Text and Image in Perspective

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Writing his zoological treatise on the ‘parts’ of animals at some point in the fourth century BCE, Aristotle stated that “some of these things need to be clarified by an account, others rather by visual inspection” (*De partibus animalium* IV, 5, 680 a2-3). The philosopher was dealing with the issue of describing anatomical details—a complex endeavour both through text and drawings. After all, sketch a wrong detail or use an inappropriate adjective and very quickly you’ll find you have the wrong sort of animal set out in your description. But why is this exactly? Why would we need a verbal description for some features and a visual representation for others? And why doesn’t either suffice in every case? While these may seem naive questions to ask, we would expect that possessing one of the two formats would be enough. And yet, there are types of information that are hard or even impossible to convey in texts, just as there are types of information hard or even impossible to convey in images. This is why it is necessary for Aristotle, in some cases, to compensate for the incompleteness of one system with the elucidations of the other (Fürst von Lieven et al. 2020: 12). Whilst there is agreement that words and images do different things, there is little consensus on the differences between the two media, which can appear undefinable and incomplete when separate: “the absence of an adequate sense of word and image is attested not only by the profusion of scholarship on the subject (which does not seem to be united by a comprehensible interpretive platform) but also by the equally large range of words that are used to name the putative difference” (Elkins 2001: 84). While the musings of Aristotle highlight the central tenet of this volume—the contrasting and complimentary communicative functions of word and image—Elkins cautions us against conceptualising word and image as strict binary opposites.

For the greater part of Western history since Antiquity, ways of thinking about text and image have been articulated mainly in terms of imposed hierarchies of perception. Whether the written or the figurative is favoured, the aim remains the same: establish the superiority of one system over the other (see below). Not only does this imply a sharp distinction between the two—which, as the quote above demonstrates, is purely subjective—but it fundamentally alters and distorts our own reading of the communicative functions performed by text and image, in the past as in the present. In a discipline such as archaeology, where interpretation of the past often depends on evidence that can be categorised as 'visual', it is more important than ever to understand exactly what *can be* 'text' and 'image'—rather than what *is*—and how integrating the acts of reading and seeing might offer a useful lens to study the past and understand the study of the past, itself a narrative composed of writing and images. To broaden our comprehension of communication in past societies and our own communication of them, Volume 36.2 attempts to offer fresh perspectives on humans' most intimate and permanent way of leaving traces of themselves.

Logocentrism and iconocentrism: hierarchies of perception

Ancient philosophical worldviews, Christian theology, trends in art history and philology have all stressed the importance of the word/speech (*logos*) above everything else —'in the beginning was the Word', *not* the image. Of course, the infamous, ambiguous opening of St. John's Gospel made use of the noun *logos* in Greek, which may imply both Latin *verbum* and *sermo*—'word' and 'speech/conversation'. Which did the apostle imply here? Traditionally, the sentence had always been translated in Latin with *verbum*, but Erasmus, in 1516, rather shockingly used *sermo* (Goldhill 2002, 25-26). The ambivalence of the concept of *logos*, alternatively interpreted as the written or the spoken word, runs parallel to most Western thought. Plato believed that writing was inherently evil because it was deceitful and destroyed memory: as opposed to the benefits of oral learning to retain content, written characters only gave 'the semblance of truth' and eventually led to forgetfulness. According to the philosopher, they also resembled the images of painting, which, in spite of their lifelikeness, were silent. Written characters, too, had nothing to say for them-

selves, they simply repeated the same thing over and over again (*Phaedrus* 274-275). Aristotle followed along his mentor's lines, stating that written words were symbols of spoken words (*De Interpretatione* 16A). From Voltaire in the eighteenth century (1764) to de Saussure in the twentieth (*Cours* 45), the Platonic-Aristotelian maxim of writing as parasitic and secondary to speech was maintained throughout—not surprisingly, Derrida (1976) traced it back to Plato himself. But this perspective has not only dominated philosophy and linguistics, it has come to influence and pervade theology too, particularly Lutheran-protestant, and several strands of German *Altertumwissenschaft* (Squire 2009: 15 ff), translating the epistemological centrality of speech into a clear preference for text over art. Therefore, Plato's general aversion to art—but in fact not his aversion to writing—has been maintained, and writing has come to be considered as the next best thing to the *logos*. Images have thus lost much of their independence and value—although something similar has happened, at the opposite end of the spectrum, with photography, as discussed below. Indeed, they have rarely been thought of as separate from (written) words. This attitude, which assigns epistemological superiority to the word, has been named 'logocentrism'.

Logocentrism is primarily problematic because it tends to confuse and equate language and speech with each other. However, writing and speech are in fact parallel, not in series—it is language that must exist before there can be writing, not *speech*. Language is "a formal system of differences and not restricted to vocal utterances [...] speech certainly is a language but not all language is speech", but it is also "any system of symbols that serves this innate faculty to communicate through symbols: speech is one such system of symbols, writing is another" (Powell 2009: 4–5, 8, 18). In a logocentric world, glottocentric and/or phonocentric constructions assume a one-to-one correspondence between sounds uttered and letters depicted. While this may be closer to the truth with an alphabetic script, it is certainly not the case with other writing systems. Furthermore, writing inevitably becomes a language of its own (Brockmeier and Olson 2009: 8). Because of its very nature, it quite often 'freezes' speech, not accounting for all its differences and repressing them (Powell 2009: 7), so that, even when dealing with alphabetic scripts, there are not inevitably precise correspondences between what is said and what is

written (Harris 2000: 71–81; Powell 2009: 19). If the supposedly indissoluble link between writing and *logos* ceases to exist, writing loses its epistemological centrality. This not only potentially frees images from their dependent role, but also opens up new ways of 'seeing' text. Departing from a passive reading of words-as-representation, sight as a modality is itself problematized in the critical analysis of texts as constructed and mediated acts of perception.

Adapting to this new shift in epistemology, American and German cultural theorists in the early 1990s proposed a 'pictorial' or 'iconic' turn, contesting logocentric dominance in the Western world on the interpretation of visual and material culture (Boehm 1994; Mitchell 1994; Moxey 2008). The iconic turn sought to examine visual media in the widest sense, including subjects that were previously considered 'non-art', such as applied arts and photography. Expanding the field of inclusion necessitated a methodological break with traditional modes of visual analysis, and consequently this turn was acutely felt in art historical studies, where images are traditionally 'read' for what their semiotic, representational, and/or socio-historical content 'shows'. Instead, this re-focusing on the image prioritized acts of 'seeing', from perception and reception to attention and memory (Bachmann-Medick 2016: 245). Far from neutral, visuality is a cultural construct that influences and moulds our subjective sight (Bryson 1988; Lacan 1979) and is laden in the Western world with (sub)conscious value judgments (Elkins 2001). This holds true for all types of visual media, both art and 'non-art.' Photography, for example, whether captured at the field site or in the lab, is not inherently scientifically objective: 'looking' through the camera lens or at the finished product reflects the situatedness of the maker and the receiver, mediated via 'discourse and convention' (Shanks 1997: 78). The epistemological field of image studies thus widened from the aesthetic to the discursive and cognitive, bringing the discipline into contact with images from the natural sciences, medicine, and cultural heritage management. Yet the 'iconic' turn is still very much preoccupied with determining the relationship of images and image-making to oral and written language, and to what extent 'seeing' relies on 'reading', if at all.

According to Goody (1987: 10), "visual representation requires the advanced conceptual system intrinsic to language use", and "any sufficiently

close look at a visual artifact discloses mixtures of reading and seeing" (Elkins 2001: 84). The idea of an image without a linguistic equivalent in its matter or interpretation seems inconceivable to us—arguably, even if an image does not need language per se to exist, it does depend on humans' (linguistic) interpretation of it (Bachmann-Medick 2016: 260). Despite the prevalence of semiotic readings of images, a picture cannot be 'read' in the same way a text can, although some sort of internal coherence of its signs does exist (Elkins 2001: 55). While much of Western art has been conceived as connected to text, in the sense that its cultured audience should be acquainted with the story behind the image, just like with writing, the link is with language, rather than writing itself. Both are not-so-alternative *systems* through which we communicate. And yet, the bias that images somehow exist in a dependent state from writing is perpetuated—and perhaps partially originates—visually. The flat, two-dimensionality of letters contrasts starkly with the imagined depth the illusionism of figurative art creates (Baines 2008: 95–97; Schapiro 1996: 119–21) and the two seem to sit rather uncomfortably together. In a self-fulfilling prophecy of sorts, the absence of one from the other, only serves to confirm logocentric views.

However, outside of this historical Western paradigm, image systems comfortably exist, forming sophisticated "technical and cognitive supports for expansive social networks" that do not always require established written explanation to function (Wengrow forthcoming). In New Ireland, Papua New Guinea, the tying and untying of gingerplant knots around trees relate to progression of land ownership through time, and processes of knotting, whether as part of bodily performance or demarcating architectural space, recall complex relationships between living and ancestral populations (Kuchler 1999: 152). Images can act as mnemonic 'anchors' for oral stories and social histories (cf. Wengrow forthcoming): narrative is told through images and through the words that these images inspire. As explored in Phillips (this volume), regarding the interconnectedness between images of combat and the body of the deceased in Late Bronze Age Greece, the images rely on orality and its stories, orality and its stories rely on the existence of such images. Furthermore, historical examples of Western contact with unfamiliar communicative systems could foment a radical and imposed shift on the understanding and use of

line and figure. Prior to the Spanish Conquest, the Aztec and Mixtec tradition in Mesoamerica did not consider art and writing to be at all separate, as evidenced by the use of the same word to describe the two activities (Chrisomalis 2009: 69), and the same is true for several other ancient languages and cultures, such as Ancient Greece. There was no fixed reading direction and the pictographs existed two-dimensionally in a blank space with no perspective (Boone 2011: 215), somewhat like the alphabet. The pictographs represented things through symbols, rather than through sounds—except very rarely (Boone 2008: 254). With the Spanish Conquest, a wave of new pictographs emerged, but their pictorial value was slowly lost, in favour of glottography, as they moved further and further away from their glyphic quality, assuming the typical mimetic, naturalistic characteristics of European art. Alphabetic writing was also adopted and frequently adorned the pictographs. Text and image, as in European tradition, completely bifurcated, though pictographs kept on being used for several centuries still (Boone 2011; Monaghan 2012). The classic 'illusionistic' quality of Western art, discussed above, essentially turned the pictographs more into 'art', with a different relationship to space (Boone 2011: 215-216). These are only a few examples which highlight how in different times and areas of the world images have existed in a different relationship to text, which did not in fact imply perceptual hierarchies or any difference at all between the two media.

How has modern Western scholarship approached this new elevation and establishing of images to a level against and/or with texts? There are two diverging schools of thought: in the US, critical media and visual culture studies emerged in response to the iconic turn in contemporary art, focusing on strategies of visualization and how images are mobilized as bearers of both social and political power (Curtis 2010; Heywood and Sandywell 2012; Mirzoeff 2012). Alternatively, in Germany scholars drew their inspiration from philosophy on phenomenology and hermeneutics (e.g. Heidegger, Husserl, Merleau-Ponty), which was concerned with the ontological status of images, and instead advocated for formalist analyses of images-as-science, or *Bildwissenschaft* (Bredekamp 2003; Rampley 2012; Schulz 2005). The resulting approaches variously utilized "a phenomenological theory of images placing emphasis on visibility, an anthropology of images focusing on corporeality, [or] a

visual semiotics stressing symbolism" (Bachmann-Medick 2016: 250). These approaches each have their own weaknesses, risking anachronism, lack of cultural and social context, or an overreliance on linguistic models and discounting the emotional and affective power of images. Visual culture studies have also been criticized as too inclusive and heterogeneous, imposing contemporaneity on historical images, and privileging the visual over other modes of sensory perception, such as the auditory or haptic. In some ways, the emphasis on an iconic turn in the arts and humanities has swung the pendulum to its opposite end, furthering a hierarchical narrative, instead of thinking about how image and text as cognitive systems can either interact or not interact depending on learned behaviours of communication acquired in a given society. Reconciling the experiential aspects of images when the cultures in question are far removed from us in space and time should not be undermined by modern assumptions or constructions.

Reading as seeing, seeing as reading

Nevertheless, a crucial aspect which concerns these two media, today as in the past, is their potential for restricting, rather than allowing access to, knowledge. This paradoxical ability, indeed almost *power*, is once more potentially shared by both text and images, but it has been exploited especially through writing. On a very basic level, one skill does not need to be learnt, while the other does: one does not need to be instructed in how to 'see' images, although one may have to study many years to learn how to 'read' them—and the very use of the verb 'to read' derives from a logocentrist attitude. But one must have at least the basic rudiments of education in order to read a text. So effectively, logocentric attitudes have also served to exclude most people from accessing the higher echelons of learning and intellectualism, in a form of elitist restriction of knowledge, while downplaying the complexity of image-systems in both Western and non-Western societies. The exclusionary nature of writing plays out in very diverse and complex ways, as analysed by Hodgkinson (this volume), who argues that misleading photograph descriptions in the British Library archive of Lord Curzon's activities in India can operate a selection in the images, purposefully picking out some characters, and just as purposefully eliminating others, blurring the boundaries between

titles, handwritten notes and subsequent descriptions. Personal aims mix with greater historical narratives and archival objectives, often entirely shifting the content and meaning of photographs, particularly when one cannot look at the images themselves. Although archival texts can mask or withhold information, they can also be utilised in a productive capacity, as demonstrated in the paper by Hosek, Warner-Smith, and Novak (this volume), who read and interrogate the archive with and against skeletal remains to build a more holistic picture of past life histories.

The taught component of 'reading' also contributes to the ultimately artificial nature of perceptual hierarchies. Street (1984: 261) reminds us that all literacies, whether visual or linguistic, are historically situated and socially constituted, not merely a 'set of technical skills'. Croker (this volume) explores how varying degrees of textual and visual literacy inform the interpretation of a 5th century BCE Athenian kylix, in which the playful inclusion of inscriptions suggests a humorous commentary on literacy and the illiterate. Literacies thus rely on the perpetuation of external apparatuses that are themselves applied onto images and texts, including institutional and educational practices as well as the privileging of some forms of knowledge over others. As demonstrated in childhood development studies (Boone 2005: 314; Tolchinsky 2009: 471), pre-literate children's scribbles and colour pastiches frequently display a mix of figurative elements and letters. In their minds, there is no difference between the two. This all changes upon entry in school, when they are taught their letters and learn that there is a profound difference between the art and 'words' they once amalgamated. The two activities subsequently bifurcate in their minds, the former becoming an artistic, expressive activity, the latter an essential communicative skill, full of rules and constraints. Where art 'expresses', writing 'communicates', where children 'read' books replete with images, adults read books filled with words (Boone 2005: 314)—a situation sometimes used to justify the ontological divide between prehistory and civilised historical societies.

New horizons on text and image: the influence of cognition and materiality

This sharp distinction perpetuated in modern Western education needs to be addressed from a different, and much more intimate, point of view: that of the mind. How we encounter visuality, for example, involves the interplay between the production of mental images and the creation of material objects, inhabiting social spaces and participating in the collective sensorium shared by humans and objects. As Ouimet (this volume) discusses at length, the cosmological and physical spaces produced in divinatory and omen texts, those which are both seen and unseen by the diviner or observer, influence the way humans navigate their social world. This brings studies on text and image into collaboration with neuroscience, questioning how we construct our external world via mental images and the extent to which bias influences our reproduction of these same images back out into the external world. The arrival of modern cognitive neuroscience within this field has effectively offered us unparalleled glimpses into the human mind and its process of production and reception of communication. Studies have moved from the analysis of response—from psychological reactions to the 'power' of images (Freedberg 1981) to the role of pictures in the elaboration of empathy and pain (Schott 2015)—to that of 'production', to examine what it is in our minds that triggers the response in the first place. Neuronal Recycling Theory, for example, has established a very clear connection in human brains between image and text (the Visual Word Form Area, VWFA) and may go a long way in explaining why the two media are so very linked (Dehaene and Cohen 2011; Dehaene-Lambertz et al. 2018). Furthermore, studies in the acquisition of literacy have also shed light on how being lettered may affect our imaging and spacing skills (Dehaene et al. 2010; Matute et al. 2000; Petersson et al. 2009: 170).

Supporting this cognitive picture is the mediality of images and texts themselves, being both visible as an act of existence as well as visual in how we experience them (for images, see Mersch 2016: 165). As the artisan crafts a vessel through materials, this feedback loop between visuality and the visible is both co-constitutive and continuous. The latter shifts focus from images-as-representation to the visual-as-presentation, and advocates that images

lose their implicit status as 'static entities' in favor of processes of 'imaging' as a productive, affective relationship between viewers and images, or more broadly, things (Danielsson and Jones 2020: 1-4). Instead of relying on an imposed knowledge system, it generates its own: when an image 'presents', it determines its own logic and "evidence which cannot be generated discursively" (Mersch 2016: 176). Information as such is also translational, and can move between verbal and non-verbal sign systems, undermining the text-image dualism in communication while pointing towards multiple orders of cognitive processing. In tracking numismatic examples from Classical Asia Minor, Kerschbaum and Vidin (this volume) show how various minting authorities circulated coins which assumed multiple literacies of the viewer/user, communicating complex political and topographical statements. Visual information can also be strategically coded as both image and text; as Miller (this volume) argues in a re-interpretation of imagery on ancient Egyptian apotropaic wands, iconography is imaginatively ordered and utilized in order to negotiate restrictive cultural expectations on social decorum.

As a discipline, archaeology needs to engage with studies of text and image, not least because its focus on the origins and evolution of human processes makes it particularly privileged and invaluable as a resource. Since archaeology is concerned with object-based or material-based frameworks, it can risk a methodology bias of 'seeing' over other modalities that are equally capable of producing meaning. The arrival of cognitive archaeology in the 1990s challenged archaeologists to think outside of narrowly materialist understandings of what objects might 'mean' to include the role of human cognitive processes and their accompanying social contexts in the creation and use of objects (Renfrew 1994). Recent studies in materiality also draw attention to how images are embedded in media, advocating that it is important to not only consider the physical properties of a visual or textual (re)presentation, but also the context and process(es) of its own making and becoming (Danielsson and Jones 2020; Enderwitz and Sauer 2015; Ingold 2012; Miller 2005; Molyneaux 1997: 3-5). It is the material entanglement between images, texts and other media that provides us with a window into the emotional, cognitive, and experiential aspects of human behavior. In addition, investigating how different sensory modalities interact, without prizing one over the other, is another

useful frame of inquiry to bear on image-text relationships. Overturning the traditional logocentric model linking monumental narrative art to Norse sagas, Neiß and Franco Valle (this volume) take a multimodal approach in their paper on Animal Art, proposing that a combination of visual, material, verbal and mental modalities is needed to appropriately understand the relationship between Viking Age art objects and ekphrasis. As opposed to a rigid tension between image-systems and text-systems, it is instead useful to consider how texts and images either subvert or affirm each other in the co-production of 'things'. Terryn (this volume) provides an example of how text and image were equally employed in a woodblock print series in order to fully realize the didactic aims of the state in 1870s Japan. Lutz (this volume), in a discussion on the figure of Andromeda in Roman wall painting, also demonstrates the clear influence of text over depictions, but also depictions over text, in an intricate dialogue between the two media.

Dissolving hierarchies of perception: old questions, new perspectives

As the contributions to this volume show, diverse communication systems, in various combinations of written and oral text and image, can be said to have existed and been privileged at any one time: in different contexts and situations, for different people, these have been deemed the most effective and efficient means of communicating particular messages. It is necessary, then, to approach these modalities in a way that does not artificially prize text over image, or image over text. One and the other do different things and communicate in diverse ways, requiring different sets of skills, so that the questions that need asking are of another sort—why one system is chosen over the other in any given situation, or why, within the same context, both are used and what they are *each* used *for*. By exploiting the strongest communicative modes of each system, one arguably communicates the strongest possible message—and, depending on what the message is, the strongest communicative modes may be different. Or, by insisting on the strength of one, as opposed to the other, one lays an artificial emphasis on the elements one wishes to assert. Archaeology is the ideal place to ask these questions of text and image, due to new and emerging toolkits. The contributions of cognitive neuroscience, particularly, have provided archaeologists with the instruments to (begin to)

understand the impact of images and writing on the brain and the functional consequences of literacy, allowing us to explore how communication has shaped our minds (past and present) and how our minds have shaped communication itself. This volume draws attention to all these elements and their diverse application in archaeological and historical research. From what is being communicated and how this changes over space and time, to different modes of seeing and reading, this volume explores the very wide range of ways in which humans have thought of, employed, and exploited the interaction between text and image to communicate across the breadth of history.

References

Aristotle. 2001. *On the Parts of Animals I–IV, translated with an Introduction and Commentary*. Trans. JG Lennox. Oxford: Clarendon Press.

Bachmann-Medick, D. 2016. *Cultural Turns. New Orientations in the Study of Culture*. Trans. A. Blauhut. Berlin: De Gruyter.

Baines, J. 2008. On Functions of Writing in Ancient Egyptian Pictorial Representation. In Taylor, P. (ed.) *Iconography without Texts*. London, Turin: Warburg Institute, 95–126

Boehm, G. 1994. Die Wiederkehr der Bilder. In Boehm, G. (ed.). *Was ist ein Bild?*. Munich: Fink, 11–38.

Boone, E.H. 2005. Beyond Writing. In Houston, S.D. (ed.) *The First Writing : Script Invention as History and Process*. Cambridge: Cambridge University Press, 313–48.

Boone, E.H. 2008. The Death of Mexican Pictography. In Baines, J., Bennet, J. and Houston, S.D. (eds). *The Disappearance of Writing Systems: Perspectives on Literacy and Communication*. London: Equinox Pub, 253–84.

Boone, E.H. 2011. Ruptures and Unions: Graphic Complexity and Hybridity in Sixteenth-Century Mexico. In Boone, E.H., and Urton, G. (eds). *Their Way of Writing: Scripts, Signs, and Pictographies in Pre-Columbian America*. Washington, D.C.: Dumbarton Oaks Research Library and Collection, 197-226.

Bredekamp, H. 2003. A Neglected Tradition? Art History as 'Bildwissenschaft.' *Critical Inquiry* 29(3): 418–429.

Brockmeier, J. and Olson, D.R. 2009. The Literacy Episteme. In Olson, D.R. and Torrance,

N. (eds). *The Cambridge Handbook of Literacy*. Cambridge: Cambridge University Press, 3–22.

Bryson, N. 1988. The Gaze in the Expanded Field. In Foster, H. (ed.). *Vision and Visuality*. New York: New Press, 87–108.

Chrisomalis, S. 2009. The Origins and Co-Evolution of Literacy and Numeracy. In Olson, D.R. and Torrance, N. (eds). *The Cambridge Handbook of Literacy*. Cambridge: Cambridge University Press, 451–67.

Curtis, N. 2010. *The Pictorial Turn*. London/New York: Routledge.

Danielsson, I-M.B. and Jones, A.M. 2020. Introduction. In Danielsson, I-M.B. and Jones, A.M. (eds). *Images in the making: art, process, archaeology*. Manchester: Manchester University Press, 1–15.

Dehaene, S., Pegado, F., W. Braga, L., Ventura, P., Nunes Filho, G., Jobert, A., Dehaene-Lambertz, G., Kolinsky, R., Morais, J., and Cohen, L. 2010. How Learning to Read Changes the Cortical Networks for Vision and Language. *Science* 330 (6009): 1359–64. https://doi.org/10.1126/science.1194140.

Dehaene, S. and Cohen, L. 2011. The Unique Role of the Visual Word Form Area in Reading. *Trends in Cognitive Sciences* 15 (6): 254–62. https://doi.org/10.1016/j.tics.2011.04.003.

Dehaene-Lambertz, G., Monzalvo, K. and Dehaene, S. 2018. The Emergence of the Visual Word Form: Longitudinal Evolution of Category-Specific Ventral Visual Areas during Reading Acquisition. *PLoS Biol* 16 (3): e2004103–e2004103. https://doi.org/10.1371/journal.pbio.2004103.

Derrida, J. 1976. *Of Grammatology*. Trans. G. Chakravorty Spivak. Baltimore: John Hopkins University Press.

Elkins, J. 2001. *The Domain of Images*. Ithaca: Cornell University Press.

Enderwitz, S. and Sauer, R. (eds). 2015. *Communication and Materiality: Written and Unwritten Communication in Pre-Modern Societies*. (Materiale Textkulturen 8). Berlin/Boston: De Gruyter.

Freedberg, D. 1991. *The Power of Images: Studies in the History and Theory of Response*. Chicago: University of Chicago Press.

Fürst von Lieven, A., Humar, M. and Scholtz, G. 2020. Aristotle's Lobster: The Image in the Text. *Theory in Biosciences*, October. https://doi.org/10.1007/s12064-020-00322-6.

Goldhill, S. 2003. *Who Needs Greek? Contests in the Cultural History of Hellenism*. Cambridge:

Cambridge University Press.

Goody, J. 1987. *The Interface between the Written and the Oral*. Cambridge: Cambridge University Press.

Harris, R. 2000. *Rethinking Writing*. London: Athlone Press.

Heywood, I. and Sandywell, B. (eds). 2012. *The Handbook of Visual Culture*. London/New York: Berg.

Ingold, T. 2012. Toward an ecology of materials. *Annual Review of Anthropology* 41: 427–442.

Kuchler, S. 1999. Binding in the Pacific: between loops and knots. *Oceania* 69(3): 145–156.

Lacan, J. 1979. *The Seminars of Jacques Lacan, Book XI: The Four Fundamental Concepts of Psychoanalysis*. London: Hogarth Press & Penguin.

Matute, E., Leal, F., Zarabozo, D., Robles, A., Cedillo, C. 2000. Does Literacy Have an Effect on Stick Construction Tasks? *J. Inter. Neuropsych. Soc.* 6 (6): 668–72. https://doi.org/10.1017/S1355617700666043.

Miller, D. 2005. Materiality: an Introduction. In Miller, D. (ed.). *Materiality*. Durham: Duke University Press, 1–50.

Mirzoeff, N. 2012. *The Visual Culture Reader*. 3rd ed. London: Routledge.

Mitchell, W.J.T. 1994. *Picture Theory: Essays on Verbal and Visual Representation*. Chicago/London: University of Chicago Press.

Mersch, D. 2016. Pictorial Thinking: On the 'Logic' of Iconic Structures. In Paić, Ž. and Purgar, K. (eds). *Theorizing Images*. Newcastle upon Tyne: Cambridge Scholars Publishing, 162–184.

Molyneaux, B.L. 1997. Introduction. The Cultural Life of Images. In Molyneaux, B.L. (ed.). *The Cultural Life of Images: Visual Representation in Archaeology*. London: Routledge, 1–10.

Monaghan, J. 2012. The Shape of Script in a Colonial Context: Alphabetic and Pictorial Registers in Mixtec Texts. In Houston, S.D. (ed.). *The Shape of Script: How and Why Writing Systems Change*. Santa Fe: School for Advanced Research Press, 209–28.

Moxey, K. 2008. Visual Studies and the Iconic Turn. *Journal of Visual Studies* 7(2): 131–146.

Petersson, K.M., Ingvar, M., Reis, A. 2009. Language and Literacy from a Cognitive Neuroscience Perspective. In Olson, D.R. and Torrance, N. (eds). *The Cambridge Handbook of*

Literacy. Cambridge: Cambridge University Press, 152–82.

Plato. 1914. *Euthyphro. Apology. Crito. Phaedo. Phaedrus.* Trans. Harold North Fowler. Loeb Classical Library 36. Cambridge: Harvard University Press.

Powell, B. 2009. *Writing: Theory and History of the Technology of Civilization*. Oxford: Wiley-Blackwell.

Rampley, M. 2012. Bildwissenschaft: Theories of the Image in German-Language Scholarship. In Rampley, M., Lenain, T., Locher, H., Pinotti, A., Schoell-Glass, C. and Zijlmans, K. (eds). *Art History and Visual Studies in Europe: Transnational Discourses and National Frameworks.* Leiden/Boston: Brill, 119–134.

Renfrew, C. 1994. Towards a cognitive archaeology. In Renfrew, C. and Zubrow, E.B.W. (eds). *The ancient mind: Elements of cognitive archaeology*. Cambridge: Cambridge University Press, 3–12.

de Saussure, F. 1971. *Cours de Linguistique Générale* (3rd ed). Paris: Payot.

Schapiro, M. 1996. *Words, Script, and Pictures: Semiotics of Visual Language*. New York: G. Braziller.

Schott, G.D. 2015. Pictures of pain: their contribution to the neuroscience of empathy. *Brain* 138 (3), 812–820.

Schulz, M. 2005. *Ordnungen der Bilder: Eine Einführung in die Bildwissenschaft*. Munich: Fink.

Shanks, M. 1997. Photography and Archaeology. In Molyneaux, B.L. (ed.). *The Cultural Life of Images: Visual Representation in Archaeology*. London: Routledge, 73–107.

Squire, M. 2009. *Image and Text in Graeco-Roman Society.* Cambridge: Cambridge University Press.

Street, B.V. 1984. *Literacy in Theory and Practice*. Cambridge: Cambridge University Press.

Tolchinsky, L. 2009. The Configuration of Literacy as a Domain of Knowledge. In Olson, D.R. and Torrance, N. (eds). *The Cambridge Handbook of Literacy*. Cambridge: Cambridge University Press, 468–86.

Voltaire. 1764. *Dictionnaire Philosophique, Portatif*. Londres: [s.n.].

Wengrow, D. forthcoming. On image systems in human history. In Wengrow, D. (ed.). *Image, Thought and the Making of Social Worlds*. (Freiburger Studien zur Archäologie & Visuellen Kultur 3). Heidelberg: Propylaeum.