Science of translation

Introduction. The science of translation as a branch in general sciences asks two questions: first, whether a discipline today called the “science of translation” should be considered as having been established as an independent field, or is it still “on its way?”; and second, where is it located within the framework of science? To answer these questions, the terms “science” and “translation” and the historical background of activity falling under the branch identified as the science of translation need to be considered.

Science and translation. The philosopher of science, Thomas Kuhn, in his well-known book, The Structure of Scientific Revolutions (1962), argues that normal science is built on the assumption that the scientific community knows what the world is like. Paradigm shifts periodically fill in gaps of the foundations of science on the basis of proof obtained through the processes of verification and falsification. In such a manner, producing novelties soon becomes part of further “normal” science. Scientific axioms, such as verifiability, repeatability, universality, and quantification, qualify a discipline to be scientific. Science today is understood to encompass everything from natural sciences to the arts and it is in the latter that the science of translation is located.

Translation as a science provides a structure and includes processes of discovery and verification of systematic and reliable knowledge. In this manner, “science” refers to any enduring aspect of the universe concerning communication, language, and translation.

The terms “translation” or “translating” today engender multiple explanations of what translation means in regard to other related disciplines, like anthropology, linguistics, psychology, social, and cognitive sciences. Summarizing those findings, a definition may be
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given as follows, “Translation forms an intuitive and cognitive process, transporting and producing genre and texts cross-culturally, thereby remaining mainly intentionally political” (Werner 2011, 69). Texts are hereby understood in a wider sense, including speeches, oral traditions, and written discourse including both narrative and poetry.

The discipline of translation is three-fold, comprising translation as a product, the process of translating, and the function of translation as a science, with both interpreting and Bible translation included within the scope of translation. As such, we are interested here in the function of translation as an intuitive discipline. The emphasis lies with the term “intuitive.”

Previously, translation was regarded as an art, but today translators appreciate that it is recognized as an academic discipline and thus ascribe it to scholarly endeavors (Nord 2001).

Science of translation. Looking back at *Towards a Science of Translation* (1964), the ground-breaking work of the American translation scholar Eugene Nida, there would be good reason to expect that after half a century of research on translation, a science of translation would have taken root by now. One finds three attitudes toward the subject: (1) Some translation theorists refuse to declare translation as science because of its intuitive approach. The denial of any successful translation activity (Steiner 1990, 77–78) as well as the argument that communication is always and everywhere happening, as expressed in Paul Watzlawick’s axiom, “One cannot not communicate” (Watzlawick et al.1993, 53), brings confusion to the whole discussion (Baker 2001, 277–80). (2) Most scholars assume that translation is possible, although its complexity and interdisciplinary nature make it awkward to localize or define (e.g., Nord 2003, 4). (3) Culture-oriented approaches declare that translation is what a culture makes out of it (Katan 1999, 3–7; Gutt 2000, 5).
The German translation scholar, Wolfram Wilss (1982; 1984), and others, remind us that a science of translation must be regarded as fragmentary, due to the absence of a metalanguage, which would be necessary to explain the function of language in translation objectively. But even without this tool, history reveals that it is possible to consider recent academic translating and translation activities, consolidated under the expression “Translation Studies,” as a science, precisely, as the science of translation. Yet objectivity is only one criterion for translation; the other is intuition, which must be accompanied by quality assessment.

**History of translation.** Historically, the translation task became central to ancient high cultures, subordinating numerous ethnicities under a single regime. Early pharaonic Egypt dealt with interpreters for the Nubians and Greeks; translations of the Gilgamesh epic are found from Assyria to Turkey and Palestine in the Acadian, Hittite, and Hurrian languages; and libraries all over the Fertile Crescent, ancient Mesopotamia, and China bear witness to the significance of translation. Although we have only the translated texts, without records about the methods, theories, and practices of ancient translating and interpreting, it is obvious there was a huge industry dedicated to the bridging of language and cultural barriers. Translation was a necessary tool for trade, business, and political colonization, as it is today. Religious traditions, written or oral, were translated to colonize people in conquered areas, sometimes unconsciously, but sometimes intentionally (e.g., Gilgamesh epic, Enuma Elish epic, Mahabharata epic).

The Hebrew Bible demonstrates the significance of translation in the political sphere, for instance, in the account of Joseph’s brothers coming to Egypt seeking food during a time of famine (Gen 42:23), and in the record of King Hezekiah being threatened by the Sennacherib, the emperor of Assyria (2 Kgs 18:26–28). In Ezra 4:7 the translation of a letter into Aramaic became necessary as the King of Persia used that language to communicate with the inhabitants
of Judea. This letter was answered and used as a decree to stop any building activities of the returning Hebrews. The power of translation can also be seen when Daniel interpreted the mysterious writing on the wall for the Babylonian king Belshazzar, a feat that raised him up to the third position of the kingdom (Dan 5:25–28).

It is in Bible translation that the history and development of a science of translation is best witnessed and reflected. Bible translation started with the translation of the Hebrew Bible into Greek, resulting in the Septuagint around 250 BCE. Because of cultural and linguistic diversity within the early group of Christians (Acts 2:7–11), it soon became vitally important to interpret and translate the oral and written words of Jesus. Bible translation as a movement by the Church was based on the theology of the Incarnation, namely, that the Word became flesh (John 1:1–5, 15–16), which led to the incarnational translation principle. The translation of Scripture led to lively translation activities in the Middle Ages. Throughout the history of Scripture translation, tension is found in the range of translation style from formal correspondence to free rendering.

Greek philosophers like Plato (428/427–348/347 BCE) and Aristotle (384–322 BCE) and others contributed to translation theory by describing their philosophical foundation of communication theory (e.g., Plato’s *Metaphysics*; Aristotle’s *Physics*) and thus presenting to us the ancient ways—but not their understanding of translation as part of the science of communication. Verbal rendering was highly valued, for example, by the Roman poet Horace (65–8 BCE), by the 6-c. philosopher Boethius, and much later in the 13 c. by the English philosopher Roger Bacon. According to this tradition, the original text was held in great respect and there was fear of distorting the message (Robinson 2002:14–15, 35, 45–46). However, dynamic and literal translation went hand in hand as the translation of the LXX demonstrates.
Cicero (106–43 BCE), the great Roman orator and rhetorician, moved from the restatement of text rhetorically to translation from Greek to Latin, using analogy as one technique of translation (7). Robinson has argued that a tripartite division of translation into metaphrase, paraphrase, and imitation started in the ancient culture with the Jewish philosopher and theologian Philo of Alexandria (ca.13 BCE–45/50 CE), and with rhetorician Quintilian from Spain (35 CE–ca 95), and not with the 17-c. English poet John Dryden as generally supposed (172). Following the Classical Era and the early Church Fathers (e.g., Augustine, Jerome, and Gregory the Great) who took an interest in translation, it was not until the Renaissance that translation theory rose to cultural and ecclesiastical prominence in the West. Leonardo Bruni was a 14–15-c. Italian humanist translator through whom the theoretical discussion about truthfulness to the original and formal equivalence emerged (57–59). In the 17 c. Dryden presented his revitalization of the ancient tripartite division of translation as word-for-word, sense-for-sense, and “free” translation.

Moving forward to the modern era, it was the American linguist James Holmes who first used the phrase “science of translation” in the 1960s (1988, 70; Baker 2001, 277), thereby drawing together academic concepts like the science of translating (Nida 1964), the science of translation (Wilss 1982), and translatology (Roger Goffin cited in Baker 2001, 277). In Toward a Science of Translating (1964), Nida articulated the translation model of dynamic equivalence; later with his colleagues as forward thinkers, he established this model in The Theory and Practice of Translation (with Taber 1982); this was further developed into functional equivalence in From One Language to Another (with de Waard 1986). Nida’s translation approach became the theoretical and practical foundation for a science of translation, as Gentzler observed (2001, 45). Since the time of Nida, a rapid increase in training on translation principles
and a progression of communication and translation models has become apparent both in academia and in Bible translation.

*Placement and specifications.* Information technologies devised during WWII enhanced communication sciences by describing cognitive and linguistic processes of conversation. H. Paul Grice introduced the Cooperative Principle (1975), John Austin originated Speech Act Theory (1976), and together with John Searle and Peter Strawson set the basics for the *inferential* communication model (Braun 2001, 5–6; Halverson 2008, 344). This communication model was taken up by Dan Sperber and Deirdre Wilson (1986) and introduced to translation by Ernst-August Gutt (1991). Communication sciences became the wider framework to linguistics and other language-related sciences.

The science of translation as part of applied linguistics is located in pragmatics following Katharina Reiss and Hans Vermeer (1991). Werner Koller (1978) informs us that because of this, the focus broke down from the level of communication in general to all processes involved in “translating” and “translation” (cit. in Holmes 1988, 70; Mojola and Wendland 2003, 10–11).

The science of translation, as a recent scientific discipline, was divided by Holmes into the branches of descriptive and applied studies. The first was concerned with concrete translational phenomena, and the second related to translator training, translation criticism, and translation aids. Theo Hermans (1991), Stefano Arduini (2011), and Gideon Toury (1995) all emphasize that it is within descriptive studies that a general philosophy of translation and partial theories on specific issues are taking place.

A particular token of the science of translation is portrayed by its cross-cultural, or interdisciplinary, approach. Following Michael Carrithers, written or oral information—here understood as text in a wider sense—is transported in translation from one language area to
another, from one culture into another (1992, 19, 82). As a result, at least the culture of the “original text” and the translator are implicated in the process. In looking at ancient texts or larger translation projects, up to five cultures could be involved as indicated by Robert Bascom (2003) and by Nida’s earlier three-culture approach (1990). This is why translation, as part of communication sciences, surmounts individual and societal barriers by bringing together the disciplines of linguistics, sociolinguistics, cultural anthropology, communication and cognitive sciences, psychology, semiotics, and literary criticism. At first, scholars of translation tried to eliminate all influences from outside translation and translating to specify the scientific entitlement of a science of translation. Today, a holistic approach consolidates multiple disciplines as shown by scholars including Mia Vannerem and Mary Snell-Hornby (1986), Kurt Feyaerts (1992), and Stephen Littlejohn and Karen Foss (2008). Thus, the science of translation is part of other disciplines as a technical aid (e.g., in computer linguistics), or it uses other disciplines in the same way (e.g., cognitive anthropology).

*Ethics in the science of translation.* Power is exercised in translation by the translator and the client, affecting the original and translated text as well as the hearer or reader. Therefore the translator’s status as a professional practitioner demands ethics and clearly defined process-outlines. Both are central in functional approaches, expressed in the so-called “Hieronymic Oath” as Andrew Chesterman (2001) describes it. Steiner (1990) also requires high ethics of cross-cultural communication, as the translator mediates between his and the target texts’ culture and language. The translator serves like a “cultural mediator,” sitting on the fence of cultures, here understood as dynamic social units that are involved in the translation process (cf. Ronald Taft 1981; David Katan1999).
The science of translation is also built on ethical standards that relate to its cross-cultural and mediating operation between a source text and the target text. General ethical prerequisites concerning the science of translation are found in fidelity, adaptiveness, and intelligibility. International general and specific standards about ethics in translation are not only expressed by linguistic and translation associations, but also by Lawrence Venuti (1998) and Denis McQuail (2007), and by the claim of the “loyalty” principle between the original text and the translation as in Christiane Nord (2004).

**Theories of translation.** Due to its history in Bible translation, the most influential translation model is the dynamic or functional equivalence introduced by Nida and his colleagues. This model broke the mold of the literal or formal equivalence model, popular in translation at that time, by introducing anthropology, semantics, and linguistics to translation. New models refer to dynamic/functional equivalence by developing or refusing it. In either case, a redefinition of the translation process takes place. The first group leads to a variety of equivalence-oriented approaches as in Beekman and Callow (1974), Mildred Larson (1984), or recently Anthony Pym (2009) who divides equivalence into natural and directional approaches. The second group could now be split into skopos and functional models following Reiss and Vermeer (1991), Holz-Mäntthäri (1984) and Nord (2001; 2003); descriptive translation studies described by Toury (1995) and Peter Fawcett (1997); as well as reference frame-oriented approaches formulated by Katan (1999), Wilt (2003), and Wendland (2004); or those based on inference as relevance theory presented by Sperber and Wilson (1986) and Gutt (2000). The latter aspired to effect a paradigm shift in translation theory, declaring that all other models, based on the code-model of information technologies, fell short with regard to communication processes in translation. Epistemologically, the ostensive-inference theory in contrast to the code
model implements a positive approach to communicational processes. It presumes that communication is always successful given that the speaker provides the hearer with all information that is necessary for him/her to infer the intended meaning. Translation thereby seeks to produce successful communication, whereas the code-model, it is claimed, implies the conduit metaphor, in which information falls apart, and it is up to the hearer to decode the information, which is needed for him/her to understand.

According to Gentzler, two important shifts occurred in general translation theory occurred during the 20 c.: the shift from source-text oriented theories to target-text oriented theories; and the shift to include cultural factors in addition to linguistic elements in the translation training models (2001, 70). On epistemological grounds, a move from rational to intuitive and from literal-factual to historical-metaphorical translation can be observed, as shown by Marcus Borg (2001). One development in such directions is Albrecht Neubert’s top-down model as a turn towards modern linguistics assumes that the key to translation is the whole “text,” which the translator breaks down into smaller units (1986, 101).

Cultural approaches of translation as introduced by Katan and others, *skopos*-oriented and functional approaches, and relevance theory are nowadays discussed in the science of translation as the most effective approaches for the transfer of the cultural and linguistic context of a text to a translation text. Nonetheless, dynamic equivalence or related equivalence-based methods still stand their ground in the discipline of translation.

**Training of translators – triggering theories.** The training of translators at universities, private organizations, and within other training opportunities serves both as testing ground for theories and models and breeding ground for new concepts. While most training in the field of Bible translation is still based on the dynamic/functional equivalence approach, it proves
universally applicable, mainly without even recognizing that it serves an epistemological background as is shown by Yri (2003, 188–203), Pym (2007, 195–215), and Werner (2011, 198–204). Functional models still lack recognition in global translators’ training. Functional approaches are obviously leaning toward European, mainly German, training facilities at university level (e.g., University of Magdeburg), with some impact in East and South African centers. Training on translation principles in relevance theory is still in its beginning stages, and although training courses by SIL International are increasing (Hill 2008; et al. 2011), the continued influence of RT in the science of translation is not yet assured.

Translation quality assessment. Since its emergence, scholars of “the science of translation” have been discussing the improvement or quality of their product. In literacy this led to the term “quality assessment” of translation. As Baker and Malmkjaer (2001) have suggested, the discussion about quality concerns the process, the product, and the function of translation as a science. The question arises because of translation’s intuitive and artistic bias; thus, as a counterbalance it asks for objective scientific methods to increase quality. Nida was concerned about it in Bible translation (1964, 3–5), and Steiner (2004) announced its need on linguistic-philosophical grounds. Katharina Reiss (1971) and Juliane House (1977) laid the theoretical foundation of quality assessment, and Peter Newmark (1988) propagated its need. As observed by Nord, only in functional approaches was a complete recursive back-coupling model delivered (Nord 2003, 37–39). The assessment of translation quality becomes part of the process of translating. It can be included from outside the translation team by back translations discussed with consultants, or from inside the translation team by recursive procedures in which the team moves back and restarts the translation process at specific points after reflecting on the problems of the translation. Either way, the results are incorporated in a subsequent translation attempt.
Don Kiraly (2000) developed the social constructivist approach to increase translators’ ability and knowledge by going through team-based discussions for every step of the translation.

Despite its claim to include any reflection during the quality assessment in subsequent translation (e.g., House 1977, 7, 23, 246), translation quality assessment is criticized for its inadequacy in regard to the translators’ complex but uncontrollable cognitive efforts, as Koller has pointed out (1978, 90, 92, 105–106) and as Venuti reminds us (2008, 4, 50, 125).

**Outlook.** Current tendencies in the science of translation reveal that an increase in translation models stimulates translators and scholars to make use of a mixture of models, by picking out the most relevant translation approaches for their translation projects. Henceforth, it cannot be assumed that in translation training just one model will work for a whole project. Project-oriented selections lead to extensive training in the basics of translation and communication models, so translators can choose individually which approach works best for them. Cognitive sciences offer new ways of understanding communication processes and open the way for holistic approaches, thus their influence is growing.

Due to the huge impact of Bible translation—it's long-standing and important effects in world and church history—there is mutual benefit in collaboration between the science of translation and Bible translation. Both are interrelated as either discipline creates new models and establishes new principles of translation.

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