"Et tu, ©ompute?"

or

Is Text Translation by Machines an Act of Breach or Revolution?

Abe Hsuan
Irwin & Hsuan LLP
abh@irwinhsuan.com
Walter Benjamin in Paris 1937, photographer unknown
From archive: dhm berlin
"The Translator's Task" (1923) ("Die Aufgabe des Übersetzers")

Benjamin posits that translation is not about achieving a stylistic or expressive fidelity to the original text . . .

"[a] real translation is transparent."

It renders the original in a "pure language,"

See Walter Benjamin, "The Task of the Translator" (introduction to a Baudelaire translation, 1923; text translated by Harry Zohn, 1968)
“a real translation is transparent”
like looking at the text through a window

Book Art created by Frances Kiernam
See http://www.franceskiernan.co.uk/page10.htm
“transparent rendering” is mostly how we think about translation as a legal matter.

Original author owns the work.

Translation is merely a re-rendering, the more faithful and accurate the better.
• Translations are governed by Copyright Law
• Treated as “derivative” or “adaptation” of original
• Original Author has exclusive rights to authorize translations
Newest Electronic Brain Even Translates Russian

The International Business Machines Corp. put its ingenious electronic brain to work on language today and came up with a new kind of translator.

Give the brain a sentence—any old sentence such as this one in Russian:

“MYKHAIL NAHODNOV POY VREMENNYE NA OBOLCHENIE KAPITON V NYEHSENNYI POYVYSHENIYI VOPRUSOV.”

It’ll be back at you in English in 19 seconds.

The arrangement is mostly the doing of Dr. Leon Dostert, chairman of Georgetown University’s Institute of Languages and Linguistics, and Dr. Chubert C. Hurd, director of IBM’s applied science divisions.

What Dostert, Hurd and their aides have done is produce an electronic “pony”—that little book you used back in high school to help you pass your Latin course. This one’s a bit larger, though.

It consists of 12 machines weighing tons each and was produced last year by IBM as its type 701 electronic data processor. Type 701 is the rig that takes seconds to do an equation that would take you a lifetime.

** **

JOINING IN TODAY’S public unveiling as a translator at IBM headquarters today was Thomas J. Watson, IBM board chairman.

“I see in this an instrument that will be helpful in working out the problems of world peace,” he declared. “We must do everything possible to get the people of the world to understand each other as quickly as possible.”

Dostert, who was in charge of installing the original simultaneous translation system at the United Nations, echoed the thought.

Frank James White, recently returned in a British ship available

The snow that took over in this area this past weekend ranged from two to four inches; it even had the audacity to fall in places where there were no ski lows. However, Speculator received about six inches, putting the Oak Mountain Ski Center in business. Alpine Meadows had only a two-inch coverage; Pico Peak received about the same, and was unable to turn a wheel on either the lift or the tow.

** **

EARLY SUNDAY MORNING, took off for Mad River Glen a Waitsfield Vt. Rain started to fall by the time I arrived at Green Fields, and as I entered Rutland I must have passed through the cold front, because the rain began to freeze on the road and the wind shield, making driving a bit hazardous. On the way up the mountains to Pico, the low-lying clouds brought the visibility down near zero, but as I started up onto the weather cleared, and I even had a peek at theusing mid-station down to the base. Both trails were rather worn, but it was possible to enjoy yourself by picking your way down.

During the past summer, the Camelback had been groomed with grading and blasting; otherwise, it would have been impossible to ski with so little snow. There was as much as twenty inches of snow earlier in the season, but rain had washed some of it away. The snow that fell while I was there improved conditions considerably; that bare grass I saw in the morning had been completely covered before

_SCHENECTADY GAZETTE, FRIDAY, JANUARY 8, 1954_

_SKI TRAILS_

by LLOYD LAMBERT

_Skis and Poole insurance Tel. 47751 148 Clifton St.

From Google
The attached memorandum on translation ... by the use of modern computing devices of very high speed, capacity, and logical flexibility, has been written with one hope only - that it might possibly serve in some small way as a stimulus to someone else, who would have the techniques, the knowledge, and the imagination to do something about it.
“In 1954 IBM and Georgetown University demonstrated the translation of more than 60 sentences from Russian into English. The IBM press release, dated January 8, 1954, glowed: “Russian was translated into English by an electronic ‘brain’ today for the first time.” The military defense community and computer scientists expected routine machine translation within five years, but it never materialized.”

From: “The Elusive Goal of Machine Translation” by Gary Stix

Scientific American (March 2006)
“Transparent” is the goal
Reality is translucent

FAHQT - Fully-Automated, High Quality Translation

NHQ - Near Human Quality

MATPUT - Maximum Assistance in Text Processing, Understanding and Translating

MAHT -- Machine-Aided Human Translation

HAMT -- Human-Aided Machine Translation

What inspired Weaver?

WARREN WEAVER: “A most serious problem, for UNESCO and for the constructive and peaceful future of the planet, is the problem of translation, as it unavoidably affects the communication between peoples.”

NORBERT WIENER: “mechanization of language...seems very premature. By the way, I have been fascinated by ... the wiring diagram of [this] apparatus [that] turns out to be surprisingly like the microscopic analogy of the visual cortex in the brain.”

http://owpdb.mfo.de/detail?photo_id=4520
Nobert Wiener Father of Cybernetics

Cybernetics
or CONTROL and COMMUNICATION in THE ANIMAL and THE MACHINE
By NORBERT WIENER

The human use of human beings
CYBERNETICS AND SOCIETY
Norbert Wiener
Globalization driver

“....the intensification of worldwide social relations which link distant localities in such a way that local happenings are shaped by events occurring many miles away and vice versa.”

Anthony Giddens, Director of the London School of Economics
Internet Users by Language
2011-in million users

<table>
<thead>
<tr>
<th>Language</th>
<th>Million Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>565</td>
</tr>
<tr>
<td>Chinese</td>
<td>510</td>
</tr>
<tr>
<td>Spanish</td>
<td>165</td>
</tr>
<tr>
<td>Japanese</td>
<td>99.2</td>
</tr>
<tr>
<td>Portuguese</td>
<td>82.6</td>
</tr>
<tr>
<td>German</td>
<td>75.4</td>
</tr>
<tr>
<td>Arabic</td>
<td>65.4</td>
</tr>
<tr>
<td>French</td>
<td>59.8</td>
</tr>
<tr>
<td>Russian</td>
<td>59.7</td>
</tr>
<tr>
<td>Korean</td>
<td>39.4</td>
</tr>
<tr>
<td>Other Languages</td>
<td>350.6</td>
</tr>
</tbody>
</table>
**Top Languages Spoken**

English is the official language of Facebook Nation, but over 10M people each speak Spanish, Indonesian, Turkish, French, Italian, German, and Arabic.
# List of countries on Facebook

<table>
<thead>
<tr>
<th>#</th>
<th>Country</th>
<th>Users</th>
<th>Change</th>
<th>(± %)</th>
<th>Pen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>United States</td>
<td>157,412,260</td>
<td>+4,515,060</td>
<td>+2.95%</td>
<td>50.74%</td>
</tr>
<tr>
<td>2.</td>
<td>Indonesia</td>
<td>41,774,960</td>
<td>+2,580,980</td>
<td>+6.59%</td>
<td>17.19%</td>
</tr>
<tr>
<td>3.</td>
<td>India</td>
<td>41,399,720</td>
<td>+10,192,140</td>
<td>+32.66%</td>
<td>3.53%</td>
</tr>
<tr>
<td>4.</td>
<td>Brazil</td>
<td>35,158,740</td>
<td>+12,468,960</td>
<td>+54.95%</td>
<td>17.48%</td>
</tr>
<tr>
<td>5.</td>
<td>Mexico</td>
<td>30,985,340</td>
<td>+3,656,160</td>
<td>+13.38%</td>
<td>27.55%</td>
</tr>
<tr>
<td>6.</td>
<td>Turkey</td>
<td>30,963,100</td>
<td>+1,265,620</td>
<td>+4.26%</td>
<td>39.80%</td>
</tr>
<tr>
<td>7.</td>
<td>United Kingdom</td>
<td>30,470,400</td>
<td>+617,380</td>
<td>+2.07%</td>
<td>48.87%</td>
</tr>
<tr>
<td>8.</td>
<td>Philippines</td>
<td>27,028,700</td>
<td>+1,493,580</td>
<td>+5.85%</td>
<td>27.06%</td>
</tr>
<tr>
<td>9.</td>
<td>France</td>
<td>23,548,000</td>
<td>+849,060</td>
<td>+3.74%</td>
<td>36.36%</td>
</tr>
<tr>
<td>10.</td>
<td>Germany</td>
<td>22,125,900</td>
<td>+2,128,200</td>
<td>+10.64%</td>
<td>26.89%</td>
</tr>
</tbody>
</table>
Over 7,000 languages in the world

- English (800 MM to 1.8 bn)
- Chinese (1.3 bn users)
- Hindi (800 MM users)
- Arabic (530 MM)
- Spanish (350 MM)
- Russian (280 MM)
- Urdu (180 MM)
- French (175 MM)
- Japanese (130 MM)

90% of world

According to Census of India of 2001:
- 30 languages spoken by one million+ native speakers
- 122 by more than 10,000
- Over 2000 dialects

9 in 10 Internet users in the EU said that, *when given a choice of languages, they always visited a website in their own language*. Only half would accept using an English version of a website if it was not available in their own language.

From “Flash Eurobarometer: User Language Preferences Online, Gallup (May 2011)
“with regard to the issue of the reception levels, I have the following theory: if you translate properly, the resulting text should include all the possible readings...”

Salvador Oliva
Translator of Shakespeare into Catalan
Translation as a “Mirror”

Hold the mirror like this.

From The Magic Mirror Book, by Marion Walter, Scholastic, 1971
“A real translation is transparent; it does not cover the original, does not black its light, but allows the pure language, as though reinforced by its own medium to shine upon the original all the more fully.”
Prior to circa 1910, a translation was not a “copy” under Copyright Law

Judge in 1853 opinion in Stowe vs. F.W. Thomas over German translation of Uncle Tom’s Cabin:

“a translation required genius in its construction... where the genius of the translator is called forth, there he is himself an author and his translation an original work”

(quoted by The spread of novels: translation and prose fiction in the eighteenth century By Mary Helen McMurrnan (p 179, n 93)
Copyright (i.e., as intangible property right) is a “modern” concept

- 1450 – Gutenberg Press invented
- 1501 – Printing presses in 280+ European cities
- 1710 – England enacts “Statute of Anne”
- 1886 – Berne Convention
- 1896 – Berne Revision
- 1908 – Another Berne Revision
- 1909 US & 1911 UK Copyright
Despite wavering from 1886 to 1908, Berne finally settled on clear rights ... or maybe not

- **Article 2(3):** Translations ... shall be protected as original works without prejudice to the copyright in the original work.

- **Article 8:** Authors ... shall enjoy the exclusive right of making and of authorizing the translation of their works throughout the term of protection of their rights in the original works.
Ambivalence arising out of a balancing of competing policies/concerns

<table>
<thead>
<tr>
<th>Original Work</th>
<th>Derivative Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expression</td>
<td>Ideas/Facts</td>
</tr>
<tr>
<td>Author Monopoly</td>
<td>Knowledge Commons</td>
</tr>
<tr>
<td>Past Economics</td>
<td>Future Economics</td>
</tr>
<tr>
<td>Authenticity</td>
<td>Accuracy</td>
</tr>
<tr>
<td>Work of “genius”</td>
<td>Workman-like (for-Hire)</td>
</tr>
<tr>
<td>Art</td>
<td>Science</td>
</tr>
<tr>
<td>Exporters</td>
<td>Importers</td>
</tr>
</tbody>
</table>
THE INTELLECTUAL COMMONS

Copyright Protected

Ideas
Insubstantial Parts
Permitted Acts
Public Policy and Public Interest

Public Domain

The Undisclosed Domain

Translation (the old fashioned way)

• According to the U.S. Bureau of Labor Statistics, translators and interpreters are one of the fastest growing occupations, through 2018.

• In May 2010, ~44K “translators and interpreters” making average $24/hour, averaging annual salary of ~US$50,000

• It all adds up: Global market for translation estimated at US$3 billion (supporting nearly 60k people and 45k businesses) (IBISWorld)
## Top 5 Translation Service Providers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company</th>
<th>HQ Country</th>
<th>Revenue in US$M</th>
<th>Employ</th>
<th>Offices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lionbridge Technologies</td>
<td>US</td>
<td>US$ 405.0</td>
<td>4000</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>L-3</td>
<td>US</td>
<td>US$ 372.3</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>3</td>
<td>SDL International</td>
<td>UK</td>
<td>US$ 142.9</td>
<td>1500</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>TransPerfect/Translations</td>
<td>US</td>
<td>US$ 74.0</td>
<td>385</td>
<td>30</td>
</tr>
<tr>
<td>5</td>
<td>RWS Group</td>
<td>UK</td>
<td>US$ 66.4</td>
<td>332</td>
<td>8</td>
</tr>
</tbody>
</table>
Example of a “Top 100” Global Brand: Philips Consumer Lifestyle Group

- Based in Netherlands, with 115,000+ multinational workforce across 60 countries
- Brand activity in 100 countries across 50,000 products, from medical diagnostic imaging, patient monitoring systems, energy efficient lighting solutions, and lifestyle solutions for personal well-being.
- Multilingual product content in 57 countries, translated into 35+ languages, processing over 150 million words in 2008
“Translation Machine”

Shown at the 1937 Exposition internationale des arts et techniques
From Chaplin’s Modern Times (1936)
Machine as Driver of Commerce
Machine as Liberator

Modern Times (1936)  The Great Dictator (1940)
"Et tu, Brute."

Orig: "καὶ σὺ τέκνον"

as translated by William Shakespeare
Translation as a “dagger”

From http://faculty.maxwell.syr.edu/gaddis/hst210/nov6/default.htm
Translation as a scapel
“A real translation is transparent; it does not cover the original, does not black its light, but allows the pure language, as though reinforced by its own medium to shine upon the original all the more fully. This may be achieved, above all, by a literal rendering of the syntax which proves words rather than sentences to be the primary element of the translator.”

Text translated by Harry Zohn, 1968
“words rather than sentences”
“Scalpel”ing the essential ideas out of the realm of language

© Su Blackwell  http://www.sublackwell.co.uk/portfolio-book-cut-sculpture/
THE INTELLECTUAL COMMONS

Copyright Protected
Ideas
Insubstantial Parts
Permitted Acts
Public Policy and Public Interest

Public Domain

The Undisclosed Domain

Value of “open” knowledge

Study by Computer & Communication Industry Association based on 2007 data

- Fair use access generated est. $4.4 trillion in revenue
- Accounts for about one sixth of U.S. gross domestic product (GDP)
- Employing more than 17 million workers
From “Rights Statement on Web of Data” Leigh Dodds, Talis
THE INTELLECTUAL COMMONS

Copyright Protected

Ideas
Insubstantial Parts
Permitted Acts
Public Policy and Public Interest

Public Domain

The Undisclosed Domain

Person who operates the machine
Person who builds the machine
The machine
“Computer-Generated Works”

“In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”

U.K. Copyright, Designs and Patents Act, 1988, ch. 48, §§ 9(3)
U.S. Copyright Office’s “Compendium”

“In order to be entitled to copyright registration, a work must be the product of human authorship. Works produced by mechanical processes or random selection without any contribution by a human author are not registrable.”
No one owns what the machine creates
Anticipates (and reflects) our ambivalence over a cybernetic future
"I have worried a good deal about the probable naivete of the ideas here presented; but the subject seems to me so important that I am willing to expose my ignorance, hoping that it will be slightly shielded by my intentions."
“Where a text is identical with truth or dogma, where it is supposed to be "the true language"… this text is unconditionally translatable. In such case translations are called for only because of the plurality of languages. Just as, in the original, language and revelation are one without any tension...“
THANK YOU

Abe Hsuan
Irwin & Hsuan LLP
abh@irwinhsuan.com