

# SCHOOL OF SOCIAL SCIENCE

## Working Paper in Archaeology

**3:00pm-4:00pm**  
**18<sup>th</sup> March 2016**  
**Room 443, Michie**  
**Building (#9)**



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Australian archaeofaunal assemblages are often heavily fragmented by taphonomic agents whose identity or origins are frequently difficult to discern. This study explores whether the fragmentation and accumulation of bone by carnivorous marsupial quolls may be distinguished from that produced by humans. Analyses of 140 scats obtained from captive feeding trials and wild populations of three quoll species (*Dasyurus maculatus*, *Dasyurus viverrinus* and *Dasyurus hallucatus*) indicates that damage to bones by quolls may be identified through a combination of the median length of bone specimens and observations of specific types of damage to the bone surface. Our results demonstrate that bone consumed by *D. viverrinus* and *D. hallucatus* is highly unlikely to be confused with human-accumulated assemblages due to low dietary overlap and the very small bone fragment size produced by both quoll species. Bone accumulations of the larger *D. maculatus* species, however, may be incorrectly attributed to humans due to the consumption of medium-large mammals by both humans and quolls, and the larger size of bone fragments produced by *D. maculatus*. Although fragments as large as 25 mm were recovered from wild *D. maculatus* scats, the median length of scat-bone fragments for *D. maculatus* falls between ~ 8.30–10.40 mm. This is significantly different statistically to the median fragment length (11.90 mm) of bone in scats of the Tasmanian devil, *Sarcophilus harrisii*, as reported by Caroline Northwood (1990). Scats from wild *D. maculatus* indicate that polish and pitting are the most common forms of surface damage to bone, with more than 25% of specimens displaying these marks. Punctures and tooth drag marks are far rarer, with only 5% of bone specimens exhibiting this kind of damage. In light of these results, we advocate for detailed observation of the surface of bone specimens, along with obtaining specimen lengths, in order to distinguish quoll accumulated bone in archaeofaunal assemblages.

### **About the Presenter**

Tony Miscamble started working life making furniture as an apprentice Joiner before moving on to stints as an engraver, antique dealer and computer programmer. By some accident ended up in university administration and started studying archaeology. Current day job is managing a cohort of 140 unruly PhD students at the Australian Institute for Bioengineering and Nanotechnology (AIBN) here at UQ. Tony would prefer to do archaeology full-time and is particularly interested in zooarchaeology and the application of unmanned vehicles and remote sensing to archaeological sites. Plays squash and indoor cricket and, with wife Sophie and son Jack, looks after a small herd of Black Angus cattle on our property in the Sunshine Coast hinterland.