



## Debate Response

# On the poverty of academic imagination: a response to Bentley & O'Brien

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Many years ago, I taught a course at the University of Aberdeen on the '4As' of anthropology, archaeology, art and architecture (Ingold 2013). As we had been discussing flint-knapping, I invited the master-knapper, John Lord, to give a demonstration. We watched in awe as he skilfully detached flakes from a flint nodule of irregular shape to reveal the classical, bifacial form of an Acheulean handaxe. Then it was our turn to use wooden or antler hammers to detach flakes from fragments of flint. After an hour or two, none of us had made any headway. What looked simple in practised hands would have required years to learn, not a single afternoon! Nevertheless, the workshop taught us an important lesson. As Bentley and O'Brien (2024) remind us, mastering the skills to make an Acheulean biface requires hundreds of hours of practice. The question is, why does it need so long? What is going on during these many hours?

In the practice of any craft, the human body and brain undergo a continuous process of ontogenetic development. Integral to the practitioner's life in the world, this process has no start or end points; it just continues, as life does. But whereas experimental archaeologists have had to figure out from scratch how to copy the artefact before them, prehistoric learners would have worked within the nurturing milieu of a community of practice, in which beginners could depend on the mentorship of more experienced hands. By attending closely to what the latter are doing, and bringing their own movements into line with their observations, novices gradually improve, becoming mentors in their turn. This is how a tradition is carried on, as young and old work together in the regenerative tasks of life. Such tasks are not subject to the free will of the individual but fall upon practitioners as part of their responsibilities towards the communities to which they belong.

It is in the performance of such responsibilities that kinship is forged, as generations participate in each other's ongoing formation in relations of nurturance and care. But the modern scientific imagination, distrusting of experience and anxious to pin things down to ultimate causes, beyond the proximal conditions of development, decrees that the performative aspects of kinship are mere effects. Real kinship, it insists, lies in the distribution of character traits or dispositions between individuals, thanks to their alleged genetic connection, independently and in advance of their undertaking the tasks of life, and of the relationships they form in the process. The individual human, in this inverted view, exists only to express dispositions already bestowed at conception, exhausting its potential in doing so and contributing nothing to future kin save the legacy of informational resources to be bestowed, in turn, on them, to be expressed in their own lives. From this follows the distinction, built into modern evolutionary theory, between ontogenesis and phylogenesis, between the within-

generation life-cycle of the individual, and the between-generations transmission of information. Thanks to this transmission, according to theory, attributes are inherited. There can be no evolution, then, without inheritance.

What if we apply this logical framework to the evolution of culture? Evolutionary theorists are quick to observe that the abilities of humans—as in the design and making of artefacts—are genetically underspecified. It is therefore necessary to posit an auxiliary channel, besides the genetic, for the inter-generational transmission of information. This is the channel of cultural inheritance. Evolutionary logic decrees that the information needed to fashion an artefact has first to be transmitted from masters of one generation to the novices of the next, leaving it to the latter to apply this already copied information in the individual crafting of their own practice. The initial transmission calls for a mechanism of replication, analogous to genetic replication, while the subsequent application calls for a process of experiential learning, by trial and error, within environmentally situated contexts of development. Theorists of cultural evolution reserve the term ‘imitation’ for the former, and ‘emulation’ for the latter. As with the parallel distinction between the inheritance of genetic attributes in phylogenesis and their expression in ontogenesis, imitation crosses generations but is not a life process, emulation is a life process but does not cross generations.

This distinction, however, is enforced by the logical requirements of the theory; it is not borne out in reality. As studies of apprenticeship learning have shown (e.g. Lave 2011), the knowledge of how to make things does not precede its application but is *re-produced* through the collaboration of generations in communities of practice. Imitation and emulation, here, are one and the same. If erstwhile novices, having progressed to become masters of their craft, end up knowing as much or as well as their mentors, this is thanks to the convergence of developmental outcomes. To suppose, as evolutionary theorists do, that this knowledge was there from the start, having been transmitted by inheritance, is to short-circuit the process of enskilment through which it is reproduced. This inversion is not unique to the theory of cultural evolution. It is also present in modern evolutionary biology. In a devastating critique of the latter, Susan Oyama (1985) has exposed the circularity of positing information in advance of the processes that give rise to it. A theory of cultural evolution built around the concept of inheritance is undone by precisely the same fallacy.

At stake is an ontological bifurcation, deeply embedded in modern thought, between matter and information. The assumption is that in all creation, form is imported into otherwise formless material. The problem for archaeology is then to account for stability in the forms of preserved artefacts over extended periods. Theorists of cultural evolution, such as Bentley and O’Brien, attribute this stability to inheritance—of knowledge, beliefs and techniques. But it is difficult, as they admit, for the modern mind to grasp the glacial pace of artefactual change in early prehistory. The formal conservatism of the Acheulean biface, across three continents and hundreds of thousands of years, remains an enigma. The lives of the hominins who made these artefacts must have been so different, not just from our own but from anything in the annals of history or ethnography, that we have nothing to compare them with. If they had the capacity to envisage forms in advance of their implementation in the material, why did they not innovate with the same facility as their descendants? If they lacked such a capacity, how can we account for the design and symmetry of the biface form?

Were the biface makers, then, zoo-cultural hybrids, stuck for millennia in the transition from biological to cultural evolution? Arguably, the form of the biface was preserved across generations through cultural inheritance, but nevertheless anchored to a greater degree than in modern humans by genetic hardwiring. This is what Bentley and O'Brien would have us believe. But perhaps, in trying to pin stability down to the inheritance of fixed dispositions, we are looking in the wrong place. What if form were not inherited but ever emergent, in and through the performance of kinship within communities of practitioners bound through their care for one another, and for the materials with which they work, in the ongoing tasks of life? What if intergenerational stability were guaranteed by the developmental dynamics of this entire system of relations and responsibilities, rather than by the fidelity of transmission of a formal design specification? This is not, as Bentley and O'Brien might object, to take the side of agency and intentionality over that of inherited cultural tradition. It is rather to think outside the dichotomy between free will and determinism which frames their argument, by recognising the potential of the life process itself to generate and sustain emergent form.

Bentley and O'Brien rightly conclude with a warning against projecting the modern academic imagination onto the past. Yet ironically, this very imagination supplies the scaffolding of taken-for-granted axioms and concepts upon which their argument for inheritance-based cultural evolution is built. This includes not only the opposition between the creative agency of the individual and the conditioning force of sociocultural norms, but also the dichotomy between genes and culture as carriers of dematerialised information, the reduction of kinship to a calculus of genetic connection and, above all, the division between ontogeny and phylogeny, life and inheritance. All of this constricts the authors' thinking. Perhaps the real problem with the academic imagination is simply that it is not very imaginative. It tends rather to be defensive—hiding, as in this article, behind a barricade of bibliographic citations, 'data' of dubious relevance and vacuous tautology. Of the latter, the authors' claim that "consistency through time is the result of cultural inheritance" offers an exemplary instance (2024: 1407). What, for them, is cultural inheritance, if not consistency through time? Only by abandoning such defensive postures for more expansive intellectual terrains can we begin to imagine evolution otherwise.

## References

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