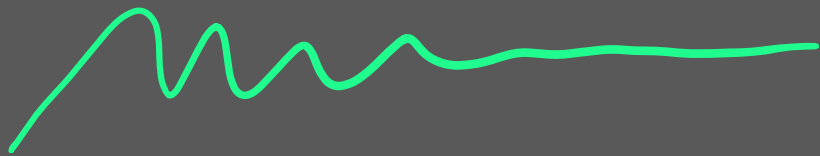


Is the *syllable* universally the most salient unit of writing?



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Grapholinguistics in the 21st Century—From graphemes to knowledge

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Structure

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Background and motivation

- Motivation: arriving at a functional explanatory theory of writing that goes beyond 'mere' description (based on extralinguistic evidence)
 - *Why* do we find the structures that we find in writing systems?
- Categories for the evaluation and comparison of writing systems based on how systematic they are (**systematic fit**), how well they suit their given language (**linguistic fit**), and how well they their users' processing and sociocommunicative needs (**processing** and **sociocultural fits**) (cf. Meletis 2018, 2019a, forthc.)
- Fits located at various levels: **universal** (e.g. processing fit of syllables), **typological** (correlation between types of languages and types of writing systems), **system-specific** (what writing system best suits a given language)
 - universals or universal tendencies are of special relevance

A primacy of the phonological syllable?

- basic claim: “A more natural unit than the phoneme is the syllable” (Sampson 2016: 49)
 - syllable vs. mora-discussion not pertinent to this talk, as the question is segmentality vs. suprasegmentality
- **phylogeny** (and largely structural): the first geneses of writing (Sumerian, Chinese, Mayan) resulted in (morpho)syllabaries, and ‘unsophisticated’ modern grammatogenies (Cherokee, Vai) have spawned syllabaries as well (cf. Daniels 1992)
 - question of size of inventory
- (largely) **ontogeny** (and largely psycholinguistic): “Psycholinguists find that people not literate in an alphabetic script are unable to manipulate portions of the speech stream at the level of the segment [...]; educational psychologists find that syllabic approaches to teaching children to read can be more successful than approaches requiring them to identify subsyllabic segments [...]; phonologists increasingly work with levels of analysis other than that of the segment or individual sound [...]” (Daniels 2017: 76)
- phoneme as an epiphenomenon of segmental writing (cf. Faber 1992, Davidson 2019)

Evidence from processing

- **handwriting:** intergrapheme intervals were longer at syllable boundaries than intrasyllabically: the interval between the graphemes in the sequence <gn>, which is always intrasyllabic in French (such as in <consi.gner>) and intersyllabic in Spanish (<consig.nar>), was shorter in French than in Spanish, and not only for monolingual writers of these respective languages, but also for bilingual French-Spanish writers, who systematically produced a shorter interval when writing French (cf. Kandel/Álvarez/Vallée 2006)
- **typing:** inter-keystroke intervals are longer at syllable boundaries than syllable internally, (cf. Will/Nottbusch/Weingarten 2006)
- **learnability:** ‘acoustic stability hypothesis’: graphemes that correspond with ‘speech chunks’ larger than the segment are easier to learn even though participants had alphabets as their L1WS (cf. Inkelas et al. 2013); interestingly, results were better for syllables than for moras

Modality-indifferent syllable definition

- In an effort to highlight structural parallels in different modalities of language, Primus (2003) proposes a modality-indifferent syllable definition: syllabic structures are characterized by an **alternation of more salient and less salient units**
 - this abstract structural definition is modality-indifferent, but salience is defined specifically for each modality based on its substance
 - in speech, sonorous sounds are more salient than less sonorous sounds, in signing, movements are more salient than locations; what about writing?
 - salience in writing is based on visibility (or, more generally, and to avoid visuocentricity, graphetics), so syllabic structures are script-specific (with script defined as an inventory of visual basic shapes without linguistic values, cf. Roman script, Cyrillic script)
- consequently, there are distinct syllabic structures in each modality that must be identified independently; only in a second step are correspondences established

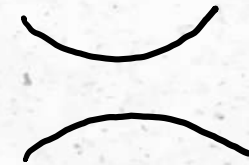
Autonomous suprasegmental written structures

- ‘written syllable (or word, etc.)’ = either a unit of writing that corresponds with a phonological syllable (or word, etc.) or a suprasegmental (my term: **polysegmental**, cf. Meletis forthc.) structure in writing that exhibits an alternation of more vs. less salient units
 - = ultimately a terminological and methodological choice based on how the relationship between speech and writing is modeled
- autonomous suprasegmental units proposed in German grapholinguistics: among others, graphematic syllable (Fuhrhop/Buchmann 2009), graphematic word (Fuhrhop 2008 and Evertz-Rittich’s talk at this conference), graphematic sentence (Schmidt 2016 and Neef’s talk)
 - terminology is somewhat problematic as the use of established terms such as “syllable” insinuates a dependence on (rather than – as intended – a structural parallel with) other linguistic subsystems (phonology, morphology, etc.)

Autonomous syllabic written structures

- graphematic syllable defined, in essence, by visual length of (constituents of) basic shapes
 - length sequencing principle (LSP): “The graphematic syllable core is occupied by the most compact grapheme. The length of the segments increases monotonously toward both syllable edges” (Fuhrhop/Buchmann/Berg 2011: 283)
 - in German, graphematic syllables often but not always correspond with phonological syllables (cf. Fuhrhop/Peters 2013: 228)
- similar structures can be found also in the Greek and Armenian alphabets (but not in alphabets using Cyrillic script)

peak





prototypical structure

γράφμα

հա.ւալ.ւա.րաւ

рус.ский

what about diacritics such as  or ?

Autonomous syllabic written structures

- **aksharas** in abugidas (or akshara-based systems) do not correspond with syllables but with V, CV, CCV, etc. structures: vowels may be preceded but not followed by consonants
 - “The Sanskrit word *kārtsnya* ‘totality’ is spelled कात्स्न्य = क *ka* + आ *ā* + र *r* + त *t* + ष *s* + न *n* + य *ya*. The word provides a spectacular example of why Indic writing systems should not be considered syllabaries: the writing-units do not denote syllables! An entire sequence of up to five consonants followed by a vowel (or a *virama*) is a single writing-unit; the name for such units is *akshara*. [...] त्स्न्य *rtsnya* is an *akshara*. Clearly, *rtsnya* is not a syllable; the syllables of the word *kārtsnya* are *kārts-* and *-nya*. No matter whether a syllable boundary falls in a sequence of consonants, all the consonants combine in a single *akshara*.”
(Daniels 2018: 69f.)

Written segments corresponding with phonological syllables

- if the lowest level/unit of correspondence in a writing system is the phonological syllable, the graphemes in this writing system will be graphematically segmental: crucial difference between **syllabographic graphemes** (segmental) vs. **graphematic syllables** (supra-/polysegmental)
 - kana inventories in Japanese: segmental syllabographic graphemes, so units corresponding with phonological syllables are indicated through spacing (though, because of polysyllabic kanji, not consistently)
 - hanzi in Chinese (though only indirectly because morphemes are monosyllabic)
 - Hangul (Korean): graphemes are subsegmental and arranged together in syllable blocks, making Korean “syllabically spaced” (Gnanadesikan 2017)
- Are there suprasegmental structures in those systems? Are segments in writing visually more salient and “primary”? In other words: is it more natural when a primary unit of writing (segment) corresponds with a primary unit of speech (suprasegmental chunk, e.g. syllable)?

Special status of segmental writing systems

- **hypothesis:** segmental writing systems can develop more autonomous graphematic structures because segmentality is an inherent feature of writing that was transferred to (continuous) speech (cf. Meletis forthc., Davidson 2019)
- most segmentaries (cf. Gnanadesikan 2017) appear to develop visually salient suprasegmental structures (in the sense of Primus 2003) that largely correspond with suprasegmental phonological structures
 - graphematic syllable in alphabets, aksharas in abugidas, Arabic abjad as a moraic system (cf. Ratcliffe 2001)
- diachronic evidence from German shows that certain changes (such as ousting the basic shape |y| from the syllable nucleus position) helped in establishing and strengthening the graphematic syllable structure (cf. Fuhrhop/Schmidt 2014)
- in other words: after a segmental stage was reached in the form of segmentaries (controversially, this is often seen in a teleological sense), is there a movement towards 'depicting' syllables? (Such as there is an often-discussed movement 'back' towards iconicity, cf. the use of emojis.)

Conclusion and outlook

- typology needs to become more fine-grained (cf. Weingarten 2011, Gnanadesikan 2017, Meletis forthc.)
 - the focus should not be exclusively on the basic “unit of operation” (what I call grapheme, cf. Meletis 2019b), i.e. that unit of writing that corresponds with the linguistic unit constitutive of a writing system’s type (phoneme, syllable, morpheme)
 - larger units that are inherent to the writing system (i.e. can be identified solely on graphetic and graphematic grounds) need to be taken into account as well; here, we lack both description and explanation
- grapholinguistics must become explanatory: different types of (interdisciplinary) evidence must converge to uncover explanations for recurring structures (especially universal ones) in the world’s writing systems

Thank you
for your
attention!

I am looking
forward to your
comments and
questions!

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