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The majority of our readings today deal with either Leroi-Gourhan or parts of his work. Part of the French structuralist movement, Audouze depicts Leroi-Gourhan (his mentor) as some type of ‘academic maverick’ who passed away without being properly acknowledged by the Anglophone world. However, the recent translation of *‘Le geste et la parole’* (1993), almost 40 years later than its original publication, has recently amplified his distribution in the Anglo-American world. According to Audouze, the brilliance of Leroi-Gourhan’s writing was such that it did not encourage criticism, but ironically, his publications were sometimes hard to read. To me, he was a visionary with a sea of ideas that he conceptualized but never quite applied. Similarly a distinct part of our readings this week deal with the chaîne opératoire and its uses to archaeological studies.

Yet, one of the things that surfaces rapidly from Audouze’s article, is that Leroi-Gourhan’s many interests resulted in concepts inter-linked with numerous fields (ex. Biology) and it is doubtful that he foresaw the rigid application of his concepts to archaeological scenarios. Interestingly, Leroi-Gourhan abandoned school at 14, returning directly to university and obtaining a degree in Russian. This was then followed by a degree Chinese, an Ethnology doctorate and finally a doctorate in Paleontology. Enviously Leroi-Gourhan was a student of Marcel Mauss and Paul Rivet, studying alongside a generation of other French scholars that includes Levi-Strauss, Haudricourt, Riviere and Soustelle. Within this group of rising scholars it is certainly not hard to understand how Leroi-Gourhan formulated his unique ideas. Leroi-Gourhan was an

archaeological innovator. In fact, much of the problems that he encountered had to be resolved on a philosophical level which means that he preferred a diachronic overview to archaeology. Indeed, his work sought to use complementary concepts through theoretical mediators that included strains from biology, psychology, sociology, and ethnology. In much of his work Leroi-Gourhan envisioned that the biological properties in common between organisms required a continuity in living, which humans were obviously part of. However, he saw material culture and techniques as a unique characteristic of humankind, which required him to formulate an analytical method for cross-comparison of facts. Typical of the French style of technological studies, Leroi-Gourhan focused on the technical modes of action. These same actions are also creations, which Leroi-Gourhan distinguished between *milieu exterieur* (includes the natural environment), *milieu interieur* (intellectual capital of a given group) and *milieu technique* (accumulation of knowledge).

Within this structured approach to material culture and human technology, Leroi-Gourhan has been popularized for his later addition of the chaîne opératoire concept. Reading through '*Le Geste et la Parole*', it appears to me that Leroi-Gourhan was envisaging this concept as heuristic and useful concept meant to better frame his analysis of technical processes. Some archaeologists have however appropriated this concept, then turned it into a model, and stuck to seeing the chaîne opératoire as an analytical grid. A case in point is Riede's '*Chaîne opératoire, Chaîne évolutionnaire? Putting technological sequences into an evolutionary perspective*'. The latter author initially points out that the chaîne opératoire has, in the Anglophone world, taken a wrong turn. However, this same author descends quite rapidly into the overly-analytical pseudo-

cognitive trap that archaeologists have laid for themselves. Similar to others (such as Schlanger) Reide focuses his energy on trying to apply a concept to an evolutionary based model that tried to distinguish between mastery and sub-par knapping. The reductionist and restrictive nature view of the chaîne opératoire must have Leroi-Gourhan turn in his grave a few times over. The appropriation of the chaîne opératoire by so-called cognitive archaeologists in the 1990s highlights my impression that archaeologists dealing with technology cannot handle the interconnected nature of Leroi-Gourhan's work.

Therefore, one might ask at this juncture: is there an alternative? Frankly, there is no easy way to answer this and Ingold's contribution shows us how problematic complex concepts can become to the reader. In the *'Textility of making'*, Ingold argues against the implicit assumption that technology entails the imposition of form upon the material world. On the other hand, Ingold explains that the process of making, entails adaptation to the material in use. While riddled with complex rhetoric, Ingold's point is actually useful to archaeology. In the light our issue of the chaîne opératoire, archaeologists incorrectly, and almost explicitly, assume that technology occurs in processes that are diachronically uniform. Variability, as in most archaeological studies, plays a marginal role and is often utilized as a way of disproving each other's 'ivory towers'. In contrast, Ingold makes a valid attempt at explaining how the textility of making is almost fluid and surely variable. Within this scheme our attempts at comprehending technology should try to ask and answer 'what does it mean to make things?'. To me this is by far one of the more significant questions that I feel archaeologists have not and still do not ask themselves. By asking ourselves the above question, archaeologists also have to investigate and deal not only with

agency but also the actor as a conductor of the agency. Much of the recent literature dealing with agency in archaeology has focused on engendering or 'fleshing out' the archaeological record, yet, gestural action by actors are not well-established. In fact, some research, including Dobres', in some instance sound like they assume that an actor conceives the initial and completes the final stage of the chaîne opératoire. In contrast, Ingold interprets the agents as initiator of actions which are caused by themselves and by their intentions. Therefore to me, only through the pooling of a community/group can the chaîne opératoire be created and successfully completed. A final question to ask ourselves is the level of consciousness involved in such technological processes. I feel, as believed by Leroi-Gourhan and indicated by Ingold, humans are masters at fluctuating between polarities of conscious and unconscious technology.

The chapter by Senett '*The Hand*' is an interesting contribution that discusses the use of the human hand. What struck me the most from this contribution is Senett's consideration of the human hand as a key 'actor' in technology. It is possibly safe to say that on a day to day basis we do not think about our hands and all the things they aid us in. However, as correctly pointed out by the author, human hands represents an evolutionary leap that has in turn led to achievements. It is clear however that through the series of expressions, present in all languages referring to hand movements and actions, we have been transformed culturally by the utility of our hands. Despite that the majority of this chapter has little archaeologically verifiable elements, Senett rightfully claims that we should think of technology as a cooperative process which is meaningfully constructed and often carried out with minimum force.

It is impossible to remove the validity of Leroi-Gourhan's impact on archaeological studies of technology. However, as I hope to have highlighted above, his work was not meant to model human behavior. Rather, Leroi-Gourhan was aware (as was Marcel Mauss) that uniformism does not entirely exist. His research rather attempted to account for individual or collective actors whose actions are left in the archaeological record. Clearly, a reality check reminds us that Ingold's and Senett's contributions are not often preserved in the archaeological record. Yet, in their work they highlight that technology is a meaningful series of inter-connected spheres which are often motivated by fluidity in action. My impression remains that by ruthlessly appropriating a concept and narrowing the study of technology into a series of recognizable steps, archaeologists are avoiding meeting technology head on and rather hide behind supposed stages of production. This perceived legacy left to us by Leroi-Gourhan is increasingly being adapted to limited aspects of technology, which to me is simply a construction on clay that easily washes away within the larger scheme of things.