

28 November 1971

Dear Don,

I am writing about a project which we discussed only briefly at the S. A. A. last Spring. It concerns chipping styles of flint knappers and how they can be recognized by a standardized technique. I say "a" technique, because I haven't settled on any one method yet. When such a method is developed, it would be used to find the "styles" of prehistoric individuals. This knowledge would have many applications, as I am sure you can imagine.

The idea I would like to work with now is that every person has his own way of striking blows; say, for instance, in thinning a bifacial tool. These individual habits might possibly cause the angle flake across the surface of a retouched piece to vary according to who struck them.

If this is true, the trend of the scar could be used as "signatures" of individual craftsmen. The problem is to consistently record and analyze knappers' signatures. I think I have found a device which will do the trick, and the Kansas Geological Survey has agreed to let me use it. What I do is convert the scar pattern into a line drawing and photograph it. Fig. 1 is a stone axe François Bordes made for me. Figure 2 is a line drawing of the plane face, which was photographed. The negative is placed in a device which shines a light through the negative into a set of lenses which convert the line into a target shaped pattern, Fig. 3. The more lines there are going the same direction, the more intense the lines are which cross the target in that direction. François' axe shows heavier concentrations of lines running across and up on the left, near X. I have only done a very sloppy job of contouring the target to give you the idea, but the same thing can be done electronically to great precision. These contoured targets would form the "signatures" of individual flint knappers.

This being my meager contribution to the project, I must ask a greater one of you. The project cannot be started with archaeological specimens, because we don't know for sure who made them. However, if you were to make me a few pieces, perhaps about ten if possible, François Bordes the same, and some other people contribute a few, there would be a sample, the makers of which would be known. I could then process the lot and see if the technique worked for distinguishing one flint knapper's work from that of another.

Another thing I hope to see is distinguishing schools of flint knapping. For instance, you and your students might have signatures that were more like each other than those of François and his students. I plan to ask several people to do this work. I understand you have a student called Guy Muto, who is very good. Could you ask him to make a similar number of axes?

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In order for the sample to be as controlled as possible, the pieces need to be about the same. Since I already have Francois' ax, could you follow the basic outline which he made? Figure 2 is slightly larger than actual size. Exact size is not necessary, though they should be as close as possible.

I think the best way to handle the axes is to ship them to me at the University of Pittsburgh, Department of Anthropology, 234 Atwood, Pittsburgh, Pa. As soon as you know how much it would cost to ship them, write me and I will send you the money.

Paul and Suzanna praised your field school very highly and suggested that I should ask you about attending next summer. It would be very helpful to me. My flint chipping training has been limited to two sessions with Francois and some few weeks of experiment on my own. I am sure that my studies of Paleolithic tools could be greatly aided by learning more.

I realize I am asking a great favor of you concerning the axes. Please do not put yourself to any undue trouble. If there are problems with what I have asked, please tell me and I will readjust the project to your convenience. Thank you very much.

Sincerely,

*Joel Gunn*

Joel Gunn

P.S. If possible, it would be best if the axes were made on flint. Most of the material I work with in Europe is flint. However, I see in your movies, you work mostly with obsidian. If flint is not available, I might ask your opinion as to the comparability of flint and obsidian with regard to scar patterns.