# Metalanguages for Dissecting Translation Processes

## Theoretical Development and Practical Applications


## Edited by

## Rei Miyata, Masaru Yamada, and Kyo Kageura



First published in 2022

ISBN: 978-1-032-16892-0 (hbk)
ISBN: 978-1-032-16895-1 (pbk)
ISBN: 978-1-003-25085-2 (ebk)


# 2 Metalanguages and translation studies




DOI: 10.4324/9781003250852-3

The funder: Nagoya University, Japan

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

# 2 Metalanguages and translation studies

*Kyo Kageura, Rei Miyata, and Masaru Yamada*

## 2.1 Introduction

Research in translation studies has contributed to promoting our understanding of translation processes. However, although this knowledge is relevant and useful to all the actors in translation, including clients, it does not seem to be shared very widely. This observation motivated us to further concretise the knowledge that has been accumulated in translation studies about translation processes and to develop metalanguages useful for describing these processes and for facilitating understanding among different actors.

This chapter elaborates on the role of metalanguages in translation. We first briefly review relevant work in translation studies and confirm the gap in the understanding of translation between translation studies researchers and MT researchers. We then examine the position and use of metalanguages in related fields and in translation studies and clarify the term "metalanguage" in the context of this book. Last, we will examine the desiderata for metalanguages.

## 2.2 Translation studies in perspective

Translation has a long history, and so do studies on translation (Weissbort & Eysteinsson, 2006; Venuti, 2012; Mehawesh, 2014; Funayama, 2012; Kim, 2008). In transition to what we can broadly call the modern era, characterised by such features as the existence of nation states, translation has been outstandingly related to the "modernisation" of languages and the establishment of "national" languages (Moriyasu, 2002; Kato & Maruyama, 1991; Bai, 2011), which is a live issue (Zafra, 2004; Kadenge & Nkomo, 2011).

Despite this background, most commercial translation activities presume that both souce languages and target languages were well-established. Translation studies are also increasingly addressing these areas of translation (Funayama, 2012). Much work has been devoted to developing theories of translation different from abstract theories as presented in, for instance, Benjamin (1923). It is analogous to the fact that research in numerical computation has become an important *theoretical* topic with the advent of computers. Since the mid-twentieth century, translation theories in this sense have attracted much attention. The early

DOI: 10.4324/9781003250852-3

attempts (Koller, 1979; Newmark, 1981, 1988; Nida, 1964), though prescriptive to some extent, played an important role in laying the foundations for trends in the scientific approach to translation studies.

Vinay and Darbelnet (1958/1995) stated the role of translation studies as follows:

> Even translators all too often claim that translation is an art ... Translation is, in fact, an exact discipline, with its own methods and particular problems, and it is in this perspective that we want to study (Vinay & Darbelnet, 1958/1995, p. 7)

They then carried out a detailed comparative analysis between French and English, at the linguistic level. Linguistic-based contrastive analyses grew and contributed to clarifying translation-related issues specific to observed language pairs and textual manipulations among the pairs (e.g. Catford, 1965). These studies were based on their own theoretical framework and did not provide a common ground for translation studies.

In the 1970s, Holmes (1988) tried to consolidate translation studies as an independent field of research.[1] The framework proposed by Holmes (1988) was later presented as a "map" that showed an integrated approach to translation studies covering both theory (pure translation studies) and practice (applied translation studies) (Toury, 1995). Since then, translation studies have come to be understood as an independent discipline that brings together scholars from different research areas. The field now has several international conferences, academic journals, and a number of textbooks, encyclopaediae, and handbooks (e.g. Baker, 1998; Gambier & van Doorslaer, 2010–13; Gile, 2009; Kelly, 2005; Kiraly, 1995; Laviosa & González-Davies, 2019). Both undergraduate- and graduate-level translation courses have proliferated, currently encompassing over 500 institutions in more than 60 countries.

While interest in translation studies grew, academic research in the field addressed various aspects of translation often in isolation and detached from translation practices. It gradually slowed down in making contributions to practical aspects. This reflects the absence of a common theoretical basis to account for translation practices. We can observe, in a hindsight, that the field of translation studies, borrowing its methodologies from other fields, experienced several "turns," i.e. the linguistic turn in the 1960s, the pragmatic turn in the 1970s, the cultural turn in the 1980s, the social turn in the 1990s, and the technological turn in the 2000s (Bassnett & Lefevere, 1990; Chesterman, 2016; O'Hagan, 2013; Snell-Hornby, 2006). Diversification has created divides in translation studies.

In the 1990s, strong demand for research to meet practical needs came from the translation industry, which was then adapting itself to the growing demand for localisation and to such technologies as CAT tools or MT. Translation studies started to deal with new forms of translation practices. Studies of translation technologies and their actual use were conducted (e.g. Bowker, 2002; Esselink, 2000; Melby, 1995, 1998; Mosavi Miangah, 2008; Pym, 2004; Quah, 2006).

Work on productivity, cognitive effort, operations, and human-computer interaction was carried out (e.g. Krings, 2001; Jakobsen & Schou, 1999; O'Brien, 2012; O'Brien et al., 2014). Translation studies witnessed a technological turn (Chan, 2017; Cronin, 2010; O'Hagan, 2013; Pym, 2009).

As of now, we have translation schools such as functionalist approaches (Holz-Mänttäri, 1984; Nord, 2005) that contribute to actual translation practices. On the industry side, the framework of intrinsic and extrinsic translation processes in translation projects – a standard practice in translation service providers – is identified to such an extent that the standard process is defined in an international standard (ISO, 2015). We have now an accumulation of knowledge that could potentially be deployed to promote mutual understandings among different actors involved in translation processes and in related tasks including developing technologies.

## 2.3 Gaps in the perception of translation

Despite the development of translation studies, the lack of common understanding about translation is still widely observed. Let us briefly confirm the gap in understanding of translation between translation researchers and MT researchers as a concrete case, based on Kageura (2019). In this study, the data of MT articles (henceforth MT for succinctness in this section) were taken from the ACL Anthology Reference Corpus, the textual corpus that covers major conferences in the field of computational linguistics (Bird et al., 2008). The data consist of 566 articles that have "MT" or "machine translation" in their title, published between 2010 and 2015. The data were quantitatively and qualitatively compared with two textbooks of translation studies (Newmark, 1988; Munday, 2001) and with the entries with "translat*" as a head in a dictionary of translation studies (Shuttleworth & Cowie, 1997; henceforth "SC"). SC has 422 English entries.

In the comparison of MT and the two textbooks, it was observed that, among the top 100 nouns in each of the data, MT lacked words representing human actors (e.g. "translator," "reader," "author") and document-related concepts (e.g. "book," "writing"). Among words representing linguistic concepts, non-formal words such as "style," "concept," "sense," and "meaning" were missing in MT.

This observation was further confirmed in the comparison of translation related terms in MT with those in SC. Among the 101 compound entries in SC that have "translat*" as a head, 23 occur in MT. These represent concepts (i) that specify computational modes of translation or mode of input-output, or (ii) that specify surface linguistic mode of translation, as shown in Table 2.1. On the other hand, entries that do not occur in MT terms include concepts of translation specified by types of medium, strategies and social status, as shown in Table 2.2.

These indicate that the "translation" dealt with in MT research covers only a subpart of the translation dealt with in translation studies. This also indicates that MT covers only a subpart of actual translation processes. It can reasonably

*Table 2.1* Entries in SC that have "translat*" as a head and that occur in MT. Numbers in brackets show frequency in MT.

| |
|---|
| machine translation (464), lexical translation (51), automatic translation (41), partial translation (19), full translation (17), direct translation (17), literal translation (10), computer-assisted translation (10), grammatical translation (6), free translation (6), back-translation (4), total translation (3), computer-aided translation (3), word-by-word translation (2), indirect translation (2), idiomatic translation (2), close translation (2), word-for-word translation (1), verbal translation (1), retranslation (1), prose translation (1), parallel translation (1), inverse translation (1) |

*Table 2.2* Entries in SC that have "translation" as a head and that do not occur in MT.

| | |
|---|---|
| Type of medium | written translation, intersemiotic translation |
| Linguistic concepts | sense-for-sense translation, semantic translation, pragmatic translation |
| Mode of translation | sight translation, selective translation |
| Strategy of translation | foreignizing translation, domesticating translation, primary translation |
| Social status of translation | service translation, abusive translation |
| Process of translation | multiple-stage translation, mediated translation |

be inferred that the overall understanding of translation by lay people including clients is at best similar to the understanding by MT researchers.

The gap between translation studies and translation practice is different. They seem to share more or less a common understanding of translation. The issue is that they understand translation at different levels of abstraction and there is little means to bridge the gap. In either case, explicitating knowledge of translation processes and sharing it through corresponding metalanguages is essential to fill the gaps that exist among different actors involved in translation. Confirming this, let us now turn to the clarification of the concept of "metalanguage," which has been used informally so far.

## 2.4 The concept of "metalanguage"

### *2.4.1 The use of "metalanguage" in related fields*

The basic meaning of "metalanguage" is "a language used to talk about language" (Merriam-Webster, 2016). In the situations in which this term is applied, there are two languages. One is the object of observation or description, and the other is the means for observing or describing this object. This term has been examined in related fields, i.e. logic, linguistics, lexicography, and language teaching.

In logic, the term "metalanguage" is contrasted with "object-language." The distinction between metalanguage and object-language was originally introduced in Polish in Tarski (1933/1956), as an essential distinction in logic. When logic is being learned, logical languages are the object-language and a language used in

learning logic, such as English, is the metalanguage (Smith, 2003; Swart, 2018). When logic is used in analysing and examining arguments made in natural language, the roles are reversed; formal languages take the role of metalanguage in explaining natural language as an object-language (cf. Halbach, 2010). In either case, that metalanguage is for talking about a language is maintained. This reflects the fact that the object-language is clearly defined.

The distinction between object-language and metalanguage is also important in linguistics (Lyons, 1977) because the whole mission of linguistics is to study languages. Because it is essential, the metalanguage is taken as a matter of course and is often not explicitly regarded as such. For instance, part-of-speech (POS) categories constitute a part of metalanguages in linguistics, but they are not necessarily regarded as such. Phenomena or symbols related to languages but not part of the narrow sense of languages are sometimes called "metalinguistic" and are regarded as an object of study in linguistics (Jakobson, 1956/1985). Then languages used for describing both linguistic and metalinguistic phenomena can be validly called metalanguages. We can analogously justify our use of this term to analyse and describe translation processes, only parts of which are linguistic.

Lexicography is another field in which "metalanguage" is used. The term often refers to language used for defining entries (Gold, 1983). It is also used to refer to other explanatory parts in dictionaries. In the context of discussing bilingual dictionaries, which language should be used as the basis for a metalanguage is often discussed (Atkins, 1996; Honselaar, 2003). In lexicography, defining metalanguages is an explicit and important research issue. This reflects the fact that, unlike linguistics, in lexicography metalanguages play a critical role in explaining the meaning and other features of words provided to dictionary users. Put differently, metalanguages in lexicography are not only the means of understanding among lexicographers, but also the means for dictionary users to understand words.

The role and status of metalanguages in language teaching is similar to that in lexicography, i.e. their effectiveness is essential in the practical mission of improving language teaching. The role of metalanguages has thus been an important topic of research and an issue of debate. Though the effectiveness of using metalanguages should be evaluated in relation to other methods of language teaching, such as methods that place emphasis on direct communication, recent trends indicate that the use of metalanguages can play an important role in this area (Hu, 2010; Schleppegrell, 2013).

### *2.4.2 Metalanguages in the present study*

In the present study, we can define "metalanguage" as a language used to describe translation processes. In relation to the definitions of metalanguages and their status in related fields, the metalanguages in this work can be characterised as follows:

1. The term "metalanguage" is used in an extended way compared to its rigorous usage in logic. Incidentally, Gambier and van Doorslaer (2009) use this term in a broader sense.
2. The aim of developing metalanguages in this study is both to promote our scientific understanding of translation processes, as in linguistics, and to facilitate understanding of the process among different actors involved in translation activities, as in lexicography and language teaching.

Now, what exactly do the metalanguages in our research agenda consist of? In formal logic, either a natural language or a total system of formal language makes the metalanguage. In linguistics, lexicography, and language teaching, a specific set of vocabulary or terminology is generally held to constitute the metalanguage (although rules for defining entries is an important part of metalanguage in lexicography). In this study, as in the latter domains, terminologies constitute the core of metalanguages. In deploying these terminologies in practical setups such as actual translation processes or translation education, rules or steps of deployment of terminologies become important. We will call a core set of terms and the additional rules or steps a *metalanguage scheme*.

Unlike many of the practical terminology projects, which are more or less prescriptive and clarifying concepts and defining terms are essential (cf. ISO, 2000), our main concern here is to develop lists of terms useful as metalanguages. Though we give definitions to terms whenever relevant as part of the metalanguage scheme, their mission is not to prescribe the concepts but to guide their usage and deployment.

## 2.5 Developing metalanguages

Here, as a methodological backbone of the work presented in Part II, we explain the general requirements of our metalanguages and procedures for developing them.

### *2.5.1 Requirements for metalanguages*

Procedures for terminology work formulated so far tend to focus on how to deal with terms and concepts and/or on how to carry out terminology projects, and do not provide requirements for a terminology as a set in a systematic way (ISO, 2000; EPA, 2020). Gambier (2009) pointed out a lack of consensus among editors in selecting entries in different language versions of a terminology.

The following are important, though not comprehensive, requirements for metalanguages in general and for our metalanguages in particular.

**Systematicity:** Terms in a metalanguage should be organised systematically.
**Coverage:** They should cover a sufficient range of actions and phenomena needed to describe the intended process.
**Granularity:** They should cover concrete concepts that can describe actions and phenomena of the translation process in detail.

**Effectiveness:** They should facilitate and improve the practical translation process.
**Applicability:** They should be applicable to a broad range of use scenarios.
**Feasibility:** They should be consistently used by a wide variety of users.
**Learnability:** They should be easily learned by users without undue effort.

The first three are intrinsic requirements stemming from the nature of metalanguages, while the other four are extrinsic requirements from the point of view of use. The intrinsic requirements are essential for a vocabulary or terminology (Kageura, 2020; Kilgarriff et al., 2014). The extrinsic requirements, based on attributes of usability identified in system design and evaluation (ISO, 2018; Nielsen, 1993), are crucial for our metalanguages, as they are to be used in practical situations. Note that the intrinsic requirements are concerned with a *metalanguage* (i.e. a core set of terms), and the extrinsic requirements are concerned with a *metalanguage scheme* (i.e. a core set of terms with additional rules or steps).

The requirement of systematicity can be satisfied by a well-formed hierarchical typology of terms, based on which actions, phenomena, and elements involved in translation processes can be classified without overlap or confusion. A well-articulated typology of terms is required to satisfy the requirement of coverage. The requirement of granularity is essential to operationalise translation actions in a fine-grained manner, enabling those who are not familiar with translation theories to make use of metalanguages in their practical context.

Theoretically, the requirement of effectiveness should be achieved if the intrinsic requirements are satisfied. It is nevertheless important to extrinsically evaluate whether the developed metalanguages can improve the translation processes and products or not, from a practical point of view. Applicability is concerned with conditions of application scenarios, such as translation purposes, languages, and text genres. Both feasibility and learnability pertain to the use of metalanguages. The requirements of feasibility can be decomposed into two types: (1) understandability of metalanguages themselves, and (2) consistency of use. Providing usable definitions of terms and operational rules to deploy the terms become important here as a part of the metalanguage scheme. Learnability refers to a pragmatic aspect of ease in gaining competence to use the metalanguages.

These requirements sometimes conflict with each other. For example, high granularity might degrade the learnability. Also, rigid systematicity, like taxonomy in biology, can make the structure of terminology complex and can degrade feasibility and learnability. These requirements should be balanced to fulfil our goal of providing useful metalanguages for practical situations (cf. EPA, 2020). Organising metalanguages in such a way that partial deployment is made possible is one way of reconciling the conflicting requirements.

### *2.5.2 Procedures for developing metalanguages*

Development of actual metalanguages or terminologies that satisfy due requirements is a gradual process, which involves the repetition of collection, validation,

augmentation, and updating. We defined the following procedures to develop metalanguages:

**(A) Review-based procedure:** Collect terms or concepts that have been proposed in existing literature and documents about translation, and systematise them.
**(B) Data-driven procedure:** (1) apply the developed metalanguage to the intended data (process or textual phenomena) to validate it, and/or (2) identify new terms to be included in the metalanguage by investigating the data.
**(C) User-focused procedure:** deploy the developed metalanguage in a practical or training scenario of translation and validate its usefulness with a view to a further refinement of the metalanguage.

The accumulation of theoretical and practical metalanguages addressing the core parts of translation processes, including ones for project management (Dunne & Dunne, 2011; ISO 2015), source document analysis (ISO, 2012; Nord, 2005; Sager, 1997; Trosborg, 1997), translation strategies (Chesterman, 2016), and revisions (Castagnoli et al., 2006; Secară, 2005), enables us to take procedure (A) as an initial step. We often observe that the initial set of terms developed according to procedure (A) needs further augmentation to satisfy the criteria of granularity.[2] It is sometimes useful to refer to the concepts and terms developed in related domains such as linguistics, technical communication, and library and information science. It is also important to check the coverage and applicability for practical translation processes, as conceptualisations of processes in translation studies are often based on literary translations.

Procedure (B) is thus essential to augment and fine-tune the metalanguages in terms of granularity, coverage, and applicability. Insights into appropriate granularity can be obtained through checking the metalanguages vis-à-vis data. If multiple participants are involved in this procedure, it is possible to check the agreement among them on how the metalanguages are applied. This helps us to check feasibility and to develop rules or steps for consistent deployment of the metalanguages. To implement procedure (B), the adequacy and the appropriateness of data is also essential (cf. Miyata & Kageura, 2018).

Through procedure (C), the extrinsic attributes of the metalanguage can be validated. Based on the established usability studies (e.g. ISO, 2018; Nielsen, 1993; Sauro & Lewis, 2012), effectiveness, feasibility, and learnability can be evaluated by implementing controlled experiments of translation tasks with and without the use of the metalanguage and by observing the process and resultant products of translation. It is also useful to obtain qualitative feedback from users to identify the issues to be solved.

How these procedures are applied differs for the different metalanguages for the different parts of the translation processes. The chapters in Part II of this book mainly report on the results of procedures (A) and (B). Several chapters in Part III report on procedure (C).

## Notes

1 This idea was presented in 1972.
2 Exceptions are metalanguages for translation quality assessment, such as MQM (Burchardt & Lommel, 2014), which can be applied to the revision process.

## References

Atkins, B. T. S. (1996). Bilingual dictionaries: Past, present and future. In M. Gellerstam, J. Järborg, S-G. Malmgren, K. Norén, L. Rogström, & C. R. Papmehl (Eds.), *Euralex '96 proceedings I–II* (pp. 515–546). Göteborg University.

Bai, L. (2011). "Translator studies": Liang Shiqiu's discourse on translation. *Across Languages and Cultures*, 12(1), 71–94.

Baker, M. (Ed.). (1998). *The Routledge encyclopedia of translation studies*. Routledge.

Bassnett, S., & Lefevere, A. (Eds.). (1990). *Translation, history and culture*. Continuum.

Benjamin, W. (1923). La tâche du traducteur. https://po-et-sie.fr/wp-content/uploads/2018/10/55_1991_p150_158.pdf

Bird, S., Dale, R., Dorr, B., Gibson, B., Joseph, M., Kan, M-Y., Lee, D., Powley, B., Radev, D, & Tan, Y-F. (2008). The ACL anthology reference corpus: A reference dataset for bibliographic research in computational linguistics. In *Proceedings of the 6th International Conference on Language Resources and Evaluation (LREC)* (pp. 1755–1759). ELRA.

Bowker, L. (2002). *Computer-aided translation technology: A practical introduction*. Presses de l'Université d'Ottawa.

Burchardt, A., & Lommel, A. (2014). *QT-LaunchPad supplement 1: Practical guidelines for the use of MQM in scientific research on translation quality*. https://www.qt21.eu/downloads/MQM-usage-guidelines.pdf

Castagnoli, S., Ciobanu, D., Kunz, K., Kübler, N., & Volanschi, A. (2006). Designing a learner translator corpus for training purposes [Conference presentation]. 7th International Conference on Teaching and Language Corpora, Paris, France.

Catford, J. C. (1965). *A linguistic theory of translation*. Oxford University Press.

Chan, S.-W. (2017). *The future of translation technology: Towards a world without Babel*. Routledge.

Chesterman, A. (2016). *Memes of translation: The spread of ideas in translation theory* (2nd ed.). John Benjamins.

Cronin, M. (2010). The translation crowd. *Revista Tradumatica*, 8, 1–7.

Dunne, K. J., & Dunne, E. S. (2011). *Translation and localization project management: The art of the possible*. John Benjamins.

EPA (2020). *Best practices in terminology development and management: A guide for EPA editors and stewards*. Environment Protection Agency. https://ofmpub.epa.gov/sor_internet/registry/termreg/outreachandeducation/educationalresources/referencematerials/Terminology_Development_and_Governance_(Best%20Practices)_April_2014_Final.pdf

Esselink, B. (2000). *A practical guide to localization*. John Benjamins.

Funayama, T. (2012). *Butten wa dou kanyakusaretanoka? – Sutora ga keiten ni narutoki* [Making Sutras into "classics": How Buddhist scriptures were translated into Chinese]. Iwanami. (in Japanese).

Gambier, Y. (2009). Translation terminology and its offshoots. In Y. Gambier & L. van Doorslaer (Eds.), *The metalanguage of translation* (pp. 183–189). John Benjamins.

Gambier, Y., & van Doorslaer, L. (Eds.). (2009). *The metalanguage of translation*. John Benjamins.

Gambier, Y., & van Doorslaer, L. (Eds.). (2010–.13) *Handbook of translation studies* (Vols. 1–4). John Benjamins.

Gile, D. (2009). *Basic concepts and models for interpreter and translator training* (Revised ed.). John Benjamins.

Gold, D. L. (1983). Lexicographical metalanguage. *Babel*, 29(3), 134–151.

Halbach, V. (2010). *The logic manual*. Oxford University Press.

Holmes, J. S. (1988). The name and nature of translation studies. In J. S. Holmes. (Ed.), *Translated!: Papers on literary translation and translation studies* (pp. 66–80). Rodopi.

Holz-Mänttäri, J. (1984). *Translatorisches handeln: Theorie und methode*. Suomalainen Tiedeakatemia.

Honselaar, W. (2003). Examples of design and production criteria for bilingual dictionaries. In P. van Sterkenburg (Ed.), *A practical guide to lexicography* (pp. 323–332). John Benjamins.

Hu, G. (2010). Revisiting the role of metalanguage in L2 teaching and learning. *English Australia Journal*, 26(1), 61–70.

ISO (2000). *ISO 704. Terminology work – Principles and methods*. International Organization for Standardization.

ISO (2012). *ISO/TS 11669. Translation projects – General guidance*. International Organization for Standardization.

ISO (2015). *ISO 17100. Translation services – Requirements for translation services*. International Organization for Standardization.

ISO (2018). *ISO 9241-11. Ergonomics of human-system interaction – Part 11: Usability: Definitions and concepts*. International Organization for Standardization.

Jakobsen, A., & Schou, L. (1999). Translog documentation. In G. Hansen (Ed.), *Probing the process in translation: Methods and results* (pp. 9–20). Copenhagen Studies in Language 24, Samfundslitteratur.

Jakobson, R. (1956/1985) Metalanguage as a linguistic problem. In S. Rudy (Ed.), *Selected writings* (Vol. VII, pp. 113–121). Mouton. (Original work published 1956)

Kadenge, M., & Nkomo, D. (2011). Language policy, translation and language development in Zimbabwe. *Southern African Linguistics and Applied Language Studies*, 29(3), 259–274.

Kageura, K. (2019). What does MT research say about translation? An empirical sketch [Conference presentation]. 2019 ERITS Conference, Seoul, Korea.

Kageura, K. (2020). The status and role of dictionaries in the era of unlimited online lexical information search and free online MT use. *Journal of Korealex*, 36, 7–21.

Kato, S., & Maruyama, M. (1991). *Hon'yaku no shisou* [The philosophy of translation]. Iwanami. (in Japanese).

Kelly, D. (2005). *A handbook of translator trainers*. Routledge.

Kilgarriff, A., Charalabopoulou, F., Gavrilidou, M., Johannessen, J. B., Khalil, S., Kokkinakis, S. J., Lew, R., Sharoff, S., Vadlapudi, R., & Volodina, E. (2014). Corpus-based vocabulary lists for language learners for nine languages. *Language Resources and Evaluation*, 48(1), 121–163.

Kim, J. (2008). The Korean tradition of translation: From the primeval period to the modern era. *Journal of Universal Language*, 9(1), 41–60.

Kiraly, D. C. (1995). *Pathways to translation: Pedagogy and process*. Kent State University Press.

Koller, W. (1979). *Einführung in die Übersetzungswissenschaft*. Quelle & Meyer.

Krings, H. P. (2001). *Repairing texts: Empirical investigations of machine translation post-editing processes* (G. S. Koby, Ed.; G. S. Koby, G. M. Shreve, K. Mischerikow & S. Litzer, Trans.). Kent State University Press.

Laviosa, S., & González-Davies, M. (Eds.). (2019). *Routledge handbook of translation and education*. Routledge.

Lyons, J. (1977). *Semantics* (Vols. 1–2). Cambridge University Press.

Mehawesh, M. I. (2014). History of translation in the Arab world: An overview. *US–China Foreign Language*, 12(8), 684–691.

Melby, A. K. (1995). *The possibility of language*. John Benjamins.

Melby, A. K. (1998). Eight types of translation technology [Conference presentation]. American Translators Association (ATA) 39th Annual Conference, Hilton Head Island. https://www.ttt.org/technology/8types.pdf

Merriam-Webster (2016). *The Merriam-Webster dictionary*, Merriam-Webster.

Miyata, R., & Kageura, K. (2018). Building controlled bilingual terminologies for the municipal domain and evaluating them using a coverage estimation approach. *Terminology*, (24)2, 149–180.

Moriyasu, T. (2002). *Kindai kokka to kirisutokyou* [Modern nation-state and Christianity]. Heibonsha. (in Japanese).

Mosavi Miangah, T. (2008). Translation memories and the translator. *International Journal of Translation*, 20, 97–106.

Munday, J. (2001). *Introducing translation studies: Theories and applications*. Routledge.

Newmark, P. (1981). *Approaches to translation*. Pergamon.

Newmark, P. (1988). *A textbook of translation*. Prentice Hall.

Nida, E. A. (1964). *Toward a science of translating*, E. J. Brill.

Nielsen, J. (1993). *Usability engineering*. Morgan Kaufmann.

Nord, C. (2005). *Text analysis in translation: Theory, methodology, and didactic application of a model for translation-oriented text analysis* (2nd ed.). Rodopi.

O'Brien, S. (2012). Translation as human-computer interaction. *Translation Spaces*, 1, 101–122.

O'Brien, S., Baling, L. W., Carl, M., Simard, M., & Specia, L. (Eds.). (2014). *Post-editing of machine translation: Processes and applications*, Cambridge Scholar Publishing.

O'Hagan, M. (2013). The impact of new technologies on translation studies: A technological turn? In C. Millán & F. Bartrina (Eds.), *The Routledge handbook of translation studies* (pp. 503–518). Routledge.

Pym, A. (2004). *The moving text: Localization, translation, distribution*. John Benjamins.

Pym, A. (2009). *Exploring translation theories*, Routledge.

Quah, C. (2006). *Translation and technology*, Palgrave Macmillan.

Sager, J. C. (1997). Text types and translation. In A. Trosborg (Ed.), *Text typology and translation* (pp. 25–41). John Benjamins.

Sauro, J., & Lewis, J. R. (2012). *Quantifying the user experience: Practical statistics for user research*. Morgan Kaufmann.

Schleppegrell, M. J. (2013). The role of metalanguage in supporting academic language development. *Language Learning: A Journal of Research in Language Studies*, 63, 153–170.

Secară, A. (2005). Translation evaluation: A state of the art survey. In *Proceedings of the eCoLoRe/MeLLANGE Workshop* (pp. 39–44). University of Leeds.

Shuttleworth, M., & Cowie, M. (1997). *Dictionary of translation studies*. St. Jerome.

Smith, P. (2003). *An introduction to formal logic*. Cambridge University Press.

Snell-Hornby, M. (2006). *The turns of translation studies: New paradigms or shifting viewpoints?* John Benjamins.

Swart, H. de. (2018). *Philosophical and mathematical logic*. Springer.

Tarski, A. (1933/1956). The concept of truth in the languages of the deductive sciences. In J. Corcoran (Ed.), *Logic, semantics, metamathematics: Papers from 1923 to 1938* (pp. 152–278). Hackett. (Original work published 1933)

Toury, G. (1995). *Descriptive translation studies – and beyond*. John Benjamins.

Trosborg, A. (1997). Text typology: Register, genre and text type. In A. Trosborg (Ed.), *Text typology and translation* (pp. 3–23). John Benjamins.

Venuti, L. (Ed.). (2012). *Translation studies reader* (3rd ed.). Routledge.

Vinay, J.-P., & Darbelnet, J. (1958/1995). *Comparative stylistics of French and English: A methodology for translation*. John Benjamins. (Original work published 1958)

Weissbort, D., & Eysteinsson, A. (Eds.). (2006). *Translation – theory and practice: A historical reader*. Oxford University Press.

Zafra, G. S. (2004). In focus: Pushing the national language development through translation. https://ncca.gov.ph/about-culture-and-arts/in-focus/pushing-the-national-language-development-through-translation/