

**MA Thesis – Human Skeletal Biology Track, Physical Anthropology - New York University
(2009)**

**THREE-DIMENSIONAL ANALYSIS OF THE SCAPULAR GLENOID FOSSA:
NEANDERTALS AND MORPHOLOGICAL ADAPTATIONS TO HABITUAL BEHAVIOR**

Marisa E. Macias

Abstract

Scapular glenoid fossae were compared in Neandertal and six anatomically modern human populations with three different subsistence strategies: urban dwelling, foraging, and agriculturalists. Three-dimensional analysis reveals that Neandertals had superiorly-inferiorly elongated, shallow glenoid fossae relative to those of modern humans. Comparison of glenoid depth relative to the glenoid fossae rim demonstrates that Neandertals were morphologically most similar to populations with an agricultural subsistence strategy, rather than urban dwelling or foraging populations. This similarity implies comparable habitual activity, particularly morphological adaptations to gross physical strength as opposed to habitual overhand throwing, like the foragers, or dominant hand manipulative behavior, like the urban dwelling individuals. This may be related to Neandertal subsistence strategy, particularly with respect to long-range projectile tool use.