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Archaeologists dealing with technology and production inevitably raise questions pertaining to the inherent abilities of past communities, as represented through material culture. At the root of questions focusing on skill, it often becomes necessary for archaeologists to tentatively approach meaning, implications and distinctiveness of skill in human culture. To me, tackling skill is a problematic issue, since gauging skill in the archaeological record seems overly subjective. In contrast, the majority of our readings today are optimistic about the validity of skill in archaeology, as discussed below.

In *Skill Matters*, Bleed states that skill lies at the base of technological complexity and achievement. It seems that right off the bat Bleed willfully ignores a significant component of human evolution as possibly sub-par in terms of skill, which in turn would encourage many (including myself) to simply stop reading this article. However, in the pursuit of identifying skill, Bleed's contribution includes an evidently biased definition of skill as a process that inherently deals with proficiency, mind competence, ability, and craft. While all of these sub-process elements are debatable, and loosely termed through modern analogical reflections on technology, I agree with Bleed that technical skills form part of how humans deal with the physical world. The acquisition of these technical skills can be understood as relying on behavioral development, rather than through learning, and connected through cognitive capacities and motor activities.

Inevitably, the question of how to measure skill is a significant burden that I feel impinges strongly on the validity of such studies, particularly when we consider prehistoric scenarios. According to Bleed, the use of skill by human groups allows the archaeologist to recognize

and assess material signatures. Such signatures, are apparently observable in the archaeological record as polarizing differences that could be divided between skillful and sub-par skillful production. The latter, in particular, can be identified in the case of 'breaks' from behavioral routines that do not follow the norm of style. Furthermore, the finding of so-called smart tools can help the archaeologist identify occupational areas that were primarily utilized by production agents in-training. To me, Bleed diminishes his argument by admitting that it is indeed difficult for an archaeologist to reliably gauge standards or even measure efficiency. Bleed, however, rightfully states that the development of skill would have required access to raw materials that could have supported the 'wasteful' tendencies of agents in-training. But ultimately, I still find it hard to accept that production failure rates can be considered as evidence (or lack of) skill. Incidentally, a major variable that counteracts to Bleed's impression of uniformity lies in the fact that humans are capable of rectifying their own mistakes during production.

The core focus of this week's readings lies heavily in identifying such lack of skill, or novices. In *The when, where and how of novices in craft production*, Ferguson assesses the need for archaeologists to become increasingly aware of the role of children in archaeological assemblages. Similar to other recent calls, such as the need to engender archaeological assemblages, Ferguson's argument is a legitimate one. The term scaffolding involves the integration of novices into craft production and activity through the provision of assistance (in form of knowledgeable support). Still, the role and extent of novice involvement, depends on the accessibility and value of the principal raw materials. For example, gunflint novices did not get to practice on *primo* stuff, but were rather confined to discarded waste. Therefore, when dealing with skill and identifying novices, archaeologists need to appropriately assess the vicinity and quality of raw material present in any given area. To support his argument

Ferguson highlights that refitting nodules from the Paleolithic site at Dordogne indicated that the inferior raw materials, in an area with profuse raw materials, were being knapped by a less experienced agent. In contrast, ceramic production is less amenable to the identification of novice children, particularly since this technology is additive and not reductive. Importantly, I feel that the elongated trajectory over which ceramic technology operates is indicative of the complex, and often situational, variables that could have made use of many agents within a given human group. According to Ferguson, children novices could have operated within three distinct scenarios: formal apprenticeships, informal use of scaffolding, and individual experimentation. In light of such distinction, I ultimately feel that the author did not manage to disassociate convincingly novice from child, and even less, he did not manage to supply the reader with a sense of how novices could have operated within less established, organized societies.

In light of the less than convincing investigation of children novices, Apel's contribution entitled *Knowledge, know-how and raw material: the production of Late Neolithic flint daggers* re-focuses the question of skill. In his study Apel is attempting to examine the point of intersection between craftsmanship and skill, which could have easily been exploited for economic and social gain. According to the author, these artifacts can be traced across an operational sequence that relies more so on investigating social strategies rather than attempting to reproduce stages. Despite the uniformity and technical complexity that involved the manufacture of these Scandinavian daggers, variability is seen by Apel as holding significant importance. The repetitive production of such artifacts leaves in the material record a group of gestures that are combined with psychological factors. The latter, recreated through memory, is sub-dividable as *connais-sance* (knowledge) and *savoir-faire* (know-how). However, for all the schematization in the world, Apel acknowledges the inevitable reality that

surrounds all of human technology and production: ie the need to improvise according to particularistic situations. Clearly aware of this pitfall Apel, however, restricts his research by asking when did full or part-time specialists emerge? A clear nod to Childe's linear vision of increasing complexity, Apel falls short of the fascinating questions that the Scandinavian daggers raise.

Sennett's use and description of *Ability* provides a similar, yet, alternative view of how humans take upon themselves the need to master a technological activity. According to this author, almost anyone can become a good craftsman, which is good news to people as myself who consider their craft abilities to be limited and essentially restrained by lack of coordination. The process of ability harnesses the movement of gestures, that all humans learn through play, and connects them to knowledge. As indicated by Geertz, adults still participate in competitive games, better referred to as 'deep play', which is better described as a somewhat structured series of activities that yield a tangible result. This view of the acquired ability is a primarily cognitive based process that in my opinion is probable and yet a let down in an archaeological sense. The general field of archaeology is primarily focused at discovering origins (origin of tools, origin of farming, etc) and such a natural inter-linkage of cognitive faculties must leave fund seekers feel disengaged with our field at large. Yet, much of what technological production implies is quite possibly a sub-ordinate part of living and testament to our complexity. Sennett claims that the brain is able to process in parallel rather than in series, which indicates that the brain is not a closed system but rather open to outside influx and variable stimulation.

Despite the lack of use of the term 'skill', Sennett's reflections on ability underline the way in which archaeologists need to stop thinking in terms of schemes, paradigms and pragmatism.

As disappointing as it may sound to many archaeologists, much of human behavior relies on the power and complexity of our cognition. This, however, does not diminish in my view our necessity to better our interpretational investigations. The thoughts presented in this short paper highlight several novel aspects of technological organization that clearly have applicability to post-emergent complex societies. In such future studies, skill or ability should feature as an integrative aspect that could explore variabilities within singular sites. Clearly, this is not an open and shut case.