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Working Memory and its Constraints on Colometry

Every performance of a metered poem, whether we read it aloud, declaim it in recitative or sing it, is a cognitive act constrained by the limitations of our working memory. Working memory is a cognitive system that provides temporary storage of information necessary to perform a wide range of tasks, including natural language use (comprehension, production and discourse recall), reasoning, learning, recognition of declarative memory and skill acquisition. This system has been the object of major research since the revolution of cognitive science in the 1950s, when it was regularly referred to as "short-term memory" or "immediate memory." Unlike the long-term storage capacity of our permanent memory, working memory can only store a limited amount of information and keep that information active for a brief time without constant rehearsal. Both limitations have profound implications for our understanding of the performance conditions governing Greek choral lyric and its colometry.

Unfortunately, the vital new discipline of cognitive poetics has largely escaped the notice of classical scholars, and of our modern metricians in particular, who seem to think that the responding periods of choral poetry march out of a text in blind obedience to phonological rules that bear no relationship to cognition. Virtually all the schemes of metrical scansion that have followed from the work of August Boeckh nearly two centuries ago represent a visual mechanization of rhythm that operates in direct contradiction to what we now know about working memory.

This paper will apply the findings of cognitive psychology to a specific metrical problem: the validity of our current period-counting colometry. I will begin with a brief overview of research on working memory before focusing on its consequences for (a) the performance of choral lyric and (b) the colometry that is supposed to underlie the performance. It should always be remembered, though many metricians conveniently don't, that period-counting colometry is a direct indicator of how the poetry was sung. If the metrical period is not performable because it violates cognitive limitations, it must—however painfully—be abandoned as the fundamental self-contained unit in metrical composition that is analogous to the sentence in discourse.

There is no reason to believe that Greek choral lyric was exempt from the limitations of working memory. But one would think it was exempt on the basis of the current colometry. In tragic choruses, Pindar and Bacchylides, we commonly meet periods two to six times longer than anything we might predict from the roughly 2-second capacity of the phonological loop or the four chunks of reliable short-term memory. Whatever measure we want to take of working memory, the postBoeckhian period vastly exceeds it and is unlikely, therefore, to represent a performance feature.

The paper closes with detailed evidence from choral poetry to show that only the Hellenistic colometry precisely meets the limitations of working memory.