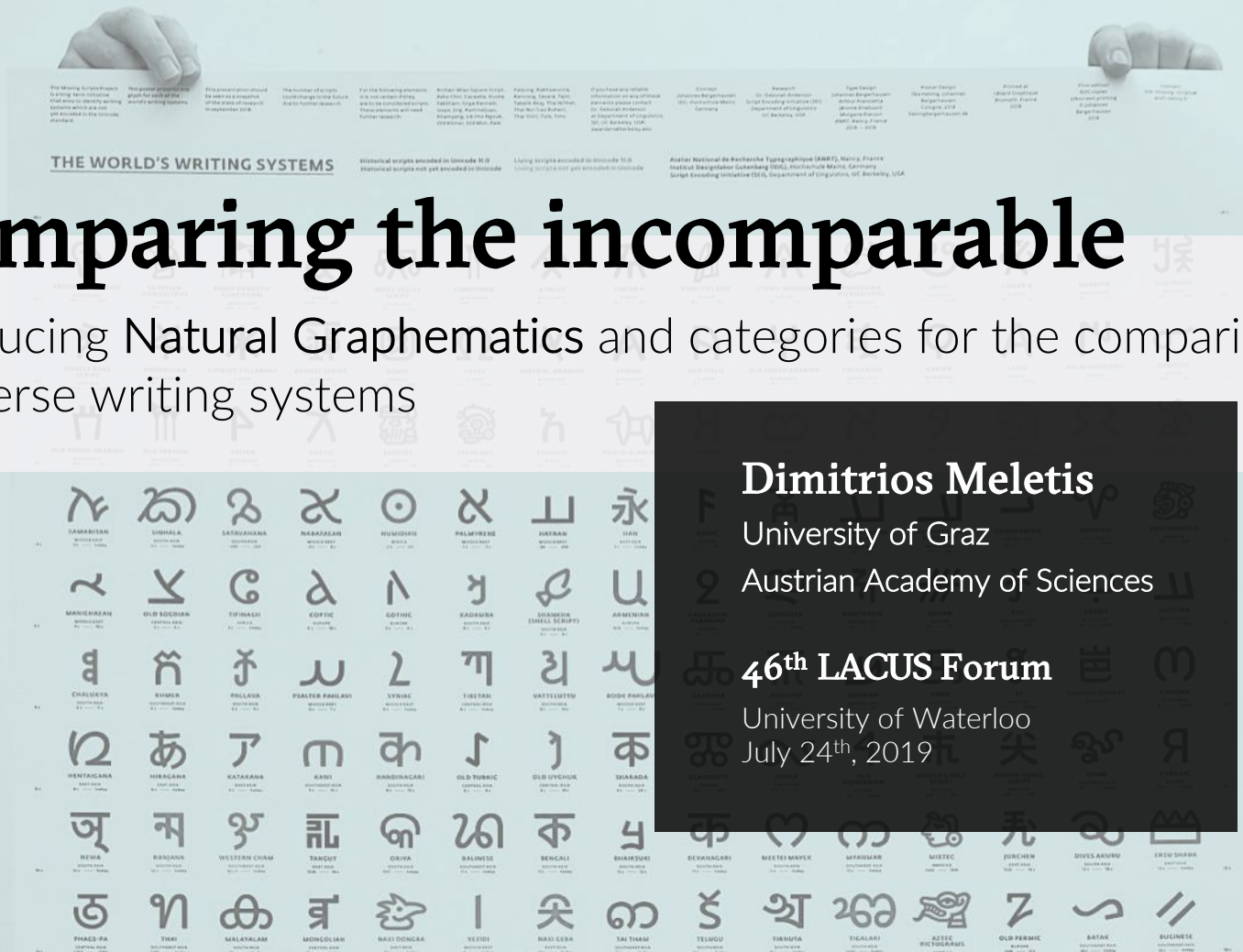


Comparing the incomparable

Introducing **Natural Graphematics** and categories for the comparison of diverse writing systems

Dimitrios Meletis
University of Graz
Austrian Academy of Sciences

46th LACUS Forum
University of Waterloo
July 24th, 2019

LACUS · ALCÉU

UNI GRAZ

Outline

1. Challenges in the comparison of writing systems
2. **Naturalness Theory** as a suitable framework
3. **Natural Graphematics** and its parameters
4. *Example*: Figure—ground
5. Conclusion and outlook

1. Challenges in the comparison of writing systems

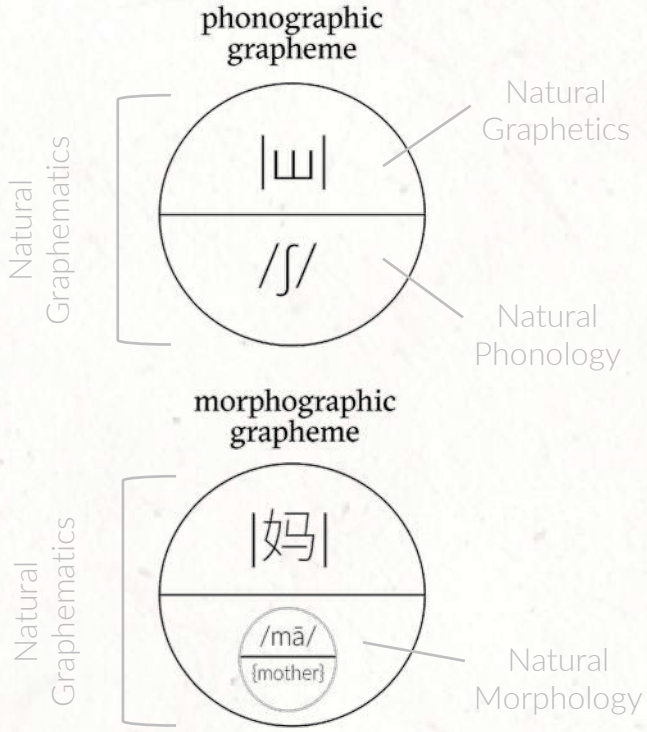
- since writing is a modality of language, a semiotic system, writing systems are secondary semiotic systems dependent on language
- the visual variety of scripts makes the diversity of writing systems appear insurmountable; there exist only few types of writing systems (DANIELS 2017)
- writing system typology has focused only on the "unit of representation", i.e. the question which linguistic units are represented by the basic units of writing (i.e. *graphemes*)
- particularism (HASPELMATH 2010) is predominant in grapholinguistics, there are almost no works within the paradigm of universalism
  - this results in a lack of shared concepts and terminology that prevents the establishment of a theory of writing

2. Naturalness Theory as a suitable framework

- broadly speaking, Naturalness Theory evaluates linguistic phenomena or structures as more or less natural [= easy to process] physically, cognitively, and sociopragmatically
- Natural Phonology (STAMPE 1979) focuses on the articulation and perception of sounds, Natural Morphology (DRESSLER ET AL. 1987) on the cognitive processing of morphological structures
  - specifically, Natural Morphology evaluates various aspects of the semiotic relation between *signans* and *signatum* [= naturalness parameters] and deems them more or less natural
- both branches rely on external evidence and aim for explanation

3. Natural Graphematics and its parameters [1/2]

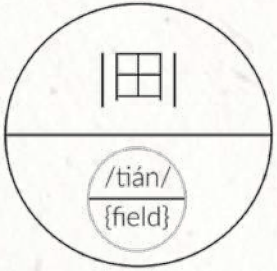
- since writing systems are, like languages, semiotic systems, their structures can be evaluated using the naturalness parameters of Natural Morphology (MELETIS 2018)
- I do not share the core assumption that structural naturalness equals processing naturalness, resulting in the division between linguistic fit and the processing fit
  - as an additional but wholly separate fit concerned with sociopragmatic naturalness, there is the sociocultural fit



3. [...] parameters [2/2]

iconicity

pictography



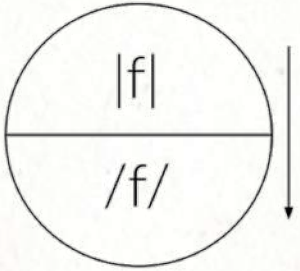
signans visually resembles meaning of the signatum (not the signatum itself, which is a morpheme)

diagrammaticity

a visual change in the signans structurally reflects a change in the signatum (e.g. plurality)

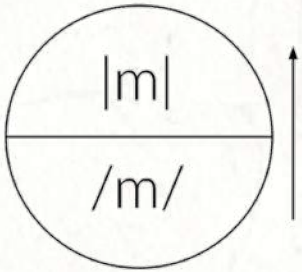
biuniqueness

transparency



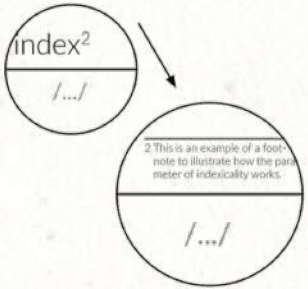
a signans is in a graphematic relation with only one signatum

uniformity



a signatum is in a graphematic relation only with one signans

indexicality



an indexing signans is in spatial contiguity with an indexed signatum

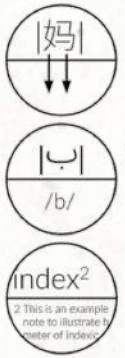
compositional transparency

the sum of the graphematic value of the grapheme equals the graphematic value of the whole grapheme

positional transparency

the order of the basic shapes in the signans of a graphematic string corresponds with the order of corresponding linguistic units in the signatum

figure—ground



subgraphemic: equally important parts of signantia take up an equal amount of space in the signans

graphemic: more important graphemes are larger than less important graphemes

supragraphemic: more important types of information are visually more salient than less important types of information

4. Example: **Figure—ground**

- spacing visually demarcates units by contrasting visual material (*figure*) with blank space (*ground*)
  - as a graphetic tool, it aids guidance of eye movements in reading (*saccade targeting*)
  - as a graphematic tool, it facilitates recognition of linguistic units such as words (*lexical segmentation*)
- most modern writing systems have word spacing
  - however, some do not: Japanese, Thai, Chinese (Lao, Khmer, Balinese, Tibetan, …)
- influence of spacing on processing tested by means of removing word spaces in spaced writing systems or adding them in unspaced systems
- levels of naturalness: as a universally natural parameter, spacing should facilitate reading in every writing system; however, in writing systems in which the lack of spacing is the default, spacing disrupts reading (WINSKEL 2016) since non-spacing has become system-dependently natural

5. Conclusion and outlook

- description (= **linguistic fit**) and data from processing (= **processing fit**) should go hand in hand in the establishment of a theory of writing
- "some writing systems are better than others" (ROGERS 1995: 31): no writing system is "absolutely" (= globally) better than another system, systems can only be compared with respect to how natural their configurations are on one parameter (= locally)
- the question whether "every language gets the writing system is deserves" (FROST 2012: 266) cannot be answered with the linguistic and processing fits alone, as the **sociocultural fit** is dominant; the question should be rephrased as "**does every literate community get the writing system it deserves**?"
- the proposal of a **Natural Grapholinguistics** (MELETIS 2019) must be applied
  - **atomistic**: what is missing is a detailed analysis of the parameters with data from as many writing systems as possible
  - **holistic**: analyses of the entire naturalness of a writing system (i.e. all fits) for writing systems should be carried out; the unified theoretical framework will allow for comparisons and fine-tuning of the framework itself

> This outline of a Natural Grapholinguistics is a status report, a collection of desiderata, and a new perspective. It is a start, but most importantly, it is an invitation.

(MELETIS 2019: 356)

Thank you for your attention!

References

Daniels, Peter T. (1992): The syllabic origin of writing and the segmental origin of the alphabet. In Pamela Downing, Susan D. Lima & Michael Noonan (eds.), *The linguistics of literacy* (= Typological Studies in Language, 21), 83-110. Amsterdam, Philadelphia: John Benjamins. DOI: 10.1075/tsl.21.10dan

Daniels, Peter T. (2017): Writing systems. In Mark Aronoff & Janie Rees-Miller (eds.), *The handbook of linguistics*, 2nd edition, 75-94. Oxford: Wiley-Blackwell. DOI: 10.1002/9781119072256.ch5

Dressler, Wolfgang U., Willi Mayerthaler, Oswald Panagl & Wolfgang U. Wurzel (1987): *Leitmotifs in Natural Morphology* (= Studies in Language Companion Series, 10). Amsterdam, Philadelphia: John Benjamins. DOI: 10.1075/slcs.10

Frost, Ram (2012): Towards a universal model of reading. *Behavioral and Brain Sciences* 35.5: 263-279. DOI: 10.1017/S0140525X11001841

Haspelmath, Martin (2010): Comparative concepts and descriptive categories in crosslinguistic studies. *Language* 86.3: 663-687. DOI: 10.1353/lan.2010.0021

Meletis, Dimitrios (2018): What is natural in writing? Prolegomena to a Natural Grapholinguistics. *Written Language and Literacy* 21.1: 52-88. DOI: 10.1075/wll.00010.mel

Meletis, Dimitrios (2019): *Naturalness in scripts and writing systems: Outlining a Natural Grapholinguistics*. PhD dissertation, University of Graz.

Stampe, David (1979): *A dissertation on Natural Phonology*. Bloomington: IULC.

Winskel, Heather (2016): Insights into reading processes through investigating diversity. *Australian Journal of Psychology* 69.3: 151-161. DOI: 10.1111/ajpy.12136

Dimitrios Meletis

University of Graz

dimitrios.meletis@uni-graz.at

http://kfunigraz.academia.edu/DMeletis