Michela steno international alphabet and universal language: an idea still current

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(diapo 2) In 1882 Antonio Michela published (in French to save on printing costs) his "Manuel de stenographie mecanique".

(diapo 3) In the appendix of this manual there are three tables with shorthand alphabets for Italian, French, English and German.

(diapo 4) The system was conceived as a direct derivative of the inventor's studies on the universal phonetic alphabet and therefore, like the first, completely based on sounds. The many demonstrations subsequently carried out in the international field merely confirmed the extraordinary ease with which it was possible with the Michela machine to graphically record the sounds of any language.

(diapo 5) The appreciation of the machine internationally is, moreover, indirectly proven by the large number of patents that followed the Italian one of 1876, including Austria-Hungary, Belgium, Germany, England, and the United States.

(diapo 6) Following the success of the system at the Universal Exhibition of Paris in 1878, numerous demonstrations were given in French.

(diapo 7) Such demonstrations, with the application of the Michela keyboard to telegraphy by the Parisian engineer Cassagnes, will also concern the transmission of

dispatches and long distance messages at unthinkable speeds for those times (10,000 words per hour, against 500 words the time of the Morse telegraph).

(diapo 8) Following these flattering results, the same Assemblée nationale (after a demonstration in French in front of the most important politicians of the time (including the president Léon Gambetta) seriously considered the possibility of adopting the machine of Prof. Michela for the production of reports and their immediate transmission to the editorial offices of the newspapers through the stenotelegraph Cassagnes (then giving up for mere reasons of a political nature).

(diapo 9) The interest in international theories will remain alive, at least at a theoretical level, as demonstrated by the first teaching manual of 1932, published by the Senate Report Service.

(diapo 10) In it, in addition to the aforementioned tables for Italian, English and German, additional alphabetic tables for Latin, Spanish and Russian also make their appearance. Nevertheless the practical application of the system to other languages will remain almost on paper until the present day, when a series of eventualities will awaken the interest towards this issue.

Following a brief overview of the projects carried out in this field by the Italian Senate Reporting Office.

(diapo 11) ENGLISH

(diapo 12) In 2017, following the entry of the Michela system into the Open steno project, decided by the Senate administration to promote a greater knowledge of its shorthand keyboard, a series of requests were received following the greater publicization of the method in the international sphere. regarding the availability of international theories, in particular for English and also for uses other than strictly stenographic ones (eg, fast input of texts, phonemic vocalization). It was therefore decided on that occasion to dust off the original «Shorthand alphabet for England and the United States», published by the inventor in the original manual of 1882, developing a modern conflict-free theory based on it.

(diapo 13) From a first analysis of the ancient manuals, a rather common characteristic emerged from the stenotypic systems of the end of the 19th century (Michela) and of the early 1900s (Bartolomew, Ireland) in English language steno theories: the not complete (or at all absent) diversification between short and long vowel sounds.

(diapo 14) For example, in the original Michela table of 1872 there are only a few sounds for long vowels ("i" and "u") and in the first US mechanical shorthand system (Stenograph-Bartolomew of 1879 no differentiation was expected for long vowels (thirty years later, in the subsequent Ireland-Stenotype system of 1911, it will be predicted the only sound relative to the "o" long. At that time, in fact, the computerized transcription did not yet exist for which there was no need to differentiate such sounds: according to the context the operator was able to easily distinguish the different entries.

(diapo 15) The first step was therefore to introduce all the sounds related to long vowels, similarly to what was done by modern theories with the American Stenotype system.

(diapo 16) To represent these sounds, some additional combinations were used redefining their value (the 3rd Series originally used for the French and German theories, together with the combination used in the Italian and French theory for the accented "e"). In this way, as can be seen from the table, all the long vowel sounds are obtained simply by adding the "u" key to the short vowel sound (except for the long "u" sound obtained with the "uia" combination). Also in 3rd Series, as you can see in the table, the combinations for some recurrent diphthongs ("ow", "ou") to better disambiguate some sounds ("ea", "ae", "o", " oo ") representable with long vowels,

(diapo 17) As for the consonants, in the original English steno alphabet some typical sounds of the English language and the graphic symbols for the letters "w", "y" and "j") were provided. To these sounds, following the modern US steno theories, and using some Michela combinations for some sounds scarcely usable with English, the groups "st", " nt / n't "," rt/rd ", as well as the final sounds" shun "and" kshun ", were added.

(diapo 18) As for other groups of consonants that cannot be represented in the 4th Series, given the lower number of keys of the Michela compared to the Stenotype keyboard, their indication have to be provided with an additional stroke, similarly to what was suggested for the English language in the first versions of the Stened conflict free theory; in some cases it is also possible to manage these sounds with one stroke abbreviations using inversions.

(diapo 19) Taking advantage of some interserial combinations (3rd + 2nd Series) it is also possible to represent some rather recurrent English consonant blends in the

beginning of the word and some other diphthongs. The 2nd Series is used, as in other languages, to create many abbreviations based on the elimination of the vowel sounds, with the particularity, already foreseen in the original alphabet, that the f/v sound becomes for English f/w. ").

(diapo 20) Specific combinations have also been provided to disambiguate the inputs in a similar way to the asterisk key in the Ireland keyboard, and to perform fingerspelling, which in this theory it cane be done, as usual, letter by letter but also in several cases syllable by sillable (as all the consonant-vowel-consonat (CVC) groups can be writte, with a single stroke.

(diapo 21) Regarding specifically the so-called inflected endings typical of the English language (group of letters added to the end of a word to change its meaning, e.g. "ed", "ing", "s"), they are represented, in most cases, with an additional stroke, similarly to what was recommended in the first editions of the Stened theory and by the Broadcast and CART Captioning Committee of the NCRA in its "Guidelines for CART Captioners". In some limited cases it is however always possible to fold in the indication of the inflected endings using the 2nd Series and reversing the order of the consonants.

(video 22) Finally, for the abbreviation theory we have tried to use as much as possible abbreviations similar to those applied in US theories, while in other cases we have preferred to use the 2nd Series and its versatility in compressing the CVCV groups; some examples are shown in the video.

(diapo 23) ARABIC

(diapo 24) In 2018 the Italian Senate Reporting Office received a visit from a delegation of Tunisian Parliament officials (Assembly of People's Representatives), interested in making a deep analisys of the Senate reporting system.

(diapo 25) On that occasion, an experimental Michela dictionary for orthographic writing in Arabic was developed for illustrative purposes (with the collaboration of our talented colleague Dr. Fulvio Azzali). It was decided to carry out for the occasion a simplified syllabic orthographic theory of more rapid comprehension, which can however evolve into an advanced orthographic theory (with abbreviations) and possibly into a real phonetic system.

(diapo 26) The Arabic alphabet consists of 28 letters. Since the consonantal sounds are 27 and the sounds of the Michela system in the 1st and 4th series are 26, we have first added a sound in the 1st and 4th series, using an extra-ordinem combinations (not provided in the traditional system) to represent the sound "kh "(in Arabic the letter خ).

(diapo 27) As for the vowels, the combinations available in 3rd Series are used to represent the three vowel sounds of Arabic (a, i, u) distinguishing between short and long sounds and between initial, middle and final sounds. The latter, which are written by adding the 3rd Series “u” key, are automatically transcribed with the space at the end of the word.

(diapo 28) Specific combinations have also been added for alef madda (آ) and alef maqsūra (ى) characters.

(diapo 29) In the 2nd series only the sounds for the long "i" and for the hamza in its various positions (أ إ ئ ؤ) have been provided for the moment (the hamza written on the "ء " line is still missing).

(video 30) Since it is a simplified system, no abbreviations are currently foreseen, but these can be easily introduced using the 2nd Series, which as mentioned remains almost unused.

(diapo 31) STENOGRAPHY AND MUSIC: THE LAST FRONTIER OF THE UNIVERSAL LANGUAGE

(diapo 32) Also in 2018, the Italian Senate administration was invited by the Australian Council for the Arts to collaborate in the realization of the artistic project "Assembly" (currently on display at the Venice Biennale), filmed in the assemblies of the Italian Senate and in the Canberra's Old Parliament House.

(diapo 33) As known, the layout of the Michela keyboard is based on two octaves of a common musical keyboard; this inspired the Australian artist Angelica Mesiti, whose artistic research ranges in the field of non-verbal communication, to use the Michela shorthand codes to produce a musical score: something similar to what prefigured by our friend Jorge Bravo in his presentation "The shorthand for music and dance - written words remain "at the past Intersteno conference in Berlin!

(video 34) In Assembly, the public takes a place in a circular environment (which recalls the Senate Assembly room in colors and structure) in which a series of images flow through three big screens. Each screen presents the public with a different perspective on the imaginary world conceived by the Mesiti. The public thus unknowingly becomes a contingent "assembly community", in constant evolution and change at the rate of a polymorphous musical notation, now harmonic, now dissonant, now cacophonous, produced by the stenoscription of a poetic text. Mesiti used the Michela keyboard (which was inspired by the idea of music as a universal language) to recode into music the poem "Written in another tongue", by Australian writer David Malouf . Using the MIDI score recorded during the stenoscription the poem was subsequently transposed into music by the composer Max Lyandvert and performed by a series of musicians who performed with different instruments, alternately occupying the three screens. The goal of Mesiti is to explore the power that communication has

to transform itself, through an evolution from the written word to the shorthand codes, to music, to gesture.

Participation in this project - which involved almost forty Australian artists, including dancers, musicians and choristers, as well as film and sound professionals - has determined, above all, the need to write down the poem in English steno.

(diapo 35) To this end, it was decided to use the original English alphabet of 1882, as it has showed before, in its original structure to respect the "sound" of the original Michela machine as much as possible. Furthermore, the necessity to experiment a completely new field for Michela's shorthand has been determined: the capture of the "sound" of the keyboard, by recording the MIDI codes produced by it, and its transposition into a musical score.

(diapo 36) As for the abbreviations, as these were not provided for in the original codification, it was decided to develop an ad hoc abbreviation theory for English, drawing inspiration as far as possible from the abbreviated criteria commonly used in US theories, integrating them in various cases with some modern abbreviations typical of the system Michela. A careful study has also been carried out on the possible abbreviations to be used, in order to select those that were musically more adequate while remaining within the scope of the system.

(diapo 37) Once the abbreviations to be used were decided, a musical notation MIDI software were use to capture the Michela steno stroke of the poetic piece and convert them in the musical score; this was then used by the Australian composer Max Lyandvert to create the musical arrangement for the individual music performers.

(diapo 38) CONCLUSIONS The various projects illustrated, even if it is still a matter of study and in-depth activities that do not aim at the moment for any practical purpose,

have led us to explore the applications of the system to other languages at a much less theoretical level than in the past.

(diapo 39) This activity is still ongoing with the development of the theory for the Spanish language, for which, given the proximity to the Italian language, it is possible to apply, with some minor adjustments, the Michela conflict free theory for Italian , in an advanced stage of completion.

(diapo 40 finale) In the hope of not having bored you too much, we remain at your complete disposal for any questions.