Message from the Chairs

Elections

It is our pleasure to congratulate the winners of the 2013 ILRIG elections:

Co-Chair: Wanita Scroggs, International Law Librarian and Adjunct Professor, Stetson University College of Law Library

Secretary: Marylin Raisch, Associate Law Librarian for International and Foreign Law, Georgetown Law Library

Treasurer: Gabriela Femenia, Foreign and International Law Librarian, University of Pennsylvania Law School, Biddle Law Library

Serving our diverse membership has brought great satisfaction to all of our retiring officers. We look forward to seeing where our new leadership will take the ILRIG as it continues to grow in size and prominence. Each position will serve a three year term starting in April, 2013.

ILRIG continues to seek interested individuals to serve as Newsletter Editors. These positions are appointed rather than elected; if interested, please notify one of the co-Chairs for details. Prior editions of the Informer are available through the ILRIG website: http://www.asil.org interest-groups-view.cfm?groupid=62

Research Kiosk

Now in its third year, the Research Kiosk will again be available at the ASIL Annual Meeting in Washington, D.C. The Research Liaison Program is a service through which ILRIG members provide on-site research assistance to speakers, panelists, and attendees of the meeting. The Kiosk will be open 9:30am-2:30pm, Thursday, April 4 and Friday, April 5.

The Kiosk would not be possible without the ILRIG members who staff it, and it is important to us that they are recognized for the time they dedicate to this unique ILRIG initiative. This year, ILRIG members who serve at the Kiosk will receive a 50% discount off their Annual Meeting registration fee.

We are also pleased to announce that this year’s Kiosk is sponsored by Cambridge. Cambridge will provide the Kiosk with all of its technology needs as well as complimentary access to Cambridge Books Online for our researchers. HeinOnline will additionally be providing complimentary access to their databases. We are so grateful to both Cambridge and HeinOnline for their generosity. These materials significantly enhance the services that our researchers are able to provide.

2013 Business Meeting & Discussion

In addition to conducting the business of installing new officers and attending to other administrative matters, ILRIG will host special guests Sonia Rolland and Mark Wojcik from the Teaching International Law Interest Group (TILIG), who will lead a discussion on the topic of teaching substantive international law in an advanced legal research class. We hope you can join us for what promises to be an informative conversation with our colleagues! Refreshments will be served.


**A Primer on Machine Translation (MT)**

Part I: A History of Machine Translation (MT), with a Select Bibliography of Law-Related Translation and History of MT Resources

By Don Ford and Matthew Gran


What have Jews, Catholics, Mormons, the United Nations, and the European Union all done to make your work easier?

This diversity of peoples and governments has contributed to the development of modern language translation protocols, including the development of machine translations of one language into another.

Translation refers to the written rendering of one language into another language. Usually, the item with the source language is in print or the “print” equivalent in electronic format, but it does not have to be (e.g., it can be a lecture or interview that is then transcribed). The target translation, however, is generally accepted to be a print or print-equivalent rendition of the source language, and is expected to have a very high degree of accuracy. This is in contrast to “interpretation,” which is the oral rendition of a source language statement into a target language. The interpretation can be simultaneous or consecutive. However, the degree of accuracy, while important, is not expected to reach the level found in translation.

Few people give much thought to “translation” issues in their everyday lives. But we live with translations all the time.

For example: In 2010 an almost half-century old translation effort of Jewish law (“Halakhah”) and legal commentary was completed. Israeli Rabbi Adin Steinsaltz completed the translation of the Babylonian Talmud from ancient Hebrew and

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1 Don Ford is an FCIL Librarian at the University of Iowa College of Law Library. Matthew Gran is a Reference Librarian at the John Marshall College of Law Library.


3 Another Talmud scholar and translator, Rabbi Jacob Neusner, writes, “The Talmud consists of a law code and a commentary on that code. The code is called the Mishnah (ca. 200 C.E.), a systematic exposition of sixty topics, and is held by Judaism to record the originally oral part of the Torah that was revealed
A Primer on MT, continued

Aramaic into modern Hebrew and English. Rabbi Steinsaltz began translating the Talmud into modern Hebrew in 1965, and completed his work in 2010. In addition, Steinsaltz provided his own commentary in addition to translating the comments of glossators from earlier centuries. Jewish believers can participate with a world-wide movement of Talmud readers who seek to read a page per day of Talmud. This “daf yomi” (literally “daily page”) results in a seven and ½ year cycle of Talmud reading. The Steinsaltz Talmud now joins other editions used by Jews who prefer using modern translations for their daf yomi.

Or this example: starting on the evening of Saturday, November 26, 2011, millions of English speaking Catholics world-wide encountered a revised English translation of the Catholic Mass. Users included not only speakers of English as a primary language, but speakers of English as a primary “interlanguage,” or “vehicular” language such as Nigerians, Indians, Sri Lankans, and Filipinos. The translation was controversial because it was replacing a forty year old translation of Latin to English that was made as a result of directives from the Catholic Church’s Second Vatican Council, touching on texts and rubrics (liturgical law) of the Mass. That original post-conciliar translation was made according to principles of “dynamic equivalence,” which received decades-long heated criticism from artistic, literary, and tradition-minded English speaking Catholics.

Both the Steinsaltz Talmud translation and the revised English language Roman Missal share the practice of “metaphrasing” in the translation of the Hebrew/Aramaic and Latin originals. Metaphrasing is essentially the literal, but artful, translation of original texts from one language into another, and is particularly useful in “literary” translation.

The translation culture of the Church of Jesus Christ of Latter-day Saints (Mormons) is unique its practical applications. The Church’s foreign language

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by God to Moses at Mount Sinai. The commentary is called the Gemara ([c]. 600 C.E.) and is organized around laws of the Mishnah and also contains compositions devoted to Scripture’s law and theology, which explain and amplify passages of the written part of the Torah of Sinai (known by Christianity as ‘the Old Testament’). Thus: the Mishnah + the Gemara = the Talmud. [emphasis in the original] The Mishnah is about life, and the Gemara is about the Mishnah and its law.” See JACOB NEUSNER, THE TALMUD: LAW, THEOLOGY, NARRATIVE: A SOURCEBOOK xii-xiii (2005). The two versions of the Talmud are the Jerusalem Talmud (redaction ca. 400 C.E.) and the Babylonian Talmud (redaction ca. 500 C.E.). “Both versions of the Talmud are written mostly in Aramaic.” See ALAN UNTERMANN, HISTORICAL DICTIONARY OF THE JEWS 168 (2011).

4 Adin Steinsaltz Translates Babylonian Talmud (PBS radio broadcast November 23, 2012).
5 Rabbi Adin Steinsaltz’s Historic Achievement Brings World Jewry Together on Nov 7 [sic], PR Newswire Association LLC, November 7, 2010.
6 Supra note 3.
8 See generally, INTERNATIONAL COMMITTEE ON ENGLISH IN THE LITURGY, ROMAN MISSAL: CHAPEL EDITION (2011).
9 An “interlanguage” is modern usage for what used to be called a “lingua franca” (a language used in common among speakers of other languages). The original “lingua franca” was actually “[A] ‘contact language’ made of simplified Arabic syntax and a vocabulary taken mostly from Italian and Spanish, used by Mediterranean sailors and traders from the Middle Ages to the dawn of the nineteenth century.” See DAVID BELLOS, IS THAT A FISH IN YOUR EAR? 13 (2011).
10 Id. at 14.
13 See PETER BURKE, CULTURAL TRANSLATION IN EARLY MODERN EUROPE 34 (2009).
proclivities grew out of its world-wide missionary work. The foreign missions served by young Mormons often involve intensive foreign language training. As a result, the Church’s Brigham Young University (BYU) has become well-known and regarded for its resources and approaches for learning foreign languages, including the cultural aspects of foreign language use, which has a direct impact on both interpretation and translation. More than twenty-five percent of BYU’s student body takes language courses each semester, compared to the national average of eight percent. In addition, BYU offers language courses in many of the world’s “smaller” languages, such as Afrikaans, Icelandic, and Welsh.

Most of the BYU students are native English speakers. However, this is not necessarily a handicap when it comes to written translations if translators speak the target language with native fluency. This is a widely-recognized translation principle: a good translator must have native fluency in the translation’s target language. Many of the BYU graduates have leveraged their facility (if not full fluency) in foreign languages in business. In fact, a Brookings Institution report was cited as crediting the foreign language training as having a positive impact on Utah’s strong export sector.

Translations in the “professions,” such as medicine, the sciences, and of course law, require literal translations, but ones nonetheless done with special sensitivity to professional contexts. In the case of law, historical context and practical applications are among the important subtexts to understand in order to produce accurate and authoritative legal translations. Traditional legal translating is best done by professionals with at least a background, if not training and practice, in the legal system in question, as well as in the legal system of the target audience.

Thus, having a background in law makes legal translating much easier. On the one hand this is burdensome, because the translator must not only have the language skills, but also the legal training and knowledge. However, the great advantage in doing legal translating, or any professional translating for that matter, is that the professions demand and involve a certain precision and context, both of which are easier to determine than in more literary or theological venues. This precision in turn makes possible the use of machine translation (MT) tools, in combination with the contextual and cultural usages of the relevant laws and languages. MT dictionaries and software give law librarians tools to leverage the law’s highly technical language and terms of art which have precise meanings according to their uses in context. The advances in computing and in data storage, comparisons, statistical analyses, and syndetic structures, have enabled the exponential development of electronic translation tools in the early 21st century. In turn, even free tools like Google Translate and Bing Translator have become viable options for the law librarian with a

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15 Thus arises a real test if someone has native level fluency in two or more languages: is the person capable of doing native-level writing in the target language?

A Primer on MT, *continued*

good working knowledge of the foreign language involved.

Familiar free MT tools such as Google Translate, Bing Translator, Systran, and commercial MT software, are the results of dogged research and development carried out over the last seventy years. To be sure, the theory of “universal languages” (a forerunner of MT) had origins at least as old as René Descartes and Gottfried Wilhelm von Leibniz.17 It was only in the 1930s, however, that the first patent applications for translating machines were submitted by the French-Armenian Georges Artsouni and the Russian Petr Trojanskij.18

MT’s rapid development started in the wake of the Second World War, a struggle in which linguists and languages played a great role, particularly in the field of codes and code encryption.19 After the war, the construction and successful operation of the first mainframe computers proved irresistible to linguists—and to governments finding themselves now in the midst of a “cold” war that followed the recent “hot” one.20

An MT catalyst for the main Cold War antagonists, the USSR and the USA, was understanding the scientific journal articles being published by each other, particularly as they related to the development of nuclear and hydrogen weapons. The US government was faced with a dilemma: good scientific translating (like its legal counterpart) is accomplished by someone with native-level knowledge of the target language combined with a professional knowledge of the scientific field in question. There were Russian-speaking émigré scientists in the US at that time, but their English skills were not those of native speakers. On the other hand, there was a paucity of native English speakers with the requisite Russian-language skills and the necessary scientific background. As Paul Bellos notes, “[T]he [US] authorities began to look toward machines. ‘There were good reasons to think they could help with the urgent task of tracking the Soviets’ ability to design an atomic bomb.’”21

The years 1946–1947 saw British computer scientist Andrew Booth of London University and mathematician Warren Weaver of the Rockefeller Foundation exploring the feasibility of using computers for automated translations.22 Warren Weaver, in considering translation from Chinese into English, considered the advances automated cryptology made during World War II, and speculated that cryptoologic principles could be adapted to automated translation.23 Weaver eventually met Booth when the latter visited the United States. Booth would eventually work on mechanical dictionaries and punched card word-for-word scientific translations. Weaver, who had collaborated with Claude Shannon on one of the first books on information theory, also communicated about MT with cyberneticist Norbert Wiener. Eventually, Weaver wrote a memorandum that is now

18 Id.
20 See generally id.
21 Id. at 248.
22 Hutchins, supra note 16, at 5.
23 Bellos, supra note 18, at 248.
A Primer on MT, continued

considered one of the “legacy” documents of MT. The memorandum was hopeful that logic and underlying linguistic principles supposedly common to all languages would enable MT to produce accurate translations.24

Another seminal figure in the early development of MT was Yehoshua Bar-Hillel, an Israeli polymath who became a pioneer in research on machine translation. Bar-Hillel gradually adopted the role of MT skeptic, believing that automation would help the translators, but never replace them. Bar-Hillel began his career in Israel studying the philosophy of language.25 He was heavily influenced by Rudolf Carnap and Hans Reichenbach, both leaders in the field of the philosophy of science and the movement of logical positivism.26 A fellowship he received in 1950 allowed Bar-Hillel to visit the United States and to work at both the University of Chicago and the Massachusetts Institute of Technology. Bar-Hillel quickly established himself as an aggregator of information and relationships among MT pioneers. In 1951 Bar-Hillel “wrote a state-of-the-art report, in which he outlined some of the basic approaches to MT questions.”27

In 1952 Bar-Hillel organized the first conference on machine translation (MT), held at the Massachusetts Institute of Technology.28 The conference attracted most of the Western scholars active in the MT field. Among them was Leon Dostert of Georgetown University, who would oversee Georgetown’s Institute of Languages and Linguistics, and served as the catalyst for what came to be known as “the Georgetown Project.” The Project was a collaboration with IBM that resulted in a demonstration at the Pentagon in 1959 of a translation of “100,000 running words in the field of organic chemistry[...] [S]entences in Russian went in one end of the computer and (reasonably) understandable English came out of the other.”29 MT pioneers Peter Garvin and Peter Toma (later of Systran) were part of the Georgetown Project.30

During the 1950s Soviet developments in MT proceeded in tandem with the US efforts. Dmitrij Panov started MT research at the Soviet Institut of Precision Mechanics and Computer Technology. A.A. Iiapunov and A.A. Reformatskij joined these Soviet efforts.31 By the late 1950s the Soviet Union had established the Thorez Institute for Foreign Languages, managed by Victor Rozencveijg, “who also initiated the Moscow-based Association for MT Problems.”32

At the end of the 1950s Bar-Hillel once again comprehensively studied MT progress, surveying the various developments.33 Bar-Hillel criticized what he saw as a

25 Id. at 299.
26 Id. Of interest to librarians and archivists: the University of Pittsburgh’s Hillman Library’s Carnap Collection houses Rudolf Carnap’s papers, which include items related to Hans Reichenbach and other members of the philosophy of science movement.
27 Id. at 6.
28 Id.
29 Id. at 94.
30 See generally id. at 91-94.
31 Id. at 6.
32 Id. at 7.
33 Id. at 8
perfectionist approach among MT scientists. This dichotomy between the realists and the perfectionists is captured in two acronyms that have come to be identified with MT. FAHQT stands for “fully automatic high quality translation,” and was the goal of the early developers who believed MT could be perfected relatively quickly. On the other hand, CAT, or “computer-aided translation,” was the goal of non-perfectionists like Bar-Hillel.

Ultimately, by the late 1960s and early 1970s, MT development slowed, as scientists realized that “linguistic descriptions” still could not do away with the illogicalities found and constantly developing in living languages. However, even in this more fallow period, the seeds of future dramatic developments were sown. Systran got its start in the late 1960s, and MT programs at Stanford and Brigham Young Universities led to developments in semantic-based MT (Stanford) and microcomputing (Brigham Young). The development of the internet and the World Wide Web provided MT developers with access to bodies of translations that could be developed into huge glossaries and electronic dictionaries, which could exponentially grow, all due to the equally exponential developments in microcomputing.

At the present time several persons stand out as developers of machine translation. Peter Toma, involved early on in MT, is a developer behind Systran’s MT tools. Google developers Sergei Brin and Larry Paige from the outset saw that language translation systems had to be developed in tandem with the Google language capabilities, and that the web itself would foster the evolution of MT through the harvesting of extant translations. Franz Josef Och, head of Google’s MT division, has overseen the end-of-decade exponential growth in accuracy and coverage of Google’s MT tools.

Google Translate (GT), in particular, is taking advantage of the “paired” translations of such agencies as the United Nations and the European Union. GT combs the paired translations, and by using statistics, is able to get relatively good results, particularly the more a language is translated. For example, French and German have high levels of translation into many other languages; Welsh does not.

Ultimately, CAT has taken precedence over FAHQT. Princeton linguistics professor and translation expert David Bellos notes, “It is easier to achieve good results from CAT when the input conforms not to a natural language in its raw and living state but to a restricted code, a delimited subspecies of a language.” Bellos adds, “Most companies that have global sales have house styles designed to help

34 Id. at 3.
35 BELLOS, supra note 18, at 252.
36 See generally id. at 251.
37 HUTCHINS, supra note 16, at 12.
39 Id.
40 BELLOS, supra note 18, at 254.
41 Id. at 209-213.
42 Id. at 252.
A Primer on MT, continued

computers translate their material.” However, from the perspective of a century hence, FAHQT may seem to have been an eminently feasible goal. In the meantime, the strides being made with CAT justify Bellos’s observation that, “Computer-aided human translation and human-aided computer translation are both substantial achievements, and without them the global flows of trade and information of the past few decades would not have been nearly so smooth.”

**In Part II of A Primer on Machine Translation (MT): The technical basics of machine translation. Plus, descriptions of databases and software of interest to FCIL Librarians and Information Professionals.**

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43 *Id. at 253.*
44 *Id.*
A Primer on MT, continued
Select Bibliography of Law-Related Translation and History of Machine Translation (MT) Resources

Monographs


A Primer on MT, continued


A Primer on MT, continued


**Periodicals**

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International Legal Research Group

The International Legal Research Interest Group (ILRIG) is dedicated primarily to its members' professional development in the areas of foreign, comparative, and international law (FCIL). ILRIG provides a forum for discussion among legal information professionals, legal scholars, and attorneys. ILRIG enhances its members' opportunities to share their knowledge about available FCIL resources, research methods, research techniques, and best practices. ILRIG organizes presentations, publishes a newsletter, and maintains a website that reflects the most recent developments in the legal research profession.

ILRIG members are particularly mindful of the interdisciplinary and multicultural aspects of contemporary foreign, comparative, and international law. Global legal policies and norms cannot exist without strong foundations built on exhaustive research. ILRIG is committed to being a forum for discussing ASIL's unique analytical needs.

ILRIG membership is open to all ASIL members. ILRIG should be of particular interest to:

- Law librarians
- Legal scholars
- Attorneys with FCIL practice issues
- Academic librarians
- Scholars working in political science, international relations, economics, and history
- Research professionals from government agencies, policy institutes, inter-governmental organizations, and non-governmental organizations

The Informer

The Informer is the bi-annual newsletter of the International Legal Research Interest Group (ILRIG). Any views expressed in this newsletter are those of the authors in their private capacities and do not purport to represent the official view of the ASIL or ILRIG.

Submissions are welcomed and will be published at the discretion of the editors. Essays or articles should relate to foreign, comparative, and international law (FCIL) resources, research methods, research techniques, and best practices.

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