

Universality and diversity in writing systems

What can a *universal model of writing systems* achieve?

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“‘More’ would constitute, or at least contribute to, a **semiotic theory of writing systems**: a theory that would explain, to put it pithily, why each such writing system is the way it is, instead of some other way, and **why all such systems have in common what they have in common**. [...] Such a theory might proceed to examine the purely physical factors that determine the forms of writing systems: the nature of available writing materials and the nature of the pertinent human physiology, especially that of hand and eye. [...] Such a theory might continue by examining the cognitive factors that determine the forms of writing systems [...]. Any such theory would, of course, if successful at the tasks just set forth, also largely explain how one writing system can ‘evolve’ into another, in an appropriate sense of that much-vexed term ‘evolve’.”

WATT (1998: 118)

Outline

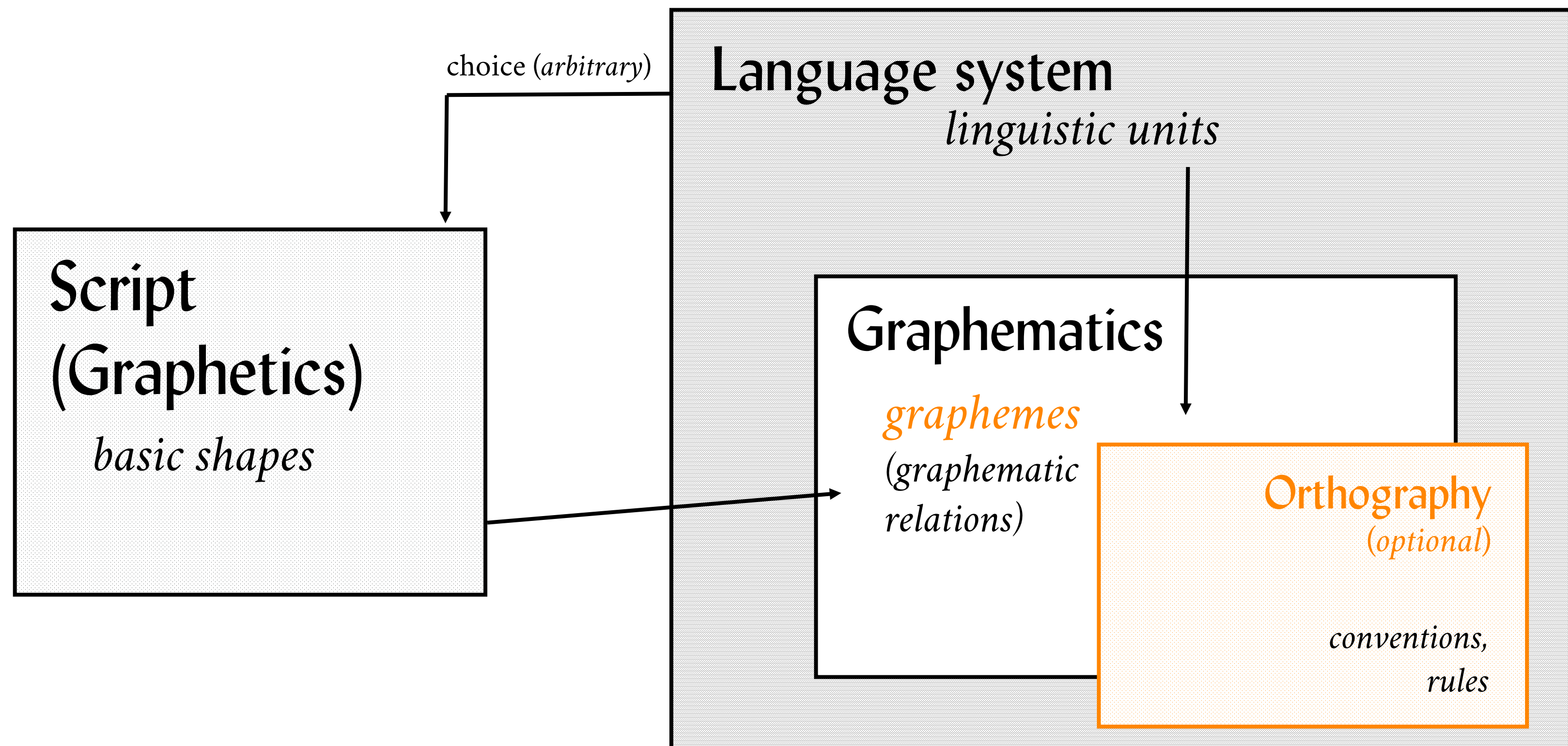
1. Introduction & motivation
2. Modular theory of writing systems (cf. NEEF 2015)
3. **Universality:** *possible universals of writing*
4. **Diversity:** *script and writing system typology*
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I. Introduction & motivation

- *Schriftlinguistik* or **grapholinguistics** (also *writing systems research*, *grammatology*, or *graphonomy*, cf. DANIELS 2017) as an emerging field of research (mostly in German-speaking spheres) after having been neglected by linguistics for a long time
- writing system typology is not yet fine-grained (enough) (cf. WEINGARTEN 2011); research on universals of writing is still in its infancy (cf. COULMAS 1996); lack of descriptions of a great number of writing systems; Eurocentrism (*'supremacy of the alphabet'*, *'alphabetocentrism'*) is still prevailing when writing is concerned
- **lack of (a) general theory** within grapholinguistics (cf. WATT 1998)
- **lack of comparisons of diverse writing systems**, with it a lack of relevant categories for comparison
 - in my dissertation, I compare German, Arabic, Thai, and Chinese; the comparison is embedded in the theoretical framework of *Naturalness Theory* (MELETIS forthcoming)

2. Modular theory of writing systems

- first developed in NEEF (2005)
- writing systems consist of various modules: (1) languages, (2) scripts (= graphetic modules), (3) graphematic modules, (4) systematic and conventional orthographic modules



Question:

How does diversity fit into this theory?
Are the concepts 'grapheme', 'orthography' etc. universal?

3. Universality: *possible universals of writing*

- all writing refers to language
 - in the (narrow) sense advocated by grapholinguistics, “writing” includes only visual marks or systems that refer to language; other forms of notation or visual communication are thus **not** regarded as writing (cf. DANIELS 2017: 83f.)
 - assuming that it is a universal property of all writing that it refers to language is thus circular since that is just how “writing” is defined; if, however, the broader sense of “writing” (where semasiography, e.g. cave paintings, is included) is assumed, this universal would not hold
 - it is not of interest *that* writing refers to language, but *how*, that is, *in which ways*, writing and language interact
- all writing is phonetic (cf. DEFRANCIS 1989)
 - all writing is said to refer to spoken language, but in the case of morphographic writing (e.g. Chinese or kanji in Japanese) it does so only through a detour through morphology – but because morphemes have phonological representations, morphographic can be seen as “phonetic”, too (in the broadest sense)

3. Universality: *possible universals of writing*

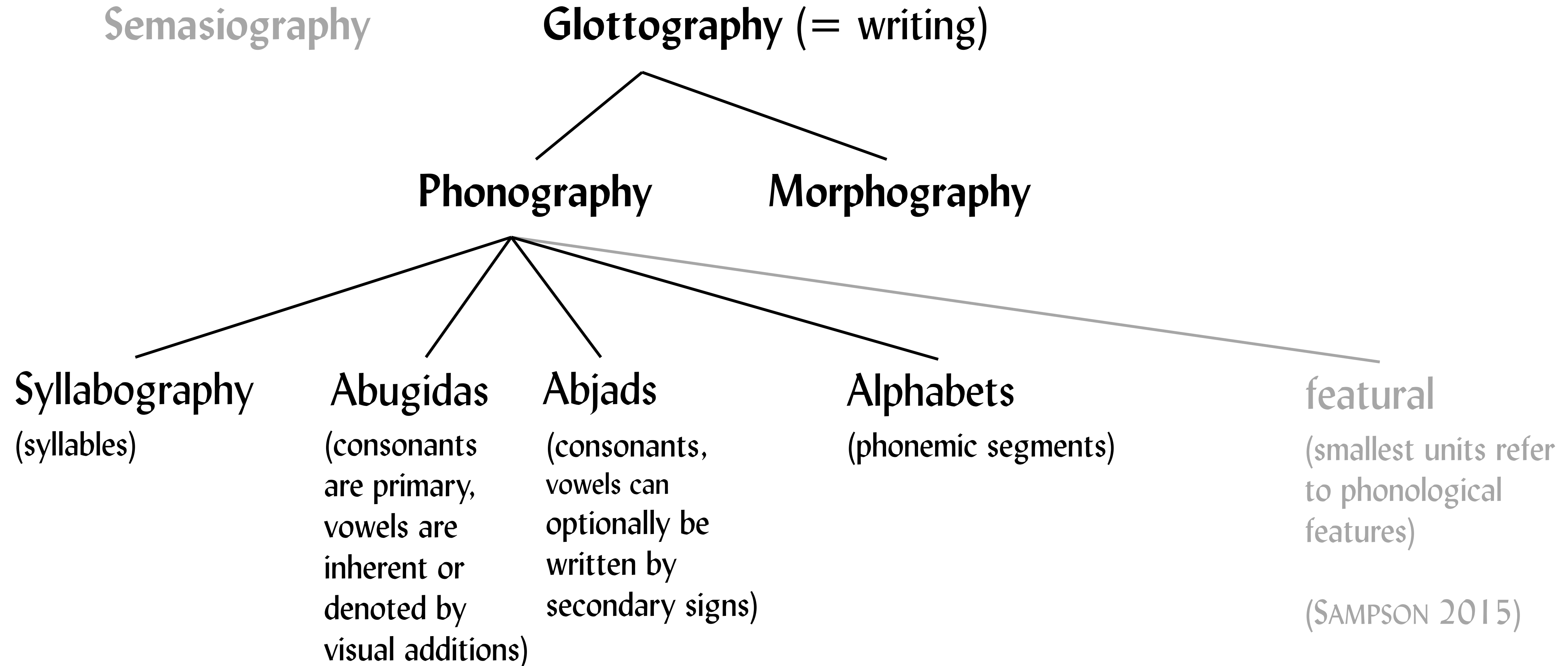
- all types of writing systems have a (relatively) closed linguistic level as their basis
 - writing systems have (closed) inventories such as syllables, phonemes, features as their basis (cf. SAMPSON 2015); one could argue that the morphological level is not closed, but it is the basis for word formation and as such has the fewest (and smallest) meaningful units in a language
 - that is also why some scholars argue against the term ‘logography’ as it isn’t words (or word forms) that are written in the systems designated as ‘logography’, but rather morphemes
- the syllable is the universally preferred basic unit for writing systems (cf. DANIELS 2017)
 - “All new writing systems [...] invented by nonliterate who know that writing exists are syllabaries.” (DANIELS 2017: 84)
 - The three independently created writing systems (Sumerian, Mayan, Chinese) were all based on syllabaries – however, that corresponds with the typological features of the languages written

4. Diversity of scripts

- considering the **graphic substance** (= graphetic module), the (1) multitude of scripts and thus visually distinctive basic shapes as well as the (2) vast variability of individual basic shapes (How are they produced? Are they printed, handwritten? Who is handwriting? What font is used?) lead to a great diversity of visual substance
- **assumption:** the number of possible basic shapes for (human*) scripts is unlimited because there are no restrictions of the “articulators” (cf. GÜNTHER 1993: 33) unlike in speech, where our articulators limit possible sounds and in turn phoneme inventories
 - however, comparative visual studies (CHANGIZI/SHIMOJO 2005; CHANGIZI ET AL. 2006) have found similarities in the world’s scripts concerning the average number of constitutive segments and the most common and frequent topological configuration of segments; but note the flaws of these studies as pointed out in DANIELS (in press)

*(cf. WATT 1999: extraterrestrial symbols would look different; human symbols are restrained by (1) the human eye and brain, (2) the human hand, and (3) the physical properties of the writing materials available)

4. Diversity: *writing system typology* (DANIELS 2017)



4. Diversity of writing systems

- systems *within* one type of writing system differ from each other as well (cf. WEINGARTEN 2011)
 - it is still not understood well enough what the differences are between the systems within a type, such as Finnish, English, Spanish, etc., which are all alphabets and even use the same script (the distinction *shallow/deep* that is used to distinguish e.g. Finnish from English is criticized as being monodimensional and not applicable to writing systems other than alphabets, cf. SHARE/DANIELS 2016)
 - also, writing systems are usually not of one “pure” type (cf. GÜNTHER 1988)

5. Example: The concept 'grapheme'

grapheme (= graphematic relation, 'rule')

basic shape(s)

- constrained by human eyes, brains, hands, and available writing instruments and material

linguistic unit(s)

- of linguistic levels that share the feature that they are (relatively) closed inventories

5. Example: The concept ‘orthography’

- as established before, ‘orthography’ is an **optional** module of a writing system
- it is influenced by the users of writing systems themselves (‘invisible-hand’, cf. KELLER 2014), but imposed upon a writing system by institutions or commissions
- ‘spellings’ can be **systematic**, i.e. when graphematically licensed possibilities are chosen, or **conventional**, when a spelling outside the graphematic solution space is chosen (cf. NEEF 2015)
- this idea of an ‘orthography’ that tells us what is ‘spelled’ correctly is phonocentric and again, Eurocentric, as it applies mostly to alphabets; what is standardized in alphabets are mostly “grapheme-phoneme correspondence, word division, hyphenation, capitalization, and the spelling of loan words” (COULMAS 1996: 379)
- **What does the orthographic module look like in other phonographic types of writing systems as well as in morphographic writing systems?**

6. What could a **universal model** achieve?

- in *Naturalness Theory*, three subtheories are postulated: (1) **universal naturalness**, (2) **typological adequacy**, and (3) **system adequacy** (cf. DRESSLER et al. 1987); universality is located on the first and very general level
 - while on the universal level, **cognitive and physiological factors** determine what even occurs and what is preferred in writing systems, on the typological it is **linguistic factors**, most importantly typological features; on the level of the specific system it can be either linguistic features of a single language or also **external factors such as political, cultural, technological factors**; diversity stems from the latter two levels – is it cognitive as well?
 - in my dissertation, I work on outlining *Natural Grapholinguistics* (MELETIS forthcoming)
- a universal model highlights the inner systematics at work in all writing systems; it gives a clearer picture of what writing really is at its core
 - this could help with the reform and creation of writing systems, the decipherment of yet undeciphered writing systems, the revision of models of reading and writing, etc.

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Thank you for **your attention**.

Any questions?