

Plastic (Ger)ontologies: Measuring Aging, Health, Bodies, and Environments on the Epigenetic Clock

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In this paper I argue that 'epigenetic age' measurements shape norms of health and aging by reaffirming that 'healthy aging'—measured by reversal of epigenetic age biomarkers—is based on personal responsibility and lifestyle. To do so, I draw on preliminary findings from participant observation research at a scientific conference in the field of biological gerontology, and at a diagnostic company that makes test kits that measure consumers' biological age based on epigenetic biomarkers. I also attend to how private biotech companies shape the ways that gerontology research interacts with broader society. Research in the field of 'environmental epigenetics' departs from earlier biological understandings of the genome as fixed, and pays attention to how environmental and social factors impact gene expression. In light of this, social scientists have anticipated how environmental epigenetic science can reconceptualize health as ecological and biosocial. I draw on literatures on the political economic geographies of the life sciences, the biopolitics of post-genomic science, and critical social studies of aging to examine the following questions: 1) how does biological gerontology research on epigenetic age shape normative conceptions about the relationship between aging, bodies, and their environments? and 2) how do biological gerontologists, longevity biotechnology companies, and marketers translate scientific research on 'biological age' into the commodity of 'epigenetic clock' test kits?

Keywords: environmental epigenetics; aging; lifecourse; measurement; healthism

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