

This paper is primarily concerned with the formation of cones or portions

*relationships of lithic tech & the formation*

*these of isotropic*  
of cones in lithic materials with the properties of isotropism, *The degree of isotropism* properties *in the stone may be*

being present in major or minor degrees, depending on the nature of the material.

~~but~~ *but this quality is essential to controlled fractures.*  
Materials pertaining to those used by ancestral man in the manufacturing of *whether*  
*by instinct or reasoning - took advantage of this isotropism*  
stone tools by the fracturing or flaking techniques. In order to produce & control  
*in order to form tools by the application of force* + *size a knowledge*  
flakes of variable (sizes) thickness, width, length and form, an understanding

*to produce*

of the behavior of the cone, *in relation to force applied* ~~relative to the material~~ *that will be subjected to force* will provide an insight *help*

*clarify*

into the mechanical principals involved in flintknapping.

~~Some~~ *my interpretation of the cone principle is*  
The following comments are those of the writer, based ~~only~~ *on many* observation

~~of~~ years of experiments and observation in replicating aboriginal flaking techniques,  
*Circumstances have not permitted,*

~~as opposed to those made by nature, and not by controlled laboratory investigation.~~  
*but experiments have been replicated & also compared to*  
*cone & cone scars formed in stone lithic material*  
~~It would be most useful to coordinate conclusions drawn from manual feel and~~

~~visual observations with those experiments performed and regulated in a laboratory~~

~~should one have the time, equipment and facilities for such experiments.~~

Cones and cone parts are caused by the transmission *the result of* of applied *force*

force to isotropic materials. Applied force may be due to natural causes or  
*or calculated by man* ~~by the~~ *whether it be* intentional forces (man induced) by the application of pressure, percussion,

indirect percussion, or the combination of pressure and percussion. Natural  
*are the result of* forces encompass a wide variety of causes and *may, some under the right conditions,* replicate many caused by man, ~~but~~  
*form cone scars in stone which are similar to those*  
~~but in no way replicate preconception, planned order, rhythms and muscular motor~~  
*made by man* However, close analysis may reveal that *they are an imitation rather than a duplication and do not*  
habits displayed by the human. *on the man-made artifact.*

Le. 31.15.20(3)

*Prehistoric man the toolmaker*

The intentional use of the fracture angle of the cone by man has ~~provided a mode to understand the manner in which a flake was dislodged from one part of the cone.~~ *to detach sharp cutting flakes and these flakes*

~~the parent mass of lithic material.~~ The fracture angle of the cone <sup>can</sup> aid in

denoting the <sup>mtg.</sup> ~~techniques used~~ by relating the cone fracture angle to an

imaginary complete cone which will determine the direction <sup>of applied</sup> in which force was applied.

*By superimposing the an imaginary cone on the flake scar, one can determine the direction of applied force*  
Consistent angles of applied force or preconceived angles used to remove

irregularities or to remove lithic masses to usable forms may be separated from

fractures caused naturally and are of a random nature and with no preconception of

intended form. The first flakers of flint-like materials may not have been

aware of the principal of the fracture angle of a cone when making a flaked

stone implement but actually he was removing cone parts in the form of flakes

, progression in time and the sophistication of techniques reveal that the

fracture angle of the cone was well understood. Early man no doubt soon

learned that by changeing the angle of applied force he was able to controll

to a degree the style of flake desired and then establish conditions in which

a simiular flake could be removed in the same manner. cone parts or flakes

removed in sequence repeatedly in order to form certain tool styles caused the

workman to develop rythms and muscularmotor habits . These habits are now

rechognized by the archaeologist as diognostic traits. The removal of cone parts

which compromise flakes is not behind the skill of an ordinary person if ~~shown~~ <sup>shown</sup> instructed,

and in a short time should be able to make simple bi-facial tools such as choppers  
and hand axes. Upon being taught the <sup>use of a</sup> proper percussor the angle in which it  
is directed to a platform of the objective piece, <sup>or cone parts</sup> usable flakes can then be  
detached repeatedly or a simple artifact can be made. The use of the pressure  
tool can be used ~~##~~ to remove small cone parts with greater control ~~l~~ than by  
direct percussion but the cone parts will naturally be smaller. The basic principals  
are not difficult to master, but replication of many of the aboriginal artistry  
is indeed a chalange. #