FURTHER THOUGHTS:
THE COGNITIVE FUNCTION OF WRITING IN MUL.APIN

There is no reason, in principle, why scientific theories should be off-limits to any human culture, even pre-literate ones. Developmental evidence now suggests that scientific theories develop out of the core conceptual knowledge common to every human being (Carey & Spelke, 1996). Members of traditional, pre-literate cultures have been shown to possess core knowledge even in abstract domains such as geometry,¹ and it is thus conceivable that advanced scientific theory building, including the stipulation of new categories and terms, could have developed without writing. The question is would it have?

The earliest uses of writing were independent of spoken language.² As Cooper (2004:83) points out, writing was initially intended for uses in areas where spoken language couldn’t do the job. Otherwise there would have been no need to invent it. Once created, its uses multiplied and its forms developed. The cuneiform corpus provides a unique window onto these early developments, and MUL.APIN, to some extent, mirrors the progression of written forms in the cuneiform corpus. It begins with the earliest extant written form, the list. Subsequent component sections include complete sentences in connected discourse. Astronomical content and textual form appear to develop together in a reciprocal manner. In order to understand how this might happen, it is necessary to consider the broader functions of writing in cognition.

Olson (2001) has argued that the opacity of written forms inherently conveys a reflexive attitude toward the content that writing conveys. This property of written signs, to simultaneously represent content and attitude, is central to explicit thought (Dienes & Perner, 1999; Evans & Over, 1999). The developmental progression observed through the successive component sections of MUL.APIN is consistent with

¹ Evidence for this can be found in the empirical studies of Dehaene, et al., 2006; cf. also Spelke & Kinzler, 2007.
this sort of effect. The increasing completeness and coherence of the text—or, increasingly explicit textual form—co-occurs with evidence that the compilers of the treatise were increasingly writing in order to be read. Rhetorical-indexical clusters (6.2.1) and the use of the text marker DIŠ (6.3.3) both suggest a developing distinction between content and a reflexive attitude toward that content.

Current models of cognition provide a new lens through which to view this distinction. We first outline the models and then consider how they help to illuminate the findings outlined in the previous two chapters.

7.1 Writing and Dual-Process Models of Cognition

Dual process models of cognition have recently gained wide acceptance in the cognitive sciences.

There is now abundant evidence for the existence of two types of processing in human reasoning... System 1 is a collection of autonomous sub-systems, many of which are old in evolutionary terms and whose operations are fast, automatic, effortless, non-conscious, parallel, shaped by biology and personal experience, and independent of working memory and general intelligence. System 2 is more recent, and its processes are slow, controlled, effortful, conscious, serial, shaped by culture and formal tuition, demanding of working memory, and related to general intelligence... System 1 being highly contextualized, associative, heuristic... System 2 being decontextualized, rule-governed, analytic.

Frankish, 2009:89 (italics, ours)

There remains substantial argument over whether these differences are best characterized as separate systems or different levels of processes, but the distinction itself is generally accepted. The dual process distinction clarifies the relation between spoken language and writing. Spoken language is universal, and thus must originate in, or at the very least be massively underwritten by, System 1 cognition. In contrast, the properties of writing outlined in Chapter 2 identify it as a product of System 2. Writing does an imperfect job of representing spoken language, and necessarily so. The auditory-vocal and ancillary properties of spoken language are more wide-ranging, subtle, and complex

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3 See Evans and Frankish, 2009, for a collection of diverse views.