Grapholinguistics

as an interdisciplinary framework for the synchronic and diachronic study of writing

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Goals of this talk

1. to historically and disciplinarily contextualize and characterize the emerging field of 'grapholinguistics'

2. to present the **descriptive** and **explanatory** bases of a grapholinguistic theory

3. to identify desiderata and open questions for future research in the synchronic and (mostly) diachronic study of writing

Contextualization

Schriftlinguistik: Areas of study

Dürscheid [5]2016: *Einführung in die Schriftlinguistik*

1. Gesprochene und geschriebene Sprache
2. Schrifttypen und Schriftsysteme
3. Schriftgeschichte
4. Graphematik
5. Orthographie
6. Typographie
7. Schriftspracherwerb

Meletis/Dürscheid 2022

1. Introduction
2. Language, speech, and writing (+ Anthropology)
3. Graphetics (+ Literacy acquisition)
4. Graphematics (+ Psycholinguistics/Cognitive Linguistics)
5. Orthography (+ Sociolinguistics)
6. Writing system typology (+ Diachronic Linguistics)

Schriftlinguistik: A possible definition

"label for efforts of gaining consistent descriptions and analyses of the written form of language and of developing them to a **general theory of writing** as a constitutive part of a **general theory of language**"

Glück 2016: 596, my translation

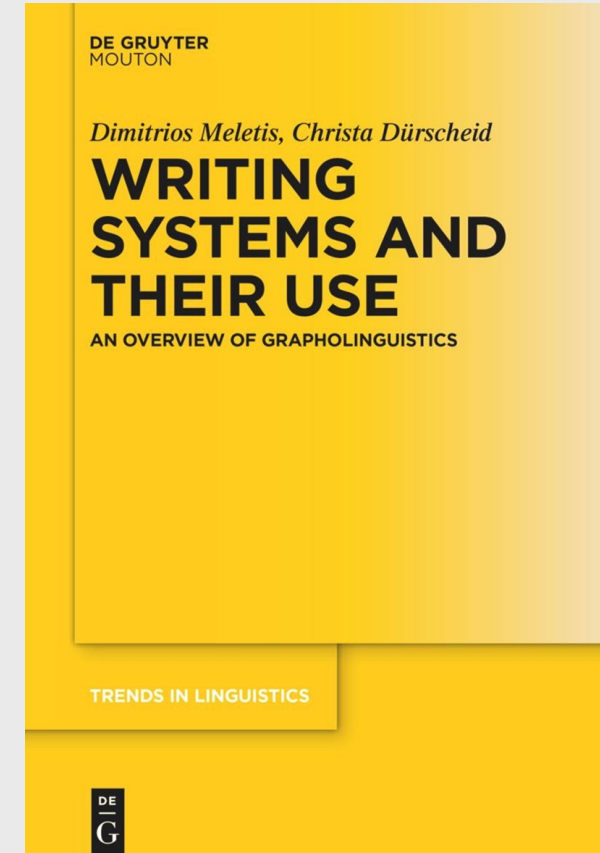(already exactly the same in the first edn. of 1993: 533–534)

Schriftlinguistik so far: Challenges

- field/topic is still marginalized

- no institutionalization (i.e., no chairs, no integration in curricula)

- very limited interdisciplinary exchange

- no consensus also within linguistics

  - this is highlighted by the many co-existing alternatives in English that label the study of writing: *graphology, grammatology, graphonomy, graphem(at)ics, grapholinguistics, script(ur)ology, philography, writing systems research* Meletis in press

- to a very limited degree reception of grapholinguistic works from other academic cultures (pressing example: lacking reception of German-language works in Angloamerican research)

  - this makes possible work like *Is a structural graphemics possible?* Daniels 1991

- limited comparison of studies on specific writing systems → no descriptive categories/comparative concepts, i.e., no descriptive framework for description and comparison

Grapholinguistics: The goal

- integration of different perspectives from diverse disciplines
  - including – but not limited to – anthropology and cultural studies, psychology and cognitive science(s), sociolinguistics

- combination of synchronic and diachronic perspectives
  - diachrony informs synchrony and vice versa

- establishment of a unified descriptive and explanatory framework – including methodology and concepts (e.g., *allography*) for all writing systems regardless of type

- publication of findings (at least additionally) in English to foster international visibility and exchange
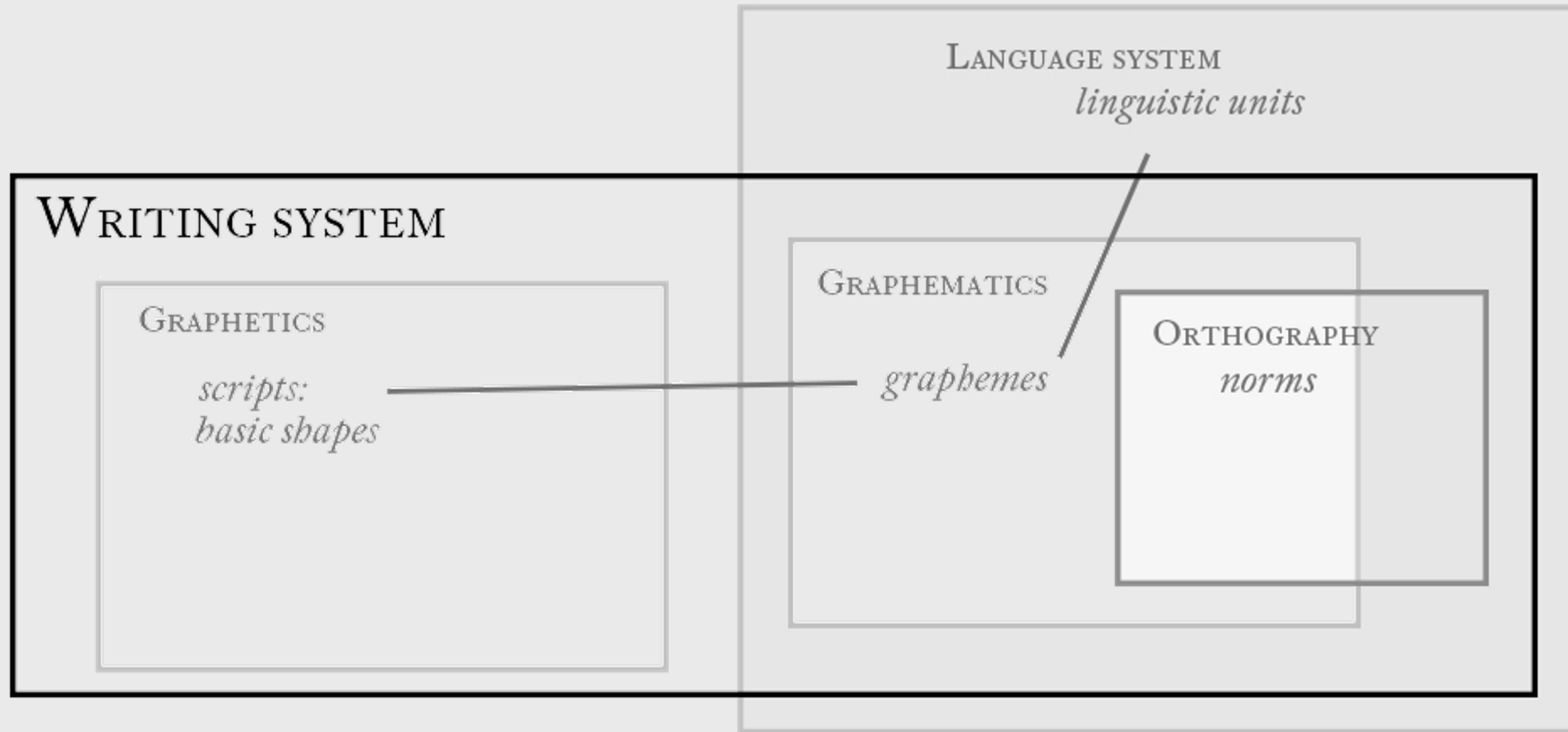
cf. Meletis/Dürscheid 2022

DE GRUYTER
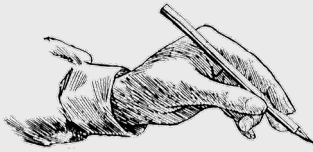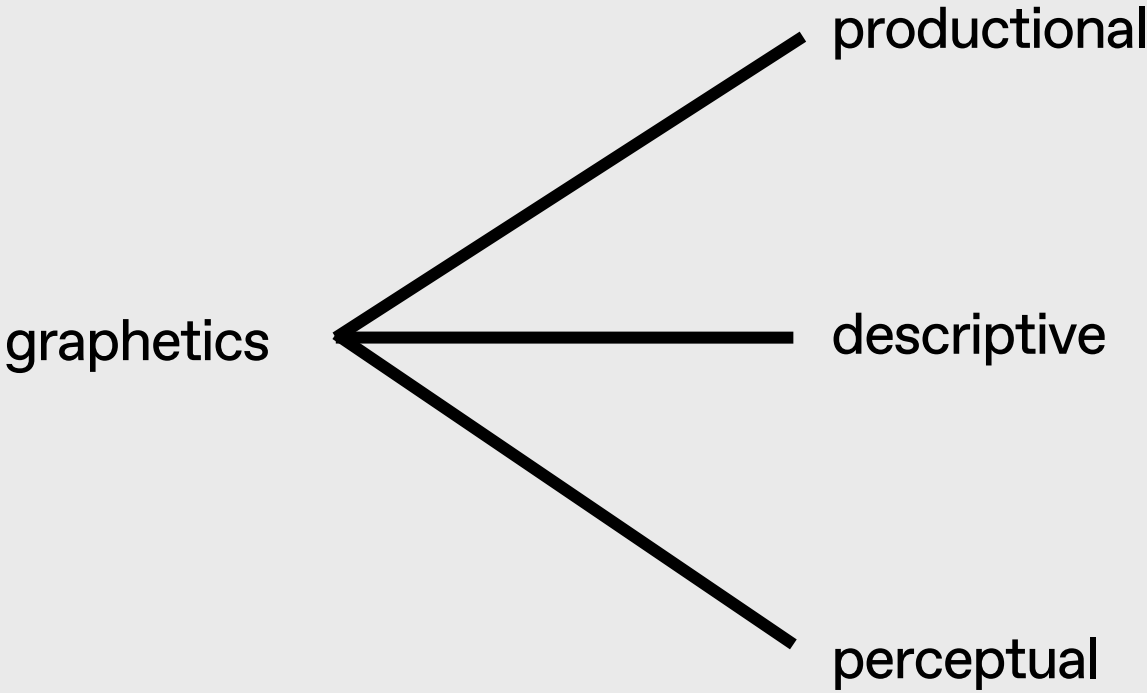MOUTON

Dimitrios Meletis, Christa Dürscheid

WRITING SYSTEMS AND THEIR USE

AN OVERVIEW OF GRAPHOLINGUISTICS

TRENDS IN LINGUISTICS

Description

# Modular model of writing systems

Graphetics: Subfields

graphetics

**productional**

- How do scribes/designers make use of resources of graphetic variation in order to constitute and convey a specific meaning in a given communicational situation?
- Are there universals in the manual production process (e.g., hand movements that occur in the production of all scripts)?

descriptive

- How can typographic variation that exists among type families be adequately described?
- How can basic shapes be segmented? What are the minimal distinctive segments?

perceptual

- How do the graphetic features of a text influence the constitution of meaning that occurs during the perception (i.e., reading) process?
- Which are the units that are most relevant during the reading process?

Graphetics: Basic units
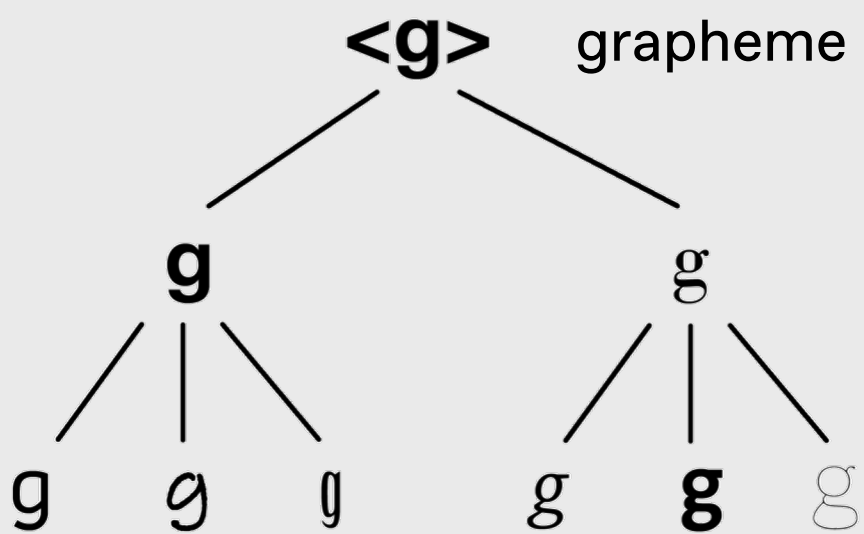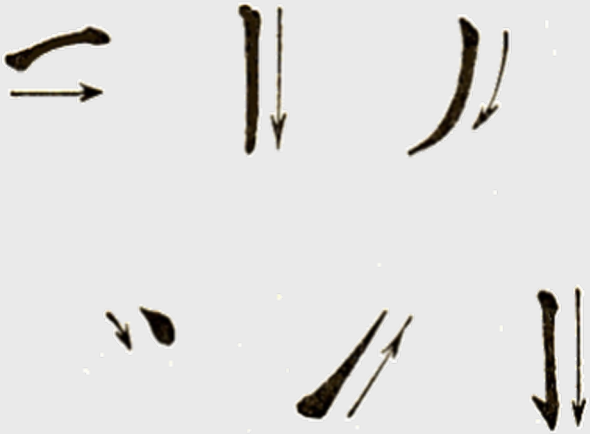
elementary form
(segment of a basic shape)

graph
(concrete manifestation of basic shape)

basic shape

grapheme

Graphetics: Spatial division

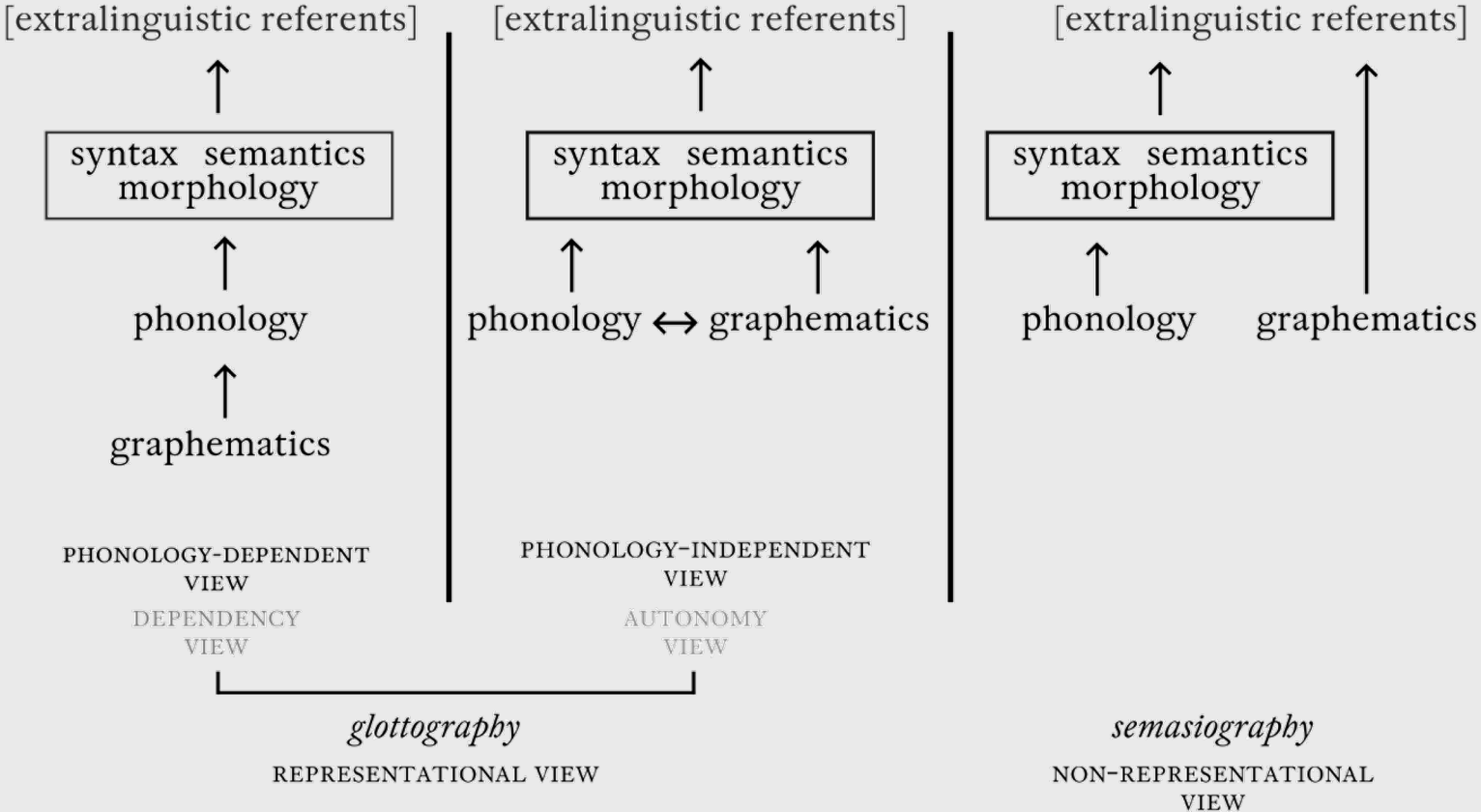spatiality (and not visuality) as the constitutive feature of writing

SEGMENTAL SPACE
Unit: *basic shape* (abstract), *graph* (concrete)

LINEAR SPACE
Unit: *one-dimensional graphetic sequence*

LINEAR SPACE
Unit: *line*

AREAL SPACE
Unit: *two-dimensional graphetic sequence*

HOLISTIC SPACE
Unit: *writing/reading surface*

LEVELS OF DESCRIPTION

micrographetics (segmental)
mesographetics (linear)
macrographetics (areal, holistic)
paragraphetics (holistic, physical properties)

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Graphetics: Material

Graphematics: Language, speech, and writing

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Graphematics: The 'grapheme'

1. **distinguishes meaning** (= distinctiveness criterion)

    – minimal pairs of existing words of a language (not pseudo- or non-words): German <<u>F</u>arbe> 'color' vs. <<u>N</u>arbe> 'scar'

2. **relates to a linguistic unit / feature** (= linguistic value criterion)

    – German <de<u>n</u>kt> vs. <de<u>c</u>kt>, but |c| does not refer (at least in a native context) to a linguistic unit on its own, only in combinations; |c| is no grapheme, <ch> is (= complex grapheme)

3. **is minimal** (= minimality criterion)

    – <ng> is no grapheme, since <n> and <g> are already graphemes themselves; in complex graphemes (such as <ch>, at least one component cannot be a grapheme itself

Meletis 2019

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Graphematics: The 'grapheme'

	criterion (1)	criterion (2)	criterion (3)
German <ng>	+	+ phoneme /ŋ/	– both <n> and <g> are already graphemes
German <ch>	+	+ phoneme /ç/	+
German <sch>	+	+	– both <s> and <ch> are already graphemes
German |c|	+ <denkt> vs. <deckt>	–	+
German |I| (has- ta) in <p> vs. <b>	+	–	+
Chinese <河> 'river'	+	+ morpheme {river}	+
Chinese |氵|	+	– semantic component 'water', which itself rep- resents no linguistic unit	+
Thai <ด>	+	+ phoneme /d/	+
Thai <ิ>	+	+ phoneme /i/	+
Korean <ㄱ>	+	+ phoneme /k/	+
Korean <각>	+	+ syllable /kak/	– is made up of three graphemes that repre- sent phonemes, respec- tively
Japanese <き>	+	+ mora /ki/	+

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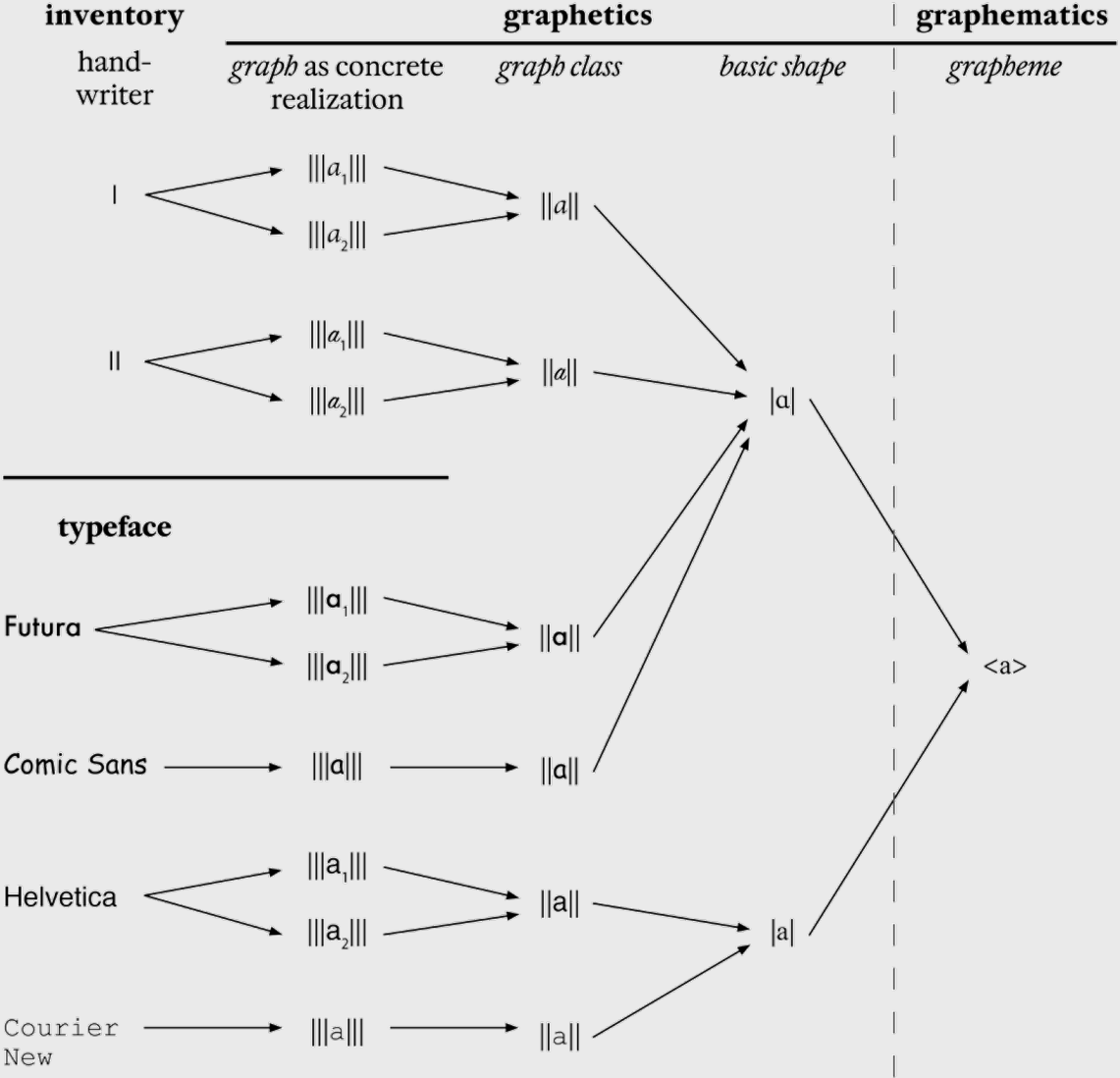
Graphematics: Allography

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Graphematics: Allography
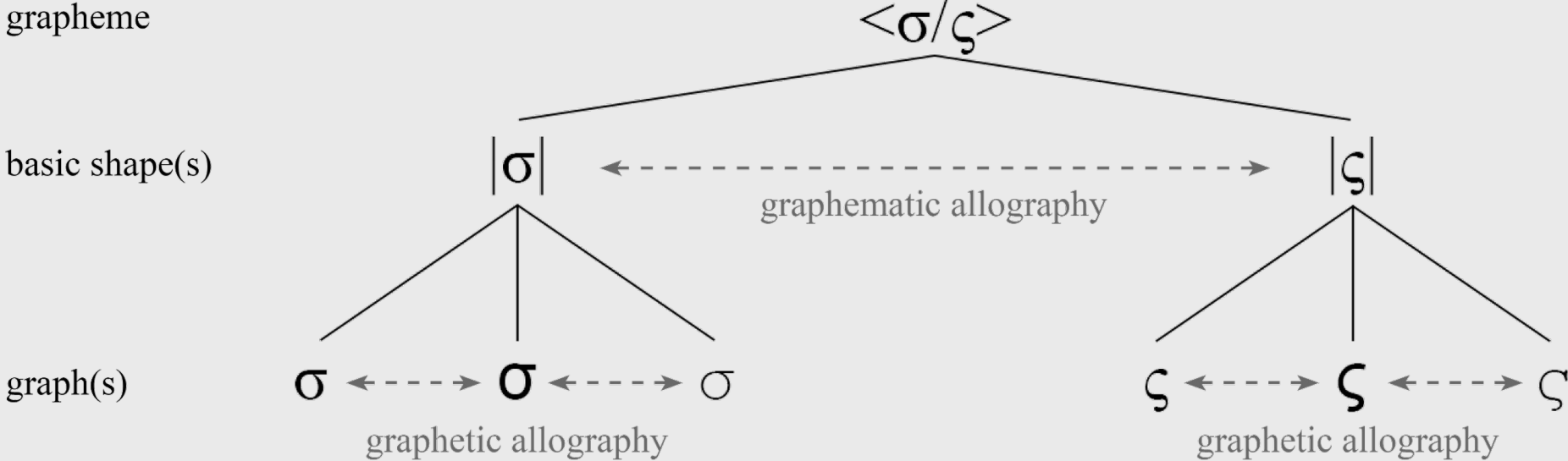
Orthography

"So, it's about someone writing something that can be read by others, and about adhering to the specified conventions that most language communities have now agreed upon with varying degrees of bindingness."

Karg 2015: 5, my translation

Orthography: Features

- external, (doubly) codified norm
- social bindingness
- (small) degree of variation
- changeability

Nerius 2007: 34–40, 2020: 369–370

Orthography: Areas of regulation

"[...] the aspects most commonly codified by means of orthographic rules are grapheme-phoneme correspondence, word division, hyphenation, capitalization, and the spelling of loan words."

Coulmas 1996: 379

Orthography: Areas of regulation

	phonographic correspondences	word separation	capitalization	integration of loanwords
Chinese	–	–	–	+
Japanese	+	–	–	+
Korean	+	+	–	+
Thai	+	–	–	+
Arabic	+	+	–	+
Hebrew	+	+	–	+

Orthography: Criteria for a typology

- **origin**: natural development vs. artificial implementation

- **regulation**: (How) is an orthography regulated? By who?

- **modification**: Has the orthography been changed or reformed?

- **codification**: (How) are the conventions/rules codified?

- **community involvement**: Were/are the actual users of the orthography involved in its design?

- **variability**: How much possibility is there for (un)licensed variation?

- **linguistic motivation**: Are the rules/correct spellings linguistically motivated, i.e., do they conform to the graphematics of the system?

Explanation

Prologue: Epistemological interest

"'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." Watt 1998: 118

Context: taken from a review of an important collected volume on writing, Daniels/Bright 1996

Explanation: The total (grapho)linguistic fact

use/practice ⟷ ideology

system/structure
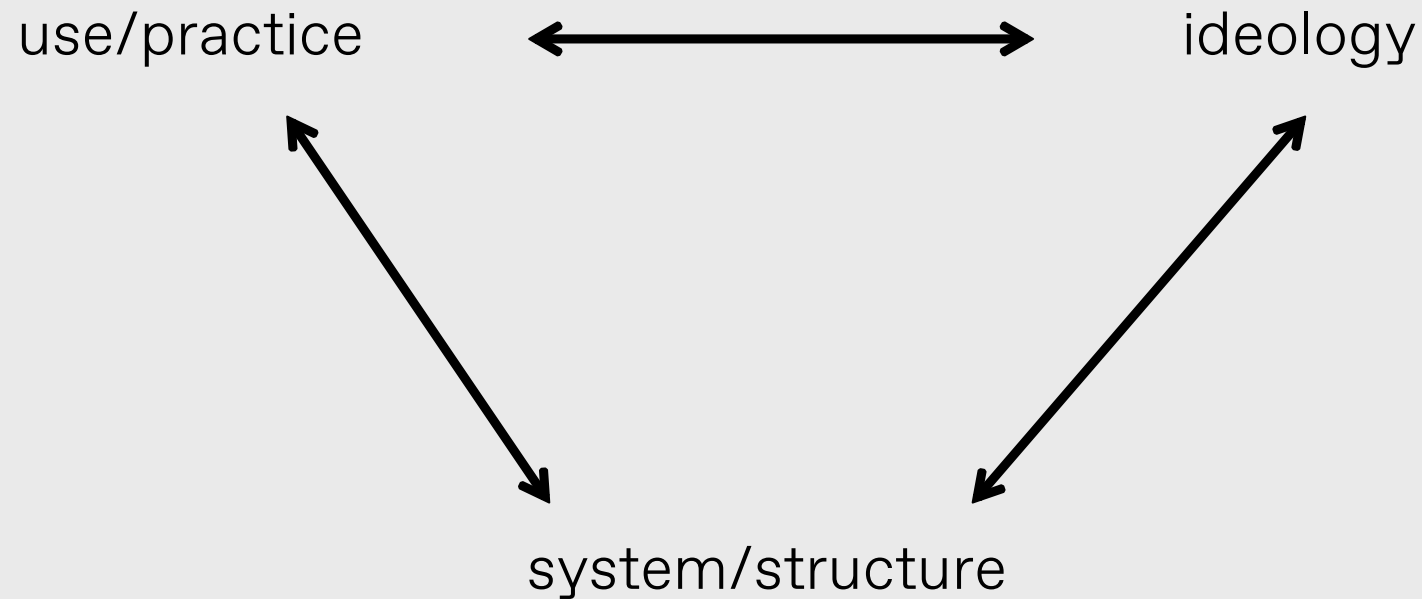
'the total linguistic fact' following Silverstein 1985

From evaluation to explanation

Venezky (1977)	Coulmas (2009)	Cahill (2014)
— mechanically suited for the language it is to reflect (2) — compatible with [...] its social-cultural setting (4) — psychologically/ pedagogically appropriate for its speakers (3)	— convenience (3) — tools (3, 4) — general applicability and linguistic fit (2) — expressive power (1, 2) — simplicity (1, 2, 3) — stability through time (2) — monochrome coding (2, 3)	— linguistically sound (2) — acceptable to all stake-holders (4) — usable (3, 4)

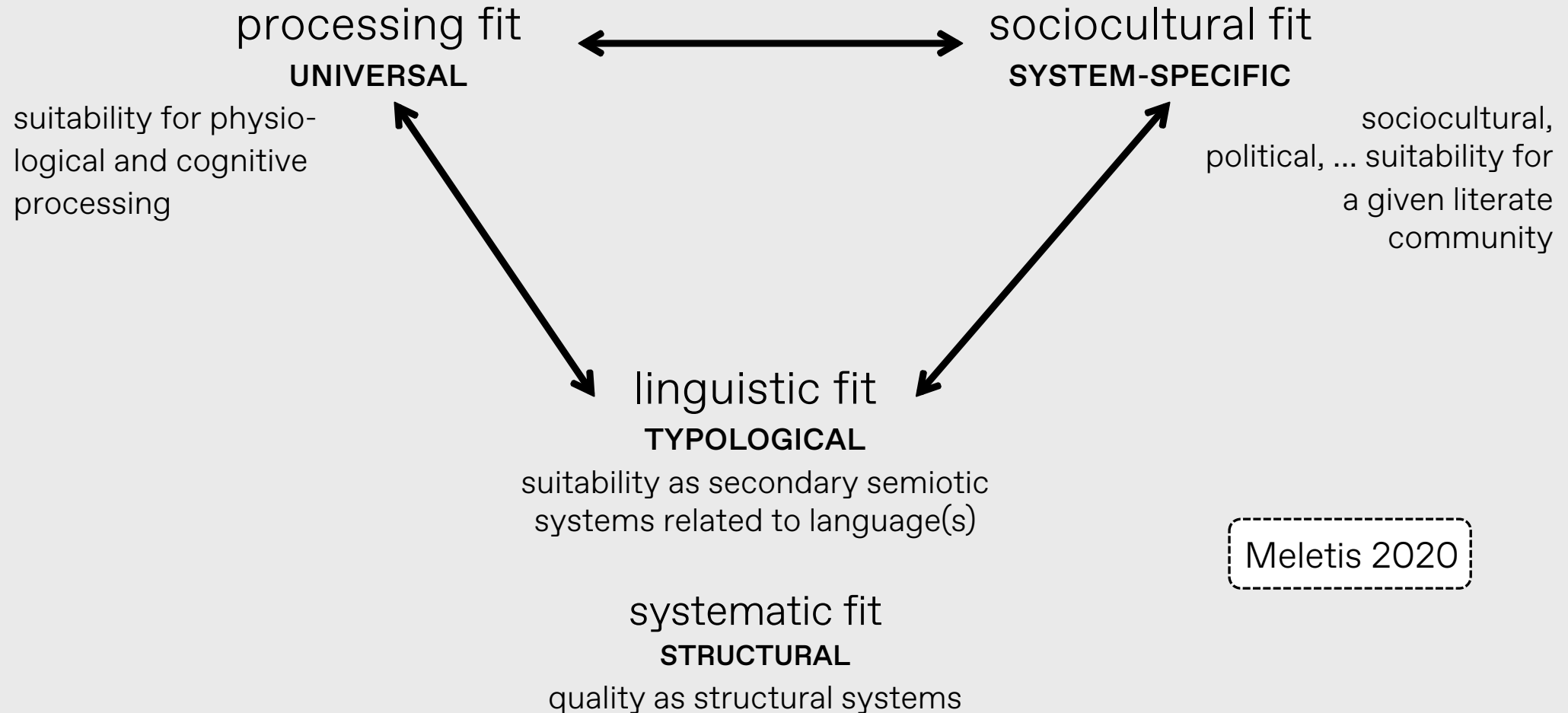| Baroni (2011)	Daniels & Share (2018)	Bauernschmidt (1980)

— maximum distinctiveness (1, 2, 3)
— size of the graph(em)ic inventory (1, 2, 3)
— cognitive salience (3)
— maximum naturalness (1, 2, 3, 4)
— inner consistency (1, 2)
	— linguistic distance (2)
	— spatial arrangement and non-linearity (1, 2, 3)
	— visual uniformity and complexity (1, 3)
	— historical change (2)
	— spelling constancy despite morphophonemic alternation (2)
	— omission of phonological elements (2)
	— allography (1, 2)
	— dual purpose letters (1, 2)
	— ligaturing (1, 2)
	— inventory size (1, 2, 3)
		— linguistic factors (2)
		— psycholinguistic factors (3)
		  – „magic of written language"
		  – native speaker reaction
		  – optimal inventory of symbols
		  – overuse of symbols
		— sociolinguistic factors (4)
		  – symbol value
		  – adjustments for dialects
		  – unity of language families
		  – prestige, numbers, and so forth
		  – established alphabets
		  – government agencies
		  – transfer value
		— practical factors (4)

Rogers (1995)	Smalley (1964)	
— linguistic (2) — psychological (3) — cultural (4) — technical (4)	— motivation for the learner (3, 4) — representation of speech (2) — ease of learning (3) — transfer (2, 4) — ease of reproduction (3, 4)	1. systematic fit 2. linguistic fit 3. processing fit 4. sociocultural fit

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Explanation: Multiple perspectives

processing fit
UNIVERSAL

suitability for physio-
logical and cognitive
processing

sociocultural fit
SYSTEM-SPECIFIC

sociocultural,
political, ... suitability for
a given literate
community

linguistic fit
TYPOLOGICAL

suitability as secondary semiotic
systems related to language(s)

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systematic fit
STRUCTURAL

quality as structural systems

Semiotic criteria: linguistic and processing fits

iconicity

pictography

diagrammaticity

|田|
/tián/
{field}

|森|
/sēn/
{woods}

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

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

biuniqueness

transparency

uniformity

|f|
/f/

|m|
/m/

a signans is in a graphematic relation with only one signatum

a signatum is in a graphematic relation only with one signans

indexicality

index[2]
/.../

2 This is an example of a footnote to illustrate how the parameter of indexicality works.

/.../

an indexing signans is in spatial contiguity with an indexed signatum

compositional transparency

|妈|
/mā/
{mother}
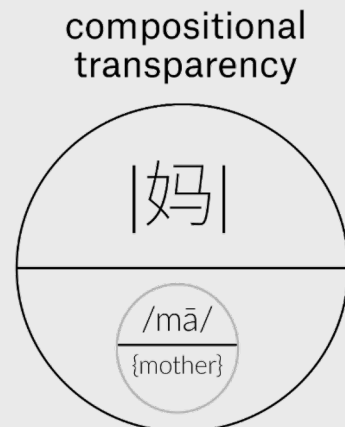
the sum of the graphematic value of the grapheme equals the graphematic value of the whole grapheme

positional transparency

|แปลก|
/plɛ:k/
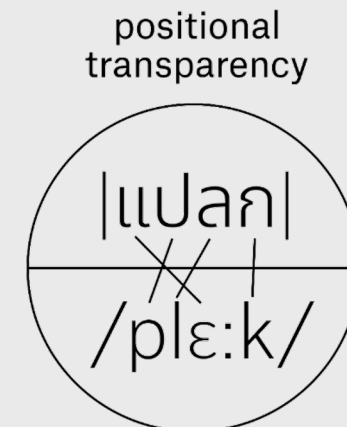
the order of the basic shapes in the signans of a graphematic string corresponds with the order of corresponding linguistic units in the signatum

figure—ground

|妈|

|ب|
/b/

|ا|
/a/

index[2]
2 This is an example note to illustrate meter of index

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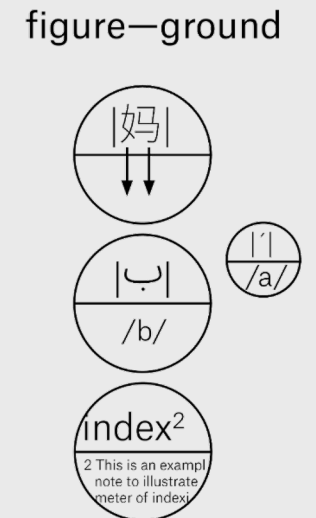
Sociocultural fit

– (non-)integration of foreign material, i.e., purism

– visual and/or functional cultural (un)specificity (e.g., Roman script as unspecific)

  – not only how a system is structured but also who created it (social hierarchies, hegemonies, dominance and subordinance)

– technological affordances (e.g., Unicode encoding for scripts)

– pluricentricity vs. monocentricity

– qualitative and quantitative breadth of literacy practices

– attitudes towards standard language (and orthography) and authorities of linguistic policy

– amount of history, i.e., age of a writing system and literacy practices in a given culture

– biscriptality Bunčić 2016 and contact phenomena Coulmas 2014

– types of orthographic regulation (community involvement, natural/artificial, codification, variability)

– status (alive, moribund, dead)

Conclusion

A diachronic grapholinguistics: Questions

– What is the relation between glottography and semasiography in ancient writing systems? Is the narrow definition of writing adequate for them? How does this compare to multimodality in modern writing systems?

– Do the concepts of *basic shape, grapheme, allography, orthography,* etc. also hold for ancient writing systems? How can phenomena like determinatives be accounted for with the concepts of graphematics?

– How can we adequately capture complex spatial and non-linear arrangements like in Aztec writing?

– What is the nature of normativity in 'pre-orthographic' writing systems? How do users negotiate conventions?

– What are the most important interactions between the fits in the 'evolution' or development of writing systems? How much of this development is predictable?

Thank you for your attention!
Grazie per la vostra attenzione!

References (1/2)

Baroni, Antonio. 2011. Alphabetic vs. non-alphabetic writing: linguistic fit and natural tendencies. *Rivista di Linguistica* 23(2). 127–159.

Bauernschmidt, Amy. 1980. The ideal orthography. *Notes on Literacy* 32. 12–21.

Bunčić, Daniel. 2016. A heuristic model for typology. In Daniel Bunčić, Sandra L. Lippert & Achim Rabus (eds.), *Biscriptality: A sociolinguistic typology*, 51–71. (Akademiekonferenzen 24). Heidelberg: Winter.

Cahill, Michael. 2014. Non-linguistic factors in orthographies. In Michael Cahill & Keren Rice (eds.), *Developing orthographies for unwritten languages*, 9–25. Dallas: SIL International.

Coulmas, Florian. 1996b. Typology of writing systems. In Hartmut Günther & Otto Ludwig (eds.), *Schrift und Schriftlichkeit/Writing and its use*, 1380–1387. (Handbooks of Linguistics and Communication Science 10.2). Berlin/Boston: De Gruyter. https://doi.org/10.1515/9783110147445.2.9.1380

Coulmas, Florian. 2009. Evaluating merit – the evolution of writing reconsidered. *Writing Systems Research* 1(1). 5–17. https://doi.org/10.1093/wsr/wsp001

Coulmas, Florian. 2014. Writing systems and language contact in the Euro- and Sinocentric worlds. *Applied Linguistics Review* 5(1). 1–21. https://doi.org/10.1515/applirev-2014-0001

Daniels, Peter T. & David L. Share. 2018. Writing system variation and its consequences for reading and dyslexia. *Scientific Studies of Reading* 22(1). 101–116. https://doi.org/10.1080/10888438.2017.1379082

Daniels, Peter T. & William Bright (eds.). 1996. *The world's writing systems*. Oxford: Oxford University Press.

Daniels, Peter T. 1991. Is a structural graphemics possible? *LACUS Forum* 18. 528–537.

Dürscheid, Christa. 2016. *Einführung in die Schriftlinguistik*, 5th edn. (UTB 3740). Göttingen: Vandenhoeck & Ruprecht.

Glück, Helmut. 2016. Schriftlinguistik. In Helmut Glück & Michael Rödel (eds.), *Metzler Lexikon Sprache*, 5th edn., 596. Stuttgart: Metzler.

Karg, Ina. 2015. *Orthographie: Öffentlichkeit, Wissenschaft und Erwerb*. (Germanistische Arbeitshefte 46). Berlin/Boston: De Gruyter. https://doi.org/10.1515/9783110366679

Meletis, Dimitrios. 2019. The grapheme as a universal basic unit of writing. *Writing Systems Research* 11(1). 26–49. https://doi.org/10.1080/17586801.2019.1697412

Meletis, Dimitrios. 2020. *The nature of writing. A theory of grapholinguistics* (Grapholinguistics and Its Applications 3). Brest: Fluxus Éditions. https://doi.org/10.36824/2020-meletis

References (2/2)

Meletis, Dimitrios. In press. What's in a name? Trends and challenges in naming the study of writing. In Yannis Haralambous (ed.), *Grapholinguistics in the 21st Century 2022*. Brest: Fluxus Editions.

Meletis, Dimitrios & Christa Dürscheid. 2022. *Writing systems and their use. An overview of grapholinguistics* (= Trends in Linguistics. Studies and Monographs; 369). Berlin/Boston: De Gruyter. https://doi.org/10.1515/9783110757835

Meletis, Dimitrios & Christa Dürscheid. In press. Grapholinguistics as a unified framework for the cross-linguistic study of writing. In Michael Schulte, Gaby Waxenberger, Kerstin Kazazzi & Paola Cotticelli (eds.), *From the Maya Script to the Germanic Runes – Case studies on the Typology of Scripts and Research on Writing Systems*. (ScriptandSound 5). Wiesbaden: Reichert.

Nerius, Dieter. 2007. Begriff und Merkmale der Orthographie. In Dieter Nerius (ed.), *Deutsche Orthographie*, 4th edn., 30–40. Hildesheim: Olms.

Nerius, Dieter. 2020. Kodifikation der Schreibung. In Thomas Niehr, Jörg Kilian & Jürgen Schiewe (eds.), *Handbuch Sprachkritik*, 368–375. Stuttgart: Metzler. https://doi.org/10.1007/978-3-476-04852-3_46

Rogers, Henry. 1995. Optimal orthographies. In Insup Taylor & David R. Olson (eds.), *Scripts and literacy: reading and learning to read alphabets, syllabaries and characters*, 31–43. (Neuropsychology and Cognition 7). Dordrecht: Springer. https://doi.org/10.1007/978-94-011-1162 -1_3

Silverstein, Michael. 1985. Language and the culture of gender: At the intersection of structure, usage, and ideology. In Elizabeth Mertz & Richard J. Parmentier (eds.), *Semiotic mediation: Sociocultural and psychological perspectives*, 219–259. New York: Academic.

Smalley, William A. 1964. How shall I write this language? In William A. Smalley et al. (eds.), *Orthography studies: articles on new writing systems*, 31–52. (Helps for Translators 6). London: United Bible Societies.

Venezky, Richard L. 1977. Principles for the design of practical writing systems. In Joshua Fishman (ed.), *Advances in the creation and revision of writing systems*, 37–54. (Contributions to the Sociology of Language 8). Berlin, Boston: De Gruyter. https://doi.org/10.1515/97831 10807097-004

Watt, W. C. 1998. The old-fashioned way. *Semiotica* 122(1–2). 99–138. https://doi.org/10.1515/semi.1998.122.1-2.1