

# Book Reviews

## Machine translation: An introductory guide

D. Arnold, L. Balkan, R. Lee Humphreys, S. Meijer, and L. Sadler  
(University of Essex)

Oxford: NCC Blackwell, 1994, viii +  
240 pp.

Hardbound, ISBN 1-85554-246-3, \$49.95,  
£40.00

Paperbound, ISBN 1-85554-217-X,  
\$19.95, £18.99

*Reviewed by*  
*Susanne Heizmann*  
*Hildesheim University*

This book about machine translation is aimed at readers with little or no specialist knowledge in the fields of computer science, artificial intelligence, linguistics, or translation science, especially translators and translation users. It is designed to give an overview of the state of the art of MT, to discuss some key issues of this technology, and to provide us with an outlook into the future.

In my opinion, this aim has been fully achieved by the authors. As a teacher of MT in a university degree course for technical translators, I find the book highly advisable as a broad overview and first introduction for students. Apart from a few small flaws, it is one of the most enlightening MT books for this readership in the past few years.

Its most prominent characteristic is that it adopts the viewpoint of MT users—translators and end users who wish to ‘lift the lid’ on what happens inside an MT engine, and prospective buyers who want to distinguish between what can reasonably be expected from this technology and the sometimes exaggerated claims of researchers or vendors. Existing prejudices and misinformation are done away with. This is why the book should, in my opinion, be required reading for students of translation and, especially, students of computational linguistics who want to develop machine translation systems.

An overview is given from all the fields of knowledge and research that are necessary for the description of MT problems. Topics include MT history, integration of MT engines into the translation workflow, MT architectures, knowledge representation (on all relevant levels of knowledge), MT dictionaries, translation problems, input standardization, MT evaluation, and possible future developments. Approaches from artificial intelligence, however, such as that of ‘scripts and frames’ for example, should, in proportion to their relevance in modern MT research, have been given somewhat broader room not only in the last chapter on ‘future developments,’ but in the chapter that deals with knowledge representation problems of the present.

The book’s plain language and logical construction also make it easy to grasp for non-native speakers of English. A summary at the end of each chapter facilitates keeping the thread during continuous reading, while also enabling selective (re-)reading. The annotated bibliographies in each chapter are a most useful aid to those who are interested in finding more detailed publications for special fields of knowledge.

Let us, however, pick up and correct two quite small items of misinformation, the correction of which will serve the spirit of interdisciplinarity of the book.

In chapter 6, the authors speak of the inevitable differences between languages, which lead to potential translation problems, as 'mismatches', a term quite widely misused in MT research. Even though they emphasize that these differences are due to the given language structures, my colleagues and I would advise not using the term 'mismatch' in this connection, since it is terminologically misleading. It tends to suggest that translation is normally a one-to-one transfer process and these 'mismatches' are lamentable problem cases that complicate a translator's or MT engine's task. As we all know, however, quite the opposite is true. The everyday, normal work of a translator is constantly to cope with and compensate for these language differences, which is one of the things that makes MT research both so hard and so exciting. Speaking of 'mismatches' tends to simplify and distort the picture of translation as a task. Somewhere else in the book, the authors use the word 'differences', which describes the problem more precisely.

The second and even smaller comment serves the same spirit of illuminating the intrinsic properties of the translation task: In chapter 10, which is otherwise a brilliant overview of MT evaluation, the authors suggest (in a parenthesis) that the evaluation of MT output for accuracy or fidelity could be done by raters not in command of the source language, which could be compensated for by comparing the MT output to a 'high quality' reference translation instead of the original source language text. In our opinion, this method is impracticable, since comparison with a 'high quality' reference translation inevitably leads to the MT output being judged as 'low quality'. Modern translation science, however, knows that quality of a translation is defined by its compliance with the *translation order* or translational aim given to the translator by her client. The intended applications of and requirements on translations produced by MT and by human translators, respectively, are in most cases unlike, which leads to quite different standards of 'quality'.

These two very small items of critique may serve as indications of the fact that, seen from a translator-reader's point of view, the book could use a short section on the state of the art of translation science, which would, in our opinion, fit very well into its concept of interdisciplinary information. Such a section could be included in one of the many next editions, which will surely be necessary, given the quality and usefulness of the book.

*Susanne Heizmann* is a translator and works as an MT researcher and teacher at the University of Hildesheim, where students of technical translation learn to judge developments in MT and to work with MT systems. She is collaborating on the German MT research project *Verbmobil*. Heizmann's address is: Universität Hildesheim, Computerlinguistik, Marienburger Platz 22, D-31141 Hildesheim, Germany; e-mail: suse@cl.uni-hildesheim.de.