Mediation: the story of just one number

Copernicus of Kraków
New eyes, new worlds, new words

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“Words are the signs of ideas”

“The great consolation in life is to say what one thinks.”

Voltaire (1765)

“Language is the light of reason.”

Dr. Johnson (1709-1784)
CEFR Mediation – activities & strategies:

Mediation Activities

Relational Mediation
- Establishing a positive atmosphere
- Creating intercultural space
- Facilitating collaborative interaction with peers
- Managing plenary and group interaction
- Resolving delicate situations and disagreements

Cognitive Mediation
- Constructing meaning
  - Collaborating to construct meaning
  - Generating conceptual talk
- Conveying received information
  - Spoken
    - Relaying specific information
    - Explaining data (e.g. in graphs, diagrams, charts etc.)
    - Processing text
    - Interpreting
    - Spoken translation of written text (Sight translation)
  - Written
    - Relaying specific information
    - Explaining data (e.g. in graphs, diagrams, charts etc.)
    - Processing text
    - Translating
<table>
<thead>
<tr>
<th>Task</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending business meetings</td>
<td>65</td>
<td>18</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Maintaining international relations, travelling</td>
<td>59</td>
<td>18</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Presenting company, products, services</td>
<td>55</td>
<td>23</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Using multilingual communications</td>
<td>52</td>
<td>24</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Attending trade fairs, conferences, congresses</td>
<td>50</td>
<td>20</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Preparing communication material</td>
<td>50</td>
<td>23</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Interacting socially with customers</td>
<td>50</td>
<td>24</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Retrieving and using business/technical language</td>
<td>42</td>
<td>26</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Interacting in teams/with colleagues</td>
<td>40</td>
<td>19</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Preparing internal operational procedures</td>
<td>38</td>
<td>16</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Responding to and presenting offers/bids</td>
<td>37</td>
<td>20</td>
<td>19</td>
<td>7</td>
</tr>
<tr>
<td>Managing multilingual website</td>
<td>37</td>
<td>18</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Reporting: market analysis, policy products</td>
<td>35</td>
<td>18</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Installing and maintaining company products</td>
<td>28</td>
<td>17</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>

**KEY**

- Purple: Yes
- Pink: No
- Orange: Maybe
- Grey: Don't Know
Petrarch
1304 - 1374
Consider your origins: you were not made to live as brutes, but to follow virtue and knowledge.
Shakespeare – forensic reconstruction
THE HOLY BIBLE,
Conteyning the Old Testament,
AND THE NEW:

Newly Translated out of the Original Tongues, and with the former Translations diligently compared and revised by the most learned Divines.


England, Printed at London for Robert Darler Printer to the King and Court of Munition.

Anno Dom. 1694.
Polyphiloprogenitive ..
(T.S. Eliot)

“Lost in Translation...”

In the beginning was the Word
In principio era il Verbo
(from *logos*...)

The Via Francigena
The Pilgrim’s path from England to Rome
Arabic numerals e.g. 1599 – and etymologies

- Algebra
- Arithmetic
- Alchemy, chemistry
- Algorithm
- Adobe, admiral, albatross, alcohol, alcove, alkali, apricot, arsenal, artichoke, assassin, aubergine, average, azimuth, azure ...
الجAvg.1

الأدوية المثالية

الجAvg.2
“Art is never finished, only abandoned.”

“Sempre la pratica dev'essere edificata sopra la buona teorica.”

Leonardo da Vinci
Gunpowder Plot – 5 November 1605
Early Human Migration to 10,000 years ago

- 400,000 years ago
- 1.8 million years ago
- 1.5 million years ago
- 3.6 million years ago
- 700,000 years ago
- 21,000 years ago
- 700,000 years ago
- 11,900 years ago
- 11,000 years ago
- 23,000 years ago
- 120,000 years ago
- 33,000 years ago
- 12,500 years ago
- 12,000 years ago

Legend:
- Fossil site
- Migration route
- Ancient coastline
- Extent of last glacier, 18,000 B.C.
- Land exposed by lower sea level, 18,000 B.C.
Similarly 3 spirals in the pineapple, which are adjacent numbers in the Fibonacci series 5 8 13.
Art & Architecture

- 1, 2, 3, 5, 8, 13, 21, 34, 55, ...
- **Fibonacci** sequence – called Fibonacci numbers
- Leonardo Bonacci – "the most talented Western mathematician of the Middle Ages" c 1175 – c 1250 (*cf* Dante b 1265)
- Renaissance concept (Fibonacci from Pisa)
- The sequence was already well-known in India - **Virahaṅka** (between a.d. 600 and 800)
1202 - Liber Abaci ("The Book of Calculation") is a historic book on arithmetic by Leonardo of Pisa, posthumously known as Fibonacci.
1202 - *Liber Abaci* ("The Book of Calculation")

- «Novem figure indorum he sunt 9 8 7 6 5 4 3 2 1. Cum his itaque novem figuris, et cum hoc signo 0, quod arabice *zephirum* appellatur, scribitur quilibet numerus, ut inferius demonstratur.»

1202 - *Liber Abaci* ("The Book of Calculation")

- "The nine Indian figures are:
- $9 \ 8 \ 7 \ 6 \ 5 \ 4 \ 3 \ 2 \ 1$
- With these nine figures, and with the sign $0$ which the Arabs call *zephir* any number whatsoever is written.
• **zero** (cf.)
• Sanskrit शून्य (śūnya),
• Arabic صفر (sefr),
• Hebrew אפס (éfes),
• Greek μηδέν – ‘miden’
  [to be understood as *nothing, null*]
The word zero came into the English language via French zéro from Italian zero, Italian contraction of Venetian zevero form of Italian zefiro via ṣafira or ṣifr.

In pre-Islamic time the word ṣifr (Arabic صفر) had the meaning "empty".

*Sifr* evolved to mean zero when it was used to translate śūnya (Sanskrit: शून्य) from India.

The first known English use of zero was in 1598.

The Italian mathematician Fibonacci (c. 1170–1250), who grew up in North Africa and is credited with introducing the decimal system to Europe, used the term zephyrum.

This became zefiro in Italian, and was then contracted to zero in Venetian. The Italian word zefiro was already in existence (meaning "west wind" from Latin and Greek zephyrus)...
De revolutionibus orbium coelestium (On the Revolutions of the Celestial Spheres), published just before his death in 1543 ...
Copernicus - "Torun portrait"
(anonymous, c. 1580)
is the symbol for phi, pronounced “fī” and shown here as a dotted line. Phi is an irrational number that is approximately 1.6180339887. Any number in the Fibonacci sequence divided by the number before it, shown here as a solid line, approaches phi.
Neologisms? – becoming everyday language

- barbecue
- tattoo
- zero
- saga
- cruise
- shampoo
- cravat
- penguin
- bistro
- mosquito

- Native Cuban
- Polynesian
- Arabic
- Icelandic
- Dutch
- Hindi
- Croatian
- Welsh
- Russian
- Spanish
Above: the result of experiments where people were confronted with simple reading (left picture) or simple listening (right picture) tasks. Amount of activity in different areas of the brain is shown by color shades. High activity is yellow, low activity is blue. Other colors mark a range of intermediate degrees of activity (see legend to the top right).

We can clearly see that different language activities are handled in different areas of the human brain.

What will happen if we present two tasks simultaneously?
Via del Pane
Trieste
Three quarks for Muster Mark!
Sure he has not got much of a bark
And sure any he has it’s all beside the mark.

James Joyce Finnegans Wake
mediated by
Murray Gell Mann
Proton

$U = \text{"up" quark} + \frac{2}{3} e$

$D = \text{"down" quark} - \frac{1}{3} e$

Neutron

Equals

Kraków | 21-23 November, 2019
Language is culture – telling a big truth

- “Language must shows a man Speak that I may see thee”
  
  *Ben Jonson*

- The original meaning of Theatre

- ‘Darkness at Noon’ ➔ ‘Midnight’s Children’

- “The historian speaks of what has happened, the poet of what *can* happen”
  
  *Aristotle – Poetics*
As pine trees
Hold the wind’s imprint
After the wind is gone, is no longer there
So words
Retain a man’s imprint
After the man is gone, is no longer there.

George Seferis (Greek Poet – 1966).
Any questions?
40° Anniversary AGM
Trieste
7-9 Novembre 2019