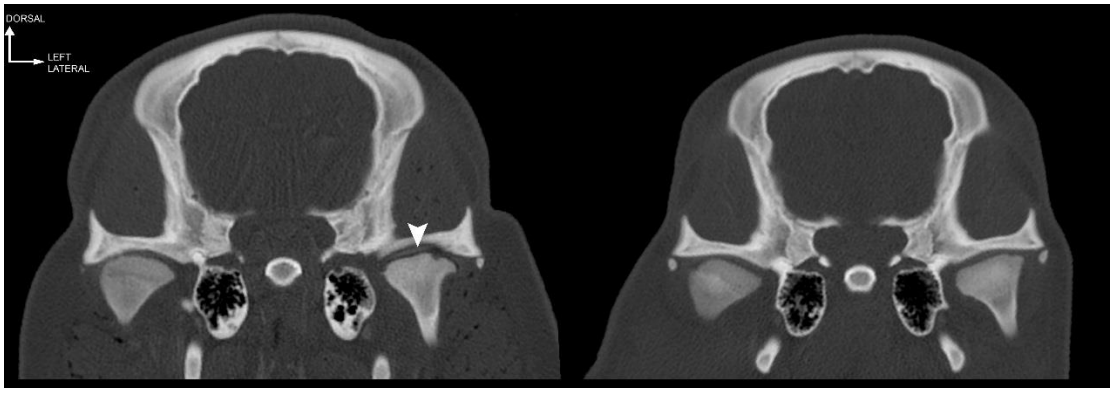


Fig. S1. A comparison of TMJ morphology in individuals Sus A (left) and Sus D (right). Coronal CT slices are taken through the middle of the left mandibular condyle. Sus A (left) exhibits a typical TMJ with a visible disc (white arrow). Sus D (right) exhibited an atypical TMJ with no visible disc. A small amount of tissue resembling the disc was present along the posterior aspect of the mandibular condyles (not shown) in CT scans of Sus D, suggesting this individual may have been affected by a bilateral joint disorder such as disc displacement. Because the skull had been skeletonized before the unusual morphology and kinematics were noticed, it was not possible to assess this possibility.

In addition to these morphological differences, Sus D exhibited distinct kinematic differences during mastication. Sus D exhibited reduced measures of jaw retraction and closing (Fig. 7). Sus D also was the only individual to show dorsal translation of the mandible during the closing and occlusal phases, and demonstrated asymmetrical retraction of the mandibular condyles earlier in a chew than the other individuals (Table 6). While the origin of these kinematic differences is unknown, we postulate that they may be related to the described anatomical variation of the TMJ.