

Can we make do with Near Human Quality?

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This paper discusses the acceptability of Near Human Quality machine translation. It defines Near Human Quality and provides examples of cases where Near Human Quality machine translation is acceptable. The paper assumes that there are programs capable of generating Near Human Quality output after some customization.

The purpose of this paper is to discuss the acceptability of Near Human Quality ("NHQ") machine translation. For the purpose of this discussion, "Near Human Quality MT" is computer-generated translation that is:

- grammatically correct
- technically accurate
- without major semantic ambiguities

but may be:

- monotonous
- stylistically clumsy
- insensitive to associative language

(like not a few human translations!)

Figure 1 shows an example of Near Human Quality MT generated by Hook & Hatton's Dutch-English translation program. Most of the high-end commercial translation programs should be capable of producing similar output - certainly after some customization.

Card readers, both for the contact smartcard applications and for the contactless applications, with the exception of the TBS-project, will be acquired within the appropriate projects of the appropriate application. Numbers and functional possibilities of these card readers will be established in due course in the appropriate projects. Both proposed card readers and used card technology will be assessed according to "commercial off the shelf" products. Suppliers should be able to demonstrate "commercial off the shelf" availability of their products. The supplier is requested to indicate in which way these requirements are complied with by the manufacturer.

Figure 1

Typical of computer translations from many languages is insensitivity to the differences between languages in the use of the definite article. In the first sentence, omission of the first and second "the" would make the sentence much more natural and fluent. Another typical shortcoming in MT systems is the failure to convert "voice" to the most familiar form in the target language. The last sentence would read much more easily if it were recast as: "The supplier is requested to indicate how the manufacturer complies with these requirements." Some systems can do this to a limited extent.

However, neither the excessive use of the definite article nor the failure to switch from the passive to the active voice render the computer-generated English text unusable. To the engineer reading this paragraph the technical author's meaning is perfectly clear. The supplier knows that he has to demonstrate the "commercial off the shelf" availability of his products and that he has to indicate how the manufacturer meets the requirements.

"Usability" is a key concept in any discussion of computer-generated translation. The correlative of "usability" is "intended purpose". It is important to all translators to know why a document needs to be translated. In machine translation this knowledge is critical. The MT operator needs to know not only how the computer-translated document is going to be used, but also by whom it will be post-edited, if it is going to be post-edited at all. A useful basis for establishing the intended purpose of a document is the distinction between information translations and what might be termed commitment translations.

Examples of documents commonly translated for information purposes are: invitations to tender, press cuttings, articles in scientific journals, technical documents of competitors, draft specifications and standards, in-house notices and bulletins. Commitment translations, on the other hand, are required for contracts and other legally binding documents, medical reports, equipment operating instructions, product safety information, final versions of standards and specifications to name but a few types of documents.

With some customization, most MT systems can usually generate translations that are acceptable for some information purposes. Human translators would like to pretend that they can't; but the reality is that they can. In fact, there are some purposes for which Near Human Quality is probably more than what is needed. A typical scenario where we might find an MT setup in use would be an international press cuttings agency. A few years ago an employee's job might involve scanning newspapers in three or four languages and translating articles about specific clients' operations or products. Nowadays both the newspaper scanning and the translation can be done by a computer, particularly as a growing number of international publications is published electronically. In all likelihood, such clients' require a translation that will give them a rough idea of what is being written about their products or services. Figure 2 provides an example of a translation generated by Globalink's German-English machine translation service offered via the Internet. The text was translated "blind" by the computer, i.e. there was no opportunity to input specialist terms in advance. Its probably represents the lowest level of acceptability. However, this very basic translation would probably be useful in certain contexts, for instance where a reader with no German at all simply wanted to know whether the text is about photography or nuclear fission. Primitive though it is, this rough translation makes the difference between some knowledge of the subject matter and total ignorance. To such a reader, any advance on this basic level would be an added bonus.

TEXT A

This paper reports on the performance and crystallisation morphology of the polyphenyl quinoxalines and Nylon-6 molecular composite material. The molecular complex formed by polyphenyl quinoxalines (PPQ) and Nylon-6 can bring about great changes in the wear resistance, hardness, heat resistance and the crystallisation morphology of the Nylon-6 substrate. The results of research in morphology and crystallisation dynamics show that PPQ plays a crystallisation-inducing role in the Nylon-6 substrate. Our results have not only provided a practical method for improving the properties of cast Nylon-6, but have also provided a possible new use for the molecular combination.

TEXT B

In the known method the reaction is carried out in a homogenous solution of benzaldehyde in ethanol and a Raney nickel catalyst is used. By varying the benzaldehyde-ammonia ratio used, a maximum of 81 mol-% dibenzylamine is obtained, calculated with respect to the amount of converted benzaldehyde. The disadvantage of a Raney nickel catalyst is that even with relatively large amounts of catalyst relatively long reaction times are required to achieve satisfactory conversion. Furthermore, this catalyst is toxic and pyrophoric, so that it is less suitable for large-scale application.

Figure 2 — Examples of computer and human translations of different texts

Of course, the term Near Human Quality refers to the quality of translation achieved by a competent translator, translating into his or her mother tongue, in a familiar subject. There are, however, cases where a computer program can generate a better translation than human translators working out of their mother tongue or in fields of which they have little knowledge. In Figure 3, it is difficult at first glance to establish that Text B is an unrevised computer translation, whilst Text A is a supposedly revised human translation (in fact, by a subject specialist working out of his mother tongue). Neither translation would be useless to a client who simply wanted to know - at the most basic level - what those black marks on that sheet of paper meant. In fact, both texts correctly convey a considerable amount of information about the systems or processes being described. The translation of which Text B forms part, the computer-generated translation, was required for information purposes only and was found more than adequate by the client, who paid one-quarter of what he would have paid for a human translation. Text A, on the other hand, was required for publication in a scientific journal; on account of glaring human errors not shown in this figure, the translation was actually rejected by the end user who refused to pay for it!

GTS VIA THE INTERNET

Die so erstellte Diaschau kann auf Diskette oder Festplatte abgespeichert, in den Arbeitsspeicher des Projektors bzw. in das Modul übertagen oder über einen Drucker ausgegeben werden. andererseits ist es möglich, Diaschauen aus dem arbeitsspeicher oder Modul in den rechner zu übernehmen, zu modifizieren und auf Diskette zu speichern. Nahezu unbegrenzte Möglichkeiten ergeben sich durch die direkte ansteuerbarkeit der einzelnen Motoren und Projektionslampen.

The so prepared slide show can stored on diskette or hard disk, in the @@arbeitsspeicher will given out the @@Projektors and/or in the module @@u"bertagen or over a printer, on the other hand is it possible, to take over slide shows from the @@arbeitsspeicher or module in the @@rechner, to modify and to store on diskette. Next to unlimited possibilities yield through the direct @@ansteuerbarkeit the individual motor and projection lamps.

Fig. 3 - Text translated "blind" by Globalink via the Internet

Every document to be translated has to be handled on the basis of its intended purpose and the amount the user is willing to pay for the translation. This applies to translations done completely by human translators as well as to translations partly or completely done by a computer. Figure 4 contains two translations of the same text. The first was generated by Hook & Hatton's Dutch-English translation system; the second was produced by the translation department of a multina-

tional corporation. The translation was published in the glossy monthly magazine produced by the corporation's public relations department. The purpose of the article was not simply to inform readers about one of the corporation's recent acquisitions; like every other article in the monthly magazine, it also had to help to create a good rapport with the target readership and reinforce a corporate image. The translation therefore had to be written in a style with which the target readership would immediately identify.

In this context, it is useful to examine the similarities and differences between the two translations in Figure 4. The computer has translated the title literally; the human translator has introduced the phrase "from the banks of", probably mindful of the fact that the magazine has a non-Dutch readership that could not be assumed to know that the Vecht is a river. Both computer and human translator have translated the sub-title literally. The computer has translated the first sentence literally (even to the point of rendering "Chemie" as "chemistry", unaware that it is part of the company name). The human translator clearly felt that the article would flow better by running sentences one and two together. He also changed "goes back to" to "started in" and written "a small chemicals operation" instead of a "small chemical activity". The fourth sentence is again translated literally by the computer, and with some freedom by the human translator.

COMPUTER TRANSLATION:

Call on the Vecht

DSM Andeno Maarssen: tradition and ambition

The history of the location in Maarssen (formerly ACF chemistry) goes back to 1895. In that year a small chemical activity was started locally. In 1902 the first quinine production followed.

Nearly a century later quinine is still being produced. It is extracted from the bark of the cinchona. Plantations for this evergreen plant are to be found in Indonesia, Africa, South-East Asia and South America. DSM Andeno Maarssen extracts from the bark the pure quinine and also produces (in a chemical process) quinidine.

HUMAN TRANSLATION:

Call from the banks of the Vecht

DSM Andeno Maarssen: tradition and ambition

The history of the Maarssen complex (formerly ACF Chemie) started in the year 1895, when a small chemicals operation was started at this site. This was followed in 1902 by the start of quinine production.

Now, nearly a century later, the Maarssen facilities still produce quinine, which is extracted from cinchona bark. The evergreen cinchona trees are grown in plantations in Indonesia, Africa, South-east Asia and South America. DSM Andeno Maarssen extracts from cinchona bark pure quinine and, via a chemical route, also produces quinidine.

Fig. 4 — Computer and human translations of the same text

Nothing translated by the computer so far is incorrect. In fact, a junior translator or even a more experienced translator working against the clock might well produce an English paragraph not unlike the computer's. And if the translation were required merely for information purposes, that translation - the computer translation or an equivalent human translation - would be acceptable.

However, the translation has a broader purpose than the transmission of information, and such a basic translation does not pass muster.

Not every part of the computer translation is literal. In fact, the beginning of the second paragraph, "nearly a century later", is an idiomatic translation; the literal translation would read "a small century later". That particular translation happened to be in the program's phrase or idiom dictionary. By the same token, phrases such as "a small chemicals operation", the "Maarssen complex", "via a chemical route" (instead of "in a chemical process") could have been in the phrase dictionary and, to the extent that they were, the gap between the computer translation and the human translation would have closed.

What makes the human translation different is the translator's feeling for the English language. Starting the second paragraph with "now", or writing "the evergreen cinchona trees are grown in plantations in ..." as against the computer's "plantations for this evergreen plant are to be found in..." exemplify the translator's ability to relate to and connect with the target audience. Even if the program were to be programmed - as indeed it can be - to make some of these switches and variations, the end result would probably still betray its digital origins.

Would that matter? To the director of that corporation's PR department (with a generous budget, no doubt!) it probably would. If the English translation were not going to be published, and an English-speaking reader were simply interested in what the Dutch had said, it would not. The title of this paper is "Can we make do with Near Human Quality?". The answer is clearly "Yes, if it fits the purpose". Increasingly, however, we are finding that the answer is also "Yes, if it fits the budget". In a competitive global market, the legal requirement for the manufacturer to provide translations of product documentation is viewed as an undesirable constraint by many industrialists in the European Union. Growing numbers of companies are looking to MT solutions as a way of ensuring low-cost compliance. We know of at least two companies which, despite the disclaimer automatically inserted at the beginning of every output file created by our system, use and even publish our MT output with little more than a cursory glance at the content. We are currently able to sell computer-generated translations at roughly 20% of the price charged by translation agencies and 50% of the price charged by the cheapest freelance translator. The reality is that with such cost savings on offer industrial customers tend to lower their acceptability threshold. If the computer writes "a small chemical activity" instead of "a small chemicals operation" or "in a chemical process" and not "via a chemical route", the typical industrial end user is not too bothered so long as the basic meaning of the original text is conveyed.

As has already been mentioned, Hook & Hatton's translation program - and many of the high-end commercial programs - offer facilities for generating idiomatic translations. In the introduction, it was stated that one of the characteristics of a computer translation is monotony. It is of course possible to program the computer to avoid monotony, for instance by using a synonym whenever a word occurs more than twice in the same paragraph, or by varying occurrences of phrases such as "because of", "on account of", "due to". Routines to accomplish this could be written in less than twenty lines of code, and they will close the gap between computer and human translations even further. But the translations will probably still not feel human. Just as the nice lady's voice that gives you the number when you ring Directory Enquiries will never sound human. Does that really matter? In many instances, for many purposes, it does not. In those cases, we certainly can make do with Near Human Quality.