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Diasemiotic translation of neuro-diagnostic tools into Greek

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Την μετάφραση του κειμένου στην Αγγλική συνέταξαν οι Αλέκα Στέλα, Δήμητρα Αντωνίου και Δέσποινα Πασσαλή.

Translated neuro-diagnostic tools, which assess cognitive skills, call for authors, readers, translators, evaluators for the quality of translations, neuro-scientists and examinees as users.

The quality of translation concerns society in total, but especially the professional world, which uses translated neuro-diagnostic tools, examinees and their relatives. Through this perspective, improving the translated tests became a priority objective for their translators. In the circles of neuroscientists, complexity and importance of the translation work is highly recognised, because the majority of the tests are translated from foreign languages into the Greek language, as other cultural products in the Greek linguistic and cultural community. Given that the final translational communication, when used in a diagnostic context, is done by a cultural setting [consciously or not], is expressed in a linguistic, paralinguistic and extra linguistic way [with behaviors or not] it is affected by the natural and artificial environment. Following Petrilli (2013), we are believe that the translation of diagnostic tools affects the receivers as inners and outers, hence the examinees as inners and outers too, in which the examinee is self-revealed.

The validity in the control of translated linguistic competence tests in neuroscience

Today in Greece, tests translated into Greek, or translated from Greek into other languages most times tend to be mostly products of cross-lingual and cross-cultural transfer. An environment where tests are translated aiming to cross-language and cross-cultural acceptance, is the Greek

Society of Alzheimer's disease. This is neither local nor our only conquer: Recently, it has been universally recognized that the introduction of translated diagnostic tools is full of translation difficulties due to cultural and linguistic divergences of the source and target text in the tests. In Parham et al (2002) the management of translation difficulties and cultural tension is recognized as a major problem because of the cross-cultural divergences in diagnostic tests e.g. professional therapy.

The Translation Studies' debate on the subject is summarized by Su and Parham (2002) in the following points of translation difficulties:

1. Absence of translation equivalents [e.g. The term <freedom rider>, a civil rights activist who rides interstate buses into the segregated southern United States, has no Spanish equivalent because it is a translation unit that does not have a formalistic equivalent in Spanish].

2. Existence of deficiencies in the evaluation of tests when there are no controls of culture defined function of the translation in comparison to the original texts (source texts). In other words, the texts are translated literally through cross-lingual approaches without taking into consideration points of cultural translational empathy towards the community, which accepts the translations.

3. Existence of technical problems due to:

3a. The difficulty of finding cross-lingual translation equivalents.

3b. Morphosyntactic linguistic asymmetries between source and target linguistic systems.

3c. The difficulty of finding cross-cultural translation equivalents [e.g. Since 1993, the translation unit <swimming in lakes> cannot be literally translated in Puerto Rico because swimming is prohibited in lakes owing to health safety reasons].

4. Solving technical problems with cross-cultural translation

In the USA, from 1972 to 1993, the translation difficulties, referred to n. 3, especially in the health sector, were resolved as follows:

4a. Pre-translation understanding of the reasons why a word or phrase is included in a diagnostic test.

4b. Initial intra-lingual translational control within the functional axis of the linguistic and cultural components of the source text, meaning, not a recursive redirection of translation in the source text, despite the prevailing pedagogical research [back translation] of that period, but a combined alternating interpretative and formalistic analysis of the status of the source text.

4c. Translational consolidation of the target language with cross-cultural empathy.

4d. (e.) Post translational assessment of the translation, in comparison to the original, by 2 native speakers of the languages of the source and target text.

The framework for defining validity in Greece, regardless of the typology used to measure the translated diagnostic tools' quality, follows, even nowadays, functional criteria of general validity related to evaluation of foreign language teaching. For example, Tsopanoglou (2010) states the following about certification of foreign language proficiency: "Valid is considered every test that measures what it is supposed to measure." Since 2003, this acknowledgment has been used by neuroscientists in comparative evaluation of translated tests, using the convergence of the final measurements of Mini Mental [MMSE] as a stable reliability factor.

Innovation in translating diagnostic tests

Under the rapid increase of elderly people suffering from dementia, there is an urgent need for strict and reliable methods in evaluating the cognitive state and premorbid IQ, like the diagnostic tools of lexical decision. In this field, interculturally functional translation approaches are being developed, as well as translation products, under strictly formalistic criteria.

The ideal example for describing the combination of formalistic and functional priorities is the translation of SLDT in Greek. Amlkvist, Adveen, et al (2007) describe the original trial of SLDT (Swedish Lexical Decision Test) and its quality measurement. This lexical decision test contained in its original version 58 worlds (33 words and 25 pseudo-words, after editing 240 words which fulfill the following formalistic criteria: They are non-monosyllabic words, they are words from 3 to 15 letters, they are not compound words, they do not belong to the same topic, they are words with increasing difficulty (Kapetanidou M., M. Tymviou, E. Kasapi, K. Soubourou, F. Kounti, et M. Tsolaki, 2012).

The last few years, the Greek scientific community is attempting to measure the translation quality of Amlkvist, Adveen, et al. test in Greek. The translation was based on the aforementioned formalistic microtextual guidelines provided by the original test's group of experts. These guidelines defined the form and the content of the translated diagnostic tool, without consolidating a Greek translation by a word-to-word transfer of the original Swedish test.

The greatest part of the interdisciplinary research related to the use and validity of the translated premorbid IQ diagnostic tool, has been focused on the measurement process of the translation quality.

Apart from the differentiation between the two linguistic systems, cultural difficulties have emerged during the various evaluation stages of the translated test. This has been found through microtextual observations made by the researchers in relation to specific lexical units, which had the following characteristics: they were abstract, or had prefixes, they belonged to a more formal content, they had many syllables, like for example in words "προσπέραση" (overtaking), "επιμερισμός" (allocation), "σύντμηση" (abbreviation), "περίοπτη" (prominent) or in the word "ενδελεχώς" (meticulously) etc. In such cases, there have been observed many answers "I don't know" or wrong answers, which showed that the translated item has not been understood by all participants [candidates] (Neofytidou, Ponos et al. 2016, in greek).

The results concluded that the translated version of the test as well as the original SLDT (2009) are able to predict the premorbid cognitive state. This tool can be used at the stage of prevention in order to evaluate the cognitive state of the participants and at a long range, to fulfill its functional purpose, like it has been contrastively shown by the convergence of the results with Mini Mental (MMSE, trial adjusted to the Greek population {5}{6} according to Fountoulaki, et al., 1994, 2000).

The difficulties that participants faced, led to the assumption that, probably, such difficulties derive from the use of vocabulary that comes from corpora of written texts, like the Hellenic National Corpus, where the initial translation was taken from. Furthermore, it is assumed that there is a necessity for a new translation based on oral speech vocabulary, which will reflect the level of discourse of the elder participants.

Key condition under which the formation of the new translated diagnostic tool can be created, was to build first an electronic database for linguistic data mining and, foremost, for extracting lexical units that senior speakers use. In this database, every word said and the way it is said would be recorded, in terms both of its morphology and its frequency.

Within this sociolinguistic framework, the aim was to study the speech and language expressed by the subjects of a particular social group, who are in their middle and late adulthood. In order to collect the data, the research group used open-ended questions so that the interviewees could narrate and express themselves freely, giving a verbal representation of their reality.

More specifically, in their narratives the participants discussed their daily routine, the structure of their family and their current marital status, the way they spend their time either at work or during their leisure time and basically anything they find satisfactory in their life. They also talked about their everyday difficulties along with the means they employ to overcome them. This research approach aimed at studying the oral language and vocabulary as to the frequency

and use of the collected words. The participants in the survey agreed to their narratives being recorded.

The narratives were transcribed word for word and processed using a special software developed by the Department of Applied Informatics at the University of Macedonia, Thessaloniki. This software receives input text data which is are separated in cognitive units and read sequentially by an algorithm in Java language.

The methodology employed for the processing of the transcribed texts includes 3 stages:

1. automatic processing of transcriptions
2. saving words and cognitive units to the Database
3. building an Internet application

Building an Internet application

The last stage of the methodology includes the development of an internet application, through which the user can see the frequency of each word as well as the related conceptual units.

Then, when choosing one of them, e.g. the word “Problems”, the user can see all the conceptual units which this word is connected with.

It was noted that in the database, which was the result of the overall recording of spoken words, there were words with more pragmatic content and less abstractiveness, which is a linguistic feature connected to academic, specialized language. Therefore, there were more words like mirror, bank book, degree, rule, income, administrator, song and fewer words with formal or abstract meaning, like the ones presented in the translated into Greek Premorbid IQ Test, such as expansion, contraction, prestigious, reconstruction, validity, words that are primarily presented in written language. In order to build the new translated tool, the words were studied

in detail both qualitatively and quantitatively in terms of their frequency[1] and various linguistic features (prefix, number of syllables, part of speech, pragmatic value). This helped develop a tool of lexical decision, which will validly diagnose, without excluding subjects based on their limited educational background.

In conclusion, this new translation and its evaluation rely on the study of the spoken language of the elderly, which is collected through interviews, in order to code and decode it based on how frequent the oral vocabulary is used. It is clear that the development of the lexical units mining database can be continually enriched with more spoken language linguistic material, through narratives which reflect not only the formalistic but the cultural aspects of the spoken language as well. The ultimate result of this natural language data mining and its related translation products is that the Greek medical community will be further equipped with cognitive lexicon tests intended exclusively for the Greek language community. Therefore, in this way, the functional and formalistic translation of the tests contributes to the development of original diagnostic tools in the Greek language.

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[1] The frequency of the words which will be examined is the one presented in the database of the elderly spoken language, the National Thesaurus of the Greek Language (HNC), and the Num Online Tool database (speech.ilsp.gr/iplr/NumTool.aspx) according to Protopappas, Tzakosta, e al. (2012), which studies the frequency of existing and non-existing words.

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