Supplemental Text

A. The Putative Component 1 Microblade Core Tablet

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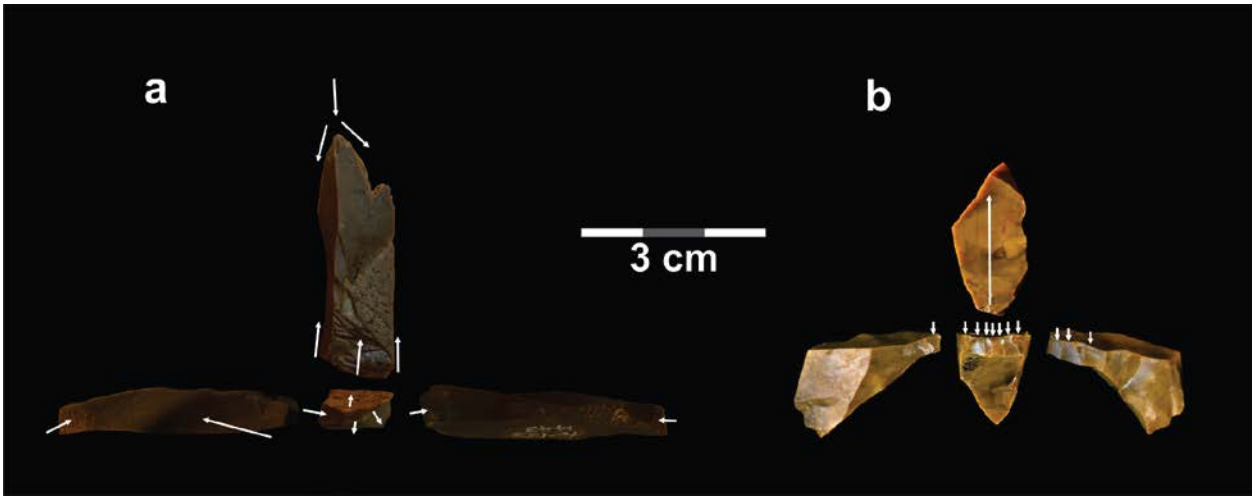
While analyzing the Dry Creek lithic assemblage at the University of Alaska Museum of the North, Odess and Shirar (2007) found a single microblade core tablet in the debitage assemblage of Dry Creek Component 1 (Supplemental Figure 1a). They contend the piece is a core tablet of a wedge-shaped microblade core and was misidentified as undiagnostic debitage by previous investigators. They describe the piece as having been "burinated from the distal end, a practice often seen in Denali-complex material from other sites" (Odess and Shirar 2007:130). In saying the Component 1 piece in question was burinated from the distal end, it is not clear whether Odess and Shirar mean the piece was removed by a burin blow that originated from the backend of a wedge-shaped microblade core (i.e., removed opposite the core front), or if the piece was a microblade core tablet that had been subsequently reworked into a burin through secondary removal of burin spalls from its distal end. In 2010, while visiting the museum, Scott Shirar gave me the opportunity to examine the piece in question (artifact accession number UA1976-155-1443).

Though I have more experience analyzing microblade technology from southern Siberia than from Alaska, I have analyzed several Siberian late Upper Paleolithic assemblages containing microblades and dozens of wedge-shaped microblade cores produced on bifacial blanks, end microblade cores produced on chunky flake blanks, and associated technical spalls (e.g., ski spalls, core tablets, frontal rejuvenation spalls, etc.) (Graf 2008, 2010). In our Dry Creek excavations, we found hundreds of microblades, eight cores and 24 technical spalls, all mirroring the technological repertoire from southern Siberia. In my experience with industries containing microblade technology, burin technology is often also present. In such cases, the tool assemblage contains purposefully manufactured burins and associated burin-spall waste; however, the technique used to produce this part of the industry is not directly associated with microblade production and microblade core rejuvenation practices (see discussion of the

differences between burin technology and microblade technology in Morlan (1970). I am unfamiliar with Alaskan literature where core tablets have been shown to be burinated from their distal ends.

In rejuvenating a microblade core platform, a transverse blow originated from the core front (flute element) and terminates at the back of the core or in the case of wedge-shaped core technology, the wedge element (Anderson 1970; Morlan 1970). In wedge-shaped core rejuvenation, it is common that force of removal takes some of the wedge element so the tablet is J-shaped or overshot (Supplemental Figure 1b [a core tablet recovered from the 2011 Dry Creek excavation]). In other cases, the tablet hinges upon removal (Anderson 1970), giving its end a bullnose shape. Several attributes characterize core tablets removed from wedge-shaped microblade cores. First, if the piece in question (Supplemental Figure 1a) can be unequivocally called a microblade core tablet, then it must possess the diagnostic pattern of parallel microfluting on its platform, evidencing that it was struck from the front of a microblade core and therefore reflects the removal of the platform of the core. Such a pattern is evident in Supplemental Figure 1b, but not apparent with artifact #1443 (Supplemental Figure 1a). Of the two facets on the platform of artifact #1443, the largest, covering more than half of the platform surface, was removed 90˚ from the direction one would expect microblade flutes to have been removed if this piece was a core tablet. Second, wedge-shaped microblade core tablets should possess lateral margins that evidence the lateral surfaces of the core from which they were removed. With wedge-shaped cores, these lateral surfaces have large, earlier-stage flake scars as well as smaller, later-stage bifacial flaking. Artifact #1443 should have lateral margins with various flake scar removals, reflecting the shaping and preparation of the lateral surfaces of the wedge-shaped core prior to microblade production (Anderson 1970). The lateral margins of artifact #1443 are not faceted (Supplemental Figure 1a). They show no signs of coming from the lateral sides of a prepared wedge-shape microblade core as does the core tablet in Supplemental Figure 1b. Finally, the dorsal surface of a core tablet, regardless of which type of core it was removed from, should bear a negative bulb of percussion and associated negative marks from previous core platform removals (Inizan et al. 1999). Artifact #1443 does not have a dorsal surface showing signs of previous core tablet or ski spall removal as seen in Supplemental Figure 1b.

After studying this artifact, I conclude that it is a flake resulting from bipolar reduction of a larger piece of brown chert. It has bi-directional removals that reflect the crushing and stepping expected from tensional forces originating from two, opposing directions simultaneously affecting the piece (Odell 2004). The lateral margins represent snap facets of a larger flake. Component 1 at Dry Creek still contains no elements of microblade production and use.



Supplemental Figure 1. Comparison of (a) artifact #1443 (UA1976-155-1443) from the 1976 excavation of Component 1 at Dry Creek with (b) a wedge-shaped microblade core tablet from the 2011 excavation of Component 2 at Dry Creek. The artifacts are oriented in the same way so attributes of the pieces can been compared. White arrows highlight direction of previous removals.

B. Procedures for Radiocarbon Sample Preparation, Pretreatment, and Assay

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Datable material was physically separated from rootlets and other modern contaminants. Adhering sediment was removed from identified wood charcoal and samples subjected to standard acid/base/acid (ABA) pretreatment consisting of repeated baths in 1N HCl and NaOH at 70°C for 30 min on a heater block. The initial acid wash dissolves any carbonate contamination. Base washes extract humic acids accumulated from soil organic matter, signaled by brown discoloration in the NaOH solution. Base washes were repeated until the solution was clear indicating the absence of potential contaminants. A final acid wash removed secondary carbonates formed during the base treatment. Samples were then returned to neutral pH with two 15 min baths in Nanopure water at 70°C to remove chlorides, and dried

on a heater block. Sample CO_2 was produced by combustion at 900°C for 3 hours in evacuated sealed quartz tubes using a CuO oxygen source and Ag wire to remove sulfur and chloride compounds. Primary (OX-1) and secondary (FIRI-F and IAEA-C5) standards were selected to match the sample type and expected age and underwent the same chemical steps for quality assurance.

The CO_2 generated was reduced to graphite at 550°C using a modified hydrogen reduction method onto a Fe catalyst (Alfa Aesar mesh -325 lots JO2M27 and L16P22), with reaction water drawn off with $Mg(ClO_4)_2$. The Fe catalyst used is baked monthly at 300°C for 3 hours in air, and subsequently baked at 400°C in H_2 for 45 minutes prior to analysis, to reduce modern carbon contamination. Solid graphite samples were pressed into Al targets and loaded on the target wheel with OX-1 (oxalic acid), other known-age standards, and wood blanks, for AMS analysis. AMS ^{14}C measurements were made on a modified National Electronics Corporation compact spectrometer with a 0.5MV accelerator (NEC 1.5SDH-1). The primary modifications impacting analytical measurement error are the use of a spherical ionizer ion source operating at high cathode voltage (9kV) to generate intense C^- beams, plus injection beam line changes for better ion-optical matching to the accelerator. The injector modifications include provision of a 2nd einzel lens plus an increased ion source voltage from 55.5 to 65.5 KV combined with a redesigned large-gap injector magnet (DF01319). These alterations allow for analytical error in the 2-3‰ range for near modern samples under currents of up to 225 µA of $^{12}C^-$, 40 to 50 µA higher than previously. This translates to errors in the ±30 to 40 ^{14}C yr range for the samples in this study.

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