

equality, without projecting Eurocentrism, intentionally or unintentionally, into the past.

A last achievement I cannot forget to mention is Almudena's narrative. It makes the complex easy to understand and not vice versa. Although this should be a must, it is still a merit. The book was a turning point for me. It widened my horizons and my vision of the world, the Other, and my own self. This is why I have recommended it so many times, as I am emphatically doing now to all those reading this review.

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André Leroi-Gourhan. 1964–1965. *Le geste et la parole* (Sciences aujourd'hui. Paris: Albin Michel, Tome 1: *Technique et Langage*, 325pp., Tome 2: *La mémoire et les rythmes*, 287pp., numerous illustrations and maps, pbk, ISBN 978-2226023247, English translation by A.B. Berger: Leroi-Gourhan, A, 1993. *Gesture and Speech*. Cambridge, MA: MIT Press)

It is something of a surprise that the works on gesture and speech by André Leroi-Gourhan (*Le geste et la parole* and its English translation, see Leroi-Gourhan, 1993) have been cited as among the most impactful books and treatises, which is what has warranted the inclusion

of a review in this special section. In many ways, Leroi-Gourhan has been one of the more under-appreciated scholars and researchers in the Anglo-American world, although, in this review, I will attempt to substantiate that his influence has been more widespread than many realize,

especially that the crucial work on gesture and speech is of wider significance than having been fundamental to the evolution of the concept with which he may be most closely associated, the so-called *chaîne opératoire*. I suggest that his being singled out for ‘impact’ by the *European Journal of Archaeology* survey may be influenced by the perceived connection between the *Le geste et la parole* publication(s) and the *chaîne opératoire* (*ch.op.*) but this is not a full accounting of his impacts no matter how much one is or is not influenced by the critique (Delage, 2017, but see also Audouze et al., 2017) of Leroi-Gourhan’s role and legacy in the origin and development of this concept. I will try here to probe into why this recognition of impact might be the case, including but beyond ‘just’ the *ch.op.*

As has been detailed in the many post-humous testimonials and assessments of his life (1911–1986) and career (e.g. Audouze & Schnapp, 1992; Audouze & Schlanger, 2004; Gaucher, 1987; White, 1993), Leroi-Gourhan left a copious *oeuvre* of wide-ranging thoughts and explorations of biology, evolution, communication, human thought and action, and with now-prescient observations on the future, especially on the further elaboration of the exteriorization of memory and knowledge production. A key point here is that, on the one hand, the publication of *Le geste et la parole* in 1964–1965 was a culmination of many years of thinking, writing, publishing, and observations that range from museum collections of human technology and vertebrate anatomy as well as archaeological excavations and ethnographic research (see, for example, as summarized in English by White, 1993; Audouze, 2002, Schlanger, 2017). One can readily trace this trajectory back to the 1930’s. In the early 1940’s he published two related volumes that may have served as a springboard towards what became *Le*

geste et la parole, that is *Evolution et techniques* (Leroi-Gourhan, 1943; 1945). Although Leroi-Gourhan is not noted for citations to others’ work or influences on his own (Audouze, 2002: footnote 9, p. 287), there is little doubt that ideas and publications of Marcel Mauss can be found in Leroi-Gourhan’s work, especially perhaps some that are, themselves, not the more heralded or cited ones. This intellectual inheritance—and what Leroi-Gourhan did with it—is succinctly discussed by Dobres (1999: 126–27), referring, for example, to Mauss’ concept of *enchaînement organique* and thus how ‘technologies link together social, biological, gestural, and material transformative processes’ (Dobres, 1999: 127, citing Schlanger, 1990). As will be discussed below, what is much more interesting than the ‘story’ of whose idea the *ch.op.* was (after Delage, 2017) is the intellectual history, the wider and deeper ‘climate of opinion’, and how Leroi-Gourhan himself came to articulate and set a wide-ranging crucible of penetrating thinking within which not just the concept or method of the *ch.op.* came to be, but within which entire new ‘schools’ of thought, new journals, and superb analytical research came into being and focus.

Given the expansive contents of *Le geste et la parole* one can only admire the depth of thought, experience, and scope of intellectual engagement that the volume comprises. In fact, it is almost a shockingly ambitious goal: a single holistic science of humanity that integrated all the fields of biology and ethnology, a global approach to the diversity of humanity. Despite that much of the human paleontological and even archaeological data he drew upon has today been superseded by very different ‘facts’, the scope of *Le geste et la parole* remains stunningly ambitious as a ‘systematic reflection on the current conditions and future prospects of humankind’

(Schlanger, 2017: 92). Even if many archaeologists have not really read or engaged deeply, if at all, with the scope of the volume (especially before it was translated into English by 1993), it has often been appropriately heralded for not only its impacts but its centrality to the social and human sciences of the twentieth and now twenty-first centuries (e.g., Lemieux et al., 2017). As noted, again by Schlanger (2017: 92): ‘This book ponders the basis for a truly fundamental anthropology encompassing tools and language, machines and memory, species and society’. What could be more *au courant* in this second decade of the twenty-first century?

In fact, today we must confront how prescient his observations were—that we have long been engaged and evolving in increasing and successive exteriorizations, to the point that one could ‘question the role of humanity and the human subject, whose hand will soon be composed solely of an index finger, to hit buttons’ (Schlanger, 2017: 94).

That most archaeologists might consider its key contribution to be what has become the *ch.op.* concept and method is to miss a philosophical and sociohistorical richness, one that is, yes, rooted in biology; not in a deterministic way, but in a reciprocal dynamic. In fact, if one actually reads the text, one finds insightful treatises and considerations of what would be considered key twenty-first century research approaches: agency, materiality, materialisms (‘new’ or otherwise), embodiment, identity (ethnicity), ‘memory work’, *praxis*, as well as post-structuralist, cognitive, and even Indigenous frameworks. There are what we could consider as indirect challenges or insightful discourses pertaining to such ‘core’ concepts in archaeology as ‘style’ (e.g. as noted by White, 1993: xviii; Leroi-Gourhan preferred to discuss ‘aesthetics’, Audouze,

2002). For those who are pursuing the increasingly global manifestations of early ‘art’, not only did Leroi-Gourhan posit the very important recognition that there is a ‘complex but fundamental relationship between language and graphism’ (White, 1993: xviii) but that he himself seems to avoid using the very term ‘art’—a topic with which most Anglo-American scholars often associate with his research (given the widely translated 1965 volume on the images/representations referred to as Paleolithic art). If one took this fundamental relationship seriously, the occurrence of image-making and marking on material forms at very early dates in multiple locations around the globe—way beyond the so-called classic region of southwestern Europe—would not seem quite so surprising nor worth being a cover story!

Furthermore, since too many subsequent researchers have dwelled only on the concept and method of the *ch.op.*, most have missed the very insightful and anthropological features of the volume, where Leroi-Gourhan speculates on the changing relationship between memory and symbol. An entirely different genre of research and discussion has been almost separate from the ‘technology and cultures’ crowd, although *Le geste et la parole* is mobilized by a core interest in a search for the origins of technique, speech, memory, and social grouping. Perhaps because he built on the idea that ‘[l]anguage and thought, writing and memory all evolved in a synchronized way mediated through technique’ (Audouze, 2002: 292), the focus on techniques and the unfolding of technical processes became a primary influence and ‘take away’ from this volume. But as Audouze details for us in a superb essay ‘explaining’ the work of Leroi-Gourhan to an English-reading audience, the scope of his discussions on memory and symbol have attracted the

attention of several key French philosophers, such as Derrida (1967) and Stiegler (1994). This is an aspect of *Le geste et la parole* that has yet to be investigated and even mined by anthropologically-inclined archaeologists.

This is an embarrassingly brief overview of what *Le geste et la parole* can offer us, especially through the English translation and many subsequent observers of its potential and actual impact (e.g., White, 1993, Dobres, 1999; 2000; Audouze, 2002, Schlanger, 2017, among many). I can only refer you to extensive, varied and intellectually stimulating bibliographies (starting with Gaucher, 1987, but also in Audouze, 2002). The global adoption and success of the concept—and especially the method—of the *ch.op.* has, as Audouze noted (2002: 287),

‘proven its efficacy for identifying strategic and tactic choices at every stage of the manufacturing process (as evidenced by hundreds of papers written during the last twenty [now forty] years, and as a means to approach cognitive problems including intentionality’

But one relevant issue to engage with is this on-going problem of ‘originality’ and why our intellectual reward systems and the politics of archaeology promote the idea of finding the original formulations or ‘father’ (sic!) of an idea or concept or method. That this issue has come explicitly to the fore regarding the *ch.op.* not only attests to its widespread popularity as part of archaeological practice but underscores that we all need to be better at our intellectual histories. This means reading original texts and going down those ‘rabbit holes’ of ideas, concepts, reasoning, and communities of scholars, the very sociology/ethnography of the production of knowledge. This is particularly the reason why one needs to draw attention to *Le geste et la parole*, the many decades of

inquiry and scholarship that informed it, and those that have come afterwards, often offering further insights and contexts.

I wanted to stress here that beyond the more common knowledge that a great deal of important and influential research has developed out of the ‘operational behavior’ discussions in *Le geste et la parole*, much more than ‘just’ the concept of the *ch.op.*, with veritable ‘schools’ of research taking on the fundamental premises of the reciprocal relationship between techniques and society (e.g., Cresswell, 1983; Lemonnier, 1983; 1986; Dobres & Hoffman, 1999, among others). A more in-depth engagement with the volume—and its history of ideas—only highlights several still-problematic aspects of archaeology as practiced. Perhaps the adoption of a somewhat stripped-down concept of the *ch.op.* is an example of the oft-noted borrowing practices of archaeology, which often pluck concepts and methods and theories out of their wider contexts. Sometimes we take just the analytical method itself, without the conceptual methodology (see Harding, 1987 on this distinction as cited in Dobres, 1999: 124), much less without the wider conceptual roots (even if they are more like rhizomes than main stems). This itself can all-too-easily become a search for ‘origins’ and ‘originality’ as in the recent publication by Delage (2017) challenging crediting Leroi-Gourhan with the *ch.op.* concept. Many studying the scientific process (e.g. Ogburn & Thomas, 1922; Carroll, 2000) have critiqued the attempts to identify and thus credit—or, in this case of Leroi-Gourhan and the concept of the *ch.op.*, discredit (Delage, 2017, but *c.f.* Audouze et al., 2017)—an author as an original source. Rather, it is usually noted, concepts such as the *ch.op.* emerge out of wider intellectual circles, a situated climate of opinion, or, as well, as in this case, out of an author’s wider,

deeper philosophical understandings and experiences, in combination with other practitioners such that one must recognize the ‘combinatorial’ nature of ‘originality’ (Carroll, 1990: 144, citing Lovejoy, 1936!).

Thus, one can take away from this particular history and example more than just the primacy of a widely adopted analytical method, but a provocative history of ideas, their translation (or not) into other languages and communities of practice/scholarship, and thus a sociology of knowledge, and the ways in which an elaborated approach can—or does not—stand the test of time (White, 1993: xxi; Audouze, 2002: 302). From an initial reception as an ‘intimidating monument’ (Audouze, 2002: 301) to a source of multiple different pathways of scholarly inquiry, it is not just the immediate anthropological and archaeological ideas and concepts in *Le geste et la parole* that capture us in its ambitious web of understanding humans, from the deep past into our contemporary and even future conditions, but it is a veritable central node in the history of ideas.

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