To unite natural and human history big historians must try to describe carefully how material conditions and human cultural processes relate to each other. To do this, a plausible scientific theory of human culture is needed. Marvin Harris, an anthropologist, tried, over his lifetime, to formulate such a theory.

Marvin Harris (1927-2001) was born in Brooklyn, NY, to impoverished parents of Russian-Jewish ancestry. He wrote his doctoral dissertation at Columbia University on a village study in Brazil and joined the faculty. In 1957, on fieldwork in Mozambique, he changed his focus from ideological to behavioral aspects of human behavior. He taught at the University of Florida from 1981-2000 and wrote two textbooks, each in seven editions, plus 17 other books, for both academic and general audiences.

Harris was determined to articulate a scientific theory of sociocultural development. By 1968 he stated his theory and named it ‘cultural materialism’ in his book, *The Rise of Anthropological Theory*, known to two generations of anthropology graduate students as the RAT. At that time Harris’ theory was not the dominant one among anthropologists; he spent years arguing for it, specifically in the first edition of *Cultural Materialism: The Struggle for a Science of Culture* (1979). Near the end of his life he updated both the RAT and *Cultural Materialism*. By that time his colleague, Maxine L. Margolis, could state in her introduction to the RAT that cultural materialism was the “major theoretical paradigm and research strategy in anthropology,” despite the surge in anti-scientific post-modernism in other fields of the humanities.

In his preface to *Cultural Materialism* Harris wrote that cultural materialism “is based on the simple premise that human life is a response to the practical problems of earthly existence.” His theory of cultural materialism prioritizes material conditions as more likely than ideas to be causal in human societies. Harris lays this out in a scheme of infrastructure, structure, and superstructure (55-59). Under infrastructure he puts *modes of production* (technology of subsistence, techno-environmental relationships, ecosystems, and work patterns) and *modes of reproduction* (demography, mating patterns, fertility, etc.). Under structure he puts *domestic economy* (family structure, domestic division of labor, socialization and education, sex roles, etc.) and *political economy* (political organization, taxation, division of labor, class, hierarchy, control, war, etc.). Under behavioral superstructure he puts art, music, dance, literature, rituals, sports, games, and science.

The above categories are all behavioral categories used by anthropologists in describing and understanding cultural communities. Like many anthropologists, Harris calls these categories *etic*. But there are also categories and concepts applied by native informers to their lives and their world, called *emic* categories. They include ethno-botany and ethno-zoology, magic, religion and taboos. (The anthropological linguist, Kenneth Pike, introduced both terms in his book, *Language in Relation to a Unified Theory of the Structure of Human Behavior*, 1967.)

Harris asserts the principle of infrastructure determinism, namely, that “the etic behavioral modes of production and reproduction probabilistically determine the etic behavioral domestic and political economy, which in turn probabilistically determine the behavioral and mental emic superstructures” (55-56). He acknowledges that the emic superstructure has influence, but he wants to explore fully the influence of the etic infrastructure and structure before considering the influence of the emic superstructure (56). He finds that the interactive exchanges that occur among the superstructure, the structure, and the infrastructure are important in sustaining, accelerating, or deflecting the direction and pace of transformational processes initiated within the infrastructure (160).

Harris describes the infrastructure as “the principal interface between culture and nature,
the boundary across which the ecological, chemical and physical restraints to which human action is subject interact with the principal sociocultural practices aimed at overcoming or modifying those restraints” (57).

In a word, Harris rejects the notion that ideas change the world. He claims that ideas gain traction only to the extent that they fit the material conditions in which people find themselves. Mental and spiritual aspects of culture are significant, but they are not able to explain why different human populations have different sets of values, beliefs, and aesthetic standards. For Harris, the causes of human behavior patterns lie ultimately in the material conditions of the infrastructure.

Harris used this example to make his theory concrete: “...during the late 1960s many young people believed industrial capitalism could be destroyed by a ‘cultural revolution.’ New modes of singing, praying, dressing, and thinking were introduced in the name of a ‘counterculture.’ These innovations predictably had absolutely no effect on the structure and infrastructure of U.S. capitalism, and even their survival and propagation within the superstructure now seems doubtful except insofar as they enhance the profitability of corporations that sell records and clothes” (72).

Do big historians generally prioritize what Harris calls the infrastructure---the environment, technology, demography, food, basic survival---in describing and explaining human culture and history? I think that we generally do, with some important additions. One addition is David Christian’s concept of collective learning as distinctive and crucial to human expansion. Perhaps Harris would have included collective learning in his technology of subsistence if he had known the term. But collective learning also seems part of the superstructure of literature, science and religion. Harris recognized learning as a major factor in making cultural evolution different from biological evolution in his textbook, *Culture, People and Nature* (2nd ed. 1975), but he didn’t discuss this in *Cultural Materialism* (2001) or in the 7th edition of his textbook (1997).

Other additions by big historians include our emphasis on energy flows and optimal (Goldilocks) conditions. Both of these are material infrastructure conditions, but Harris does not mention them.

Harris wrote *Cultural Materialism* for an academic audience. In it he uses technical and theoretic language and devotes many chapters to answering his critics, such as structuralists (a form of idealism, he says), post-modernists, dialectical materialists, socio-biological reductionists, and eclecticists. Parts of this book could be useful in advanced and graduate big history courses for laying out possible positions and for provoking discussion of the issues. Learning about his theory of infrastructure determinism may help big historians understand the underlying assumptions that we may be making.

Yet Harris’s ideas also seem dated. We need an analysis of current positions to move us toward a scientific theory of culture. The synthesis of science and the humanities seems incomplete until we have formulated a working theory. Clearly, the tangible and cognitive systems are intertwined and interactive. But in what ways? Which predominates? Which is causal? Are they chaotic, unpredictable, and inconsistent? Discussing Harris’ theory of cultural development can help us move toward formulating an improved theoretical paradigm.

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