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Debate Response

Human intent and cultural lineages: a response to Bentley & O'Brien

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I thank Bentley and O'Brien (2024) for their cogent review of issues associated with inheritance and intention in cultural evolution. Intent is, of course, present in cultural process and that begs the question as to when and how we concern ourselves with it as a factor in cultural evolution (Rosenberg 2022). Intent underlies our understanding of both micro- and macroscale processes of cultural evolution. Lamarckian microevolutionary process depends on decision-makers choosing whether or not to accept and sometimes alter cultural traits (Boyd & Richerson 1985). Zeder (2009, 2018) points out that even long-term change may be affected by conscious infrastructural investments that alter capacity for socioeconomic production and, subsequently, canalise later developments.

Eldredge (1985) reminds us that evolutionary processes play out in what he terms ecological and genealogical hierarchies (see also Rosenberg 2022). Individuals make and act upon decisions with regard to their energy expenditure and return in the ecological hierarchy. That, in turn, affects what is preserved in the genealogical hierarchy. Evolutionary ecological frameworks centred on decision-making and associated actions can be very useful for explaining behavioural transitions, especially as related to subsistence, sociality and reproduction (e.g. Prentiss *et al.* 2023a; Boone & Alsgaard 2024).

Research into cultural evolution also focuses on the differential persistence of traits metaphorically lodged in Eldredge's genealogical hierarchy. Here, the research target is on the evolution of the cultural trait. An essential assumption effectively argued by Bentley and O'Brien (2024: 1406) is that traits are transmitted across the long term, forming inherited lineages. We assume that cultural microevolution is the foundation for development of macroevolutionary lineages via cultural transmission processes. The study of cultural macroevolutionary lineages may also offer insights into evolutionary dynamics not visible on microevolutionary scales as, for example, processes of multiscalar punctuated change (Kolodny *et al.* 2015; Vidiella *et al.* 2022). Our challenge comes with developing evolutionary explanations for those evident patterns and some scholars still effectively invoke aspects of intent (Spencer 2009).

Laue and Wright (2019) draw upon advanced fitness landscape theory to argue that evolutionary dynamics over the very long term may operate differently from scenarios viewed on ethnographic scales requiring specific reference to intent. While Wright's (1931) classic model remains useful to archaeologists seeking adaptive explanations for cultural transitions (Bettinger 2009; Garvey 2021), recent models implicate more complex processes of neutral and nearly neutral evolution (Laue & Wright 2019). Gavrilets (1997) proposes a multidimensional system whereby a rugged microevolutionary landscape (as per Wright 1931) may periodically elevate a trait into a macroevolutionary landscape where variants move on

nearly neutral causeways, which periodically intersect with others, providing opportunities for emergent phenomena and rapid bursts of change. This has been a useful model for understanding major cultural transitions as, for example, with the emergence of the Thule tradition in the Bering Strait of Western Alaska and Eastern Chukotka, Siberia by *c.* 1500–1600 cal. BP (Prentiss *et al.* 2023b). Here we see a convergence of multiple technological lineages and a major transition in labour organisation (walrus and whaling crews), communication (Old Bering Sea artistic motifs) and the unit of selection (multi-village polities).

In an inclusive cultural evolutionary theory, we clearly benefit from having the option to consider conscious behaviour and alternative perspectives on the formation of long-lived lineages. Whether our research emphasises intent-driven decision-making or the effects of general evolutionary forces on cultural traits over lengthy time spans, we can scaffold a diverse array of inferences and tests while avoiding the excesses of a "floridly imagined" past (Chapman & Wylie 2016: 3).

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