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Modelling Chronology - Alex Bayliss (English Heritage) & Shahina Farid (Çatalhöyük Research Project)

Due to an administrative error the section on scientific dating was omitted from the 2009 Annual Report. We therefore outline here progress on the dating programme during 2009 and 2010.

At the start of 2009, on the basis of %N values on whole bone, we estimated that 134 of the 207 bone samples exported in 2008 (63%) would probably be sufficiently well-preserved for successful radiocarbon dating. Preservation is better lower down in the mound and significantly worse (with less than 20% of samples probably datable) in the deposits closer to the surface. In May 2009, 43 samples of articulated or articulating bone were submitted for dating to the Oxford Radiocarbon Accelerator Unit in order to provide a skeleton chronology for the upper part of the South Area.

Meanwhile work continued apace on assessing the stratigraphic sequences and identifying units for faunal scanning in the TP and South Areas. By the end of May Alex & Shahina had completed this task for the South Area, and in June Alex went to Gdansk to complete a similar task on the finalised TP matrix with Arek Marciniak & Marek Barański. On site more than 450 units were scanned for faunal articulations by Lisa Yeomans and Marta Bartkowiak (ably assisted by Agata Czeszewska and Patrycja Filipowicz).



Figure 129. Lisa Yeomans drilling an animal bone sample from the South Area

At the end of the 2009 excavation season Alex went to site to take samples, not only from those articulations identified from previous seasons of excavation but also from units excavated in 2009 (Figure 129). This strategy aims to minimise the stratigraphic gap between

the top of the South Area and the base of the deep sounding. Overall 21 additional samples were taken from the TP Area and 167 from the South Area (including five samples of carbonised material from within skulls in B.76). This may be equivalent to the 'carbonised brain' recovered and dated in the 1960s from building E.VI.1 (6600 – 6240 cal BC; 7579±89 BP; P-827). The highlight of this season was the opportunity to sample surviving skeletal remains from the 1960s excavations. Scott Haddow undertook a preliminary assessment of this material and identified the minimum number of individuals in each building (Figure 130). In total, 144 people recovered from 36 buildings were sampled.

In the autumn 32 new radiocarbon results were reported by the Oxford Radiocarbon Accelerator Unit. These, along with the existing suite of dates from the deep sounding (Cessford 2005) and the detailed stratigraphic analysis, enabled a wider sampling strategy for the South Area to be designed. This was based on simulation models (Bayliss 2009) incorporating the relative dating summarised in the site Harris matrix with radiocarbon ages simulated from articulated bone samples that had already been identified as suitable for dating. Unfortunately this model is still limited by the gap in the stratigraphic sequence in the South Area (which can be only partially, and tentatively bridged by the Mellaart excavations). In total a further 108 samples from the South Area have now been submitted for dating to the AMS laboratories at Oxford University and the University of California (Irvine).

In April 2010, Alex and Arek Marciniak met in London to finalise the selection of a new suite of samples for the TP Area. Poor collagen preservation, however, meant that there were insufficient suitable samples for an effective dating programme. During the 2010 season, therefore, David Orton scanned over 130 units from the TP Area for articulating faunal groups, in addition to nearly 150 from the South Area (Figure 131). This process was made possible by Arek Klimowicz who located almost every faunal crate from both Areas and moved them between the store and the faunal laboratory – sometimes more than once (Figure 132)! Even though many of these units had been scanned before, 107 new samples were identified and exported. We also thank Andrej Leszczewicz for taking photographs of the sampled articulating groups.

Because of the poor collagen preservation in the TP Area (and at the top of the mound generally), we also identified and exported a dozen or so samples of charred plant remains for radiocarbon dating in 2010. These are the first such samples we have selected, because of the ever-present risk for charred plant remains to be residual; if the relative dating from stratigraphy is to be employed in a Bayesian model to constrain calibrated radiocarbon dates, then it is essential that all the dated samples date from the time when the unit was deposited. For this reason two single-fragments of short-life material will be dated from each selected deposit (Ashmore 1999), on the basis that if the results are not statistically consistent, then



Figure 130. Scott Haddow identifying the minimum number of individuals in E.VII.31 (excavated 1965).



Figure 131. David Orton identifying articulating bone groups from the TP Area.

the older sample, if not both samples, may well be residual. All the material is from deposits (such as oven rake-outs or hearths), where a functional relationship between the deposit and the charred plants may be inferred. We thank Marek Polcyn for providing this material, and Amy Bogaard for isolating and identifying sub-samples suitable for radiocarbon dating. We also thank Lech Czerniak for excavating a new sample from an oven in B.81, which will allow us to anchor firmly the base of the TP sequence.

Over the next few months the new series of samples from the TP Area will be finally chosen and submitted for dating to laboratories at the University of Poznan and the University of California (Irvine). Whilst the samples are being dated, we will concentrate on writing an interim publication on the dating programme for the current suite of site monographs, and on determining the place of the sampled buildings excavated by Mellaart in the

1960s in the overall sequence in the South Area. This should allow us to embark on a new round of simulation and sample selection once we have the next set of results, and enable us to provide an outline dating sequence for the whole of the South Area in advance of the stratigraphic union between the upper buildings in the South Area and the 1999 deep sounding.

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Fire Installations - Sheena A. Ketchum (Indiana University)

During the 2010 season, I worked on a dissertation feasibility study of the fire installations at Çatalhöyük, funded by a Departmental Skomp Summer Research Award, from the Anthropology Department Indiana University Bloomington. At this point, my analysis of fire installations is focused on ovens and hearths, a further study of fire spots and fire pits will be included in my later work. The ovens and hearths at Çatalhöyük can provide significant insight into the food consumption and the social lives of the people who built and used them. For my dissertation research, I am interested in performing a detailed analysis of the ovens and hearths at Çatalhöyük in order to look at ideas of materiality, agency, meaning, gender, social aspects of the household/neighbourhood, social organization, food preparation, food production, food consumption, sustainability, and everyday activities centred around the fire installations incorporated into daily life. The variation within Çatalhöyük across the site and through time is very dramatic, however the variation within ovens and hearths appears to be much more limited, why?

I posed a number of questions to address while in the field, in an effort to embody the people and their choices. Where are the fire installations located within the buildings? What does this tell us about the people who built, used, destroyed, and rebuilt the fire installations? What are the patterns of the fire installations across the site in terms of design, size, structure, location, abandonment, food cooked within, and artefacts found in association with the fire installations? How does this embody the people, their choices, their belongings, and their choices to discard items? A number of history houses have been identified on site; these



Figure 132. Arcadiusz Klimowicz shifting yet another pile of faunal crates!