolis, USA: Alpha Books
- Vermeer, H.J. (1987b) Literarische Übersetzung als Versuch interkultureller Kommunikation. In: Alois Wierlacher (ed.) *Perspektiven und Verfahren interkultureller Germanistik*. Iudicium: Munich, pp. 541-549





**Sudan University of Science and Technology**  
**Deanship of Scientific Research**  
**Journal of Linguistic and Literary Studies**



Vermeer, H.J. (1989) Skopos and Commission in Translational Action. In: A. Chesterman (ed.) *Readings in Translation*. Helsinki: Oy Finn Lectura Ab, pp. 173-187

Weiss, E.H. (1985) *How to Write a Usable User Manual*. Philadelphia, USA: ISI Press

Wertheimer, M. (1959) *Productive Thinking*. New York, USA: Harper & Row

White, F.D. (1996) *Communicating Technology: Dynamic Processes and Models for Writers*. New York, USA: HarperCollins College Publishers

Witkin, H.A., P.T. Oltman, E. Raskin and S.A. Karp (1971) *Group Embedded Figures Test Manual*. Palo Alto: Consulting Psychologists Press

Wixon, D. and C. Wilson (1997) The usability engineering framework for product design and evaluation. In: M. Helander, T. K. Landauer, P. Prabhu (eds) *Handbook of Human-Computer Interaction*. 2<sup>nd</sup> edition. The Netherlands: Elsevier Science

Zirinsky, M. (1987) Usability Testing of Computer Documentation. In: *Proceedings of the 5th annual international conference on Systems documentation*. New York, USA: ACM Press, pp. 61-65