Assignment 1: Scale, Frequency Distributions and Central Tendency

Part I

Test excavations at the Chicken Ranch site produced a lithic assemblage comprised of 200 artifacts including flakes, flake tools, bifaces, and projectile points. Using the dataset (chicken.xls) from this site, answer the following questions:

1. Eight variables are included in the dataset: Catalog number, artifact orientation (the direction that the long axis of the artifact was pointing [0 to 360°]), artifact type, lithic raw material, length, width, thickness, and the amount of the surface covered with cortex. What is the scale of each variable?

2. Create frequency distributions for the variables artifact type, raw material, length, thickness, and cortex. Present these in both tabular and graphical formats.

3. With the entire assemblage, calculate the mode, median, and mean values for the variables, length, width, and thickness.

4. For each artifact type, calculate the mode, median, and mean lengths.

5. Create a histogram of the variable orientation. For the same variable, calculate a mode, median, and mean. Which measure of central tendency do you think best describes the distribution of artifact orientations?

Part II

It is commonly believed that bifacial thinning and core reductiondebitage can be distinguished from each other using the morphology of flakes. For example, two common generalizations are that 1) bifacial thinning flakes are thinner relative to length and width than flakes removed from non-bifacial cores, and 2) bifacial thinning flakes have greater interior platform angles (as shown in the illustration to the right) than core reduction flakes.

The data set paleo.xls includes measurements of 400 complete flakes from five Paleoindian sites: Barger Gulch, Agate Basin, Krmpotich, Carter/Kerr-McGee, and Upper Twin Mountain. Two variables are included: the ratio of width to thickness and interior platform angle.

1. If this is true, how would you expect the data to be distributed with respect to these two variables. Create frequency distributions (tabular or graphical) of both variables. Do you see any evidence that bifacial thinning flakes can be separated from core reduction flakes using solely the data provided in this dataset?