Understanding the mode of utilization and cultural behaviour of a lithic implement in a specified assemblage needs identification of the working edge and gripping areas. Once it is logically identified interpretive potentials widen greatly. As a result, this calls for examining the problem from different standpoint. Hence, it necessitates to put forward a modified or newly evolved standardized terminology. It is being supported by explanations and clarification. The glossary has been prepared accordingly, to meet the new perspective.

**Mode of utilization:** Intrinsic character of a lithic implement indicating the way or manner of acting by itself and the media upon which, it is to be used.

**Cultural behaviour:** Intrinsic character of a lithic implement indicating basic operational activities as a means of livelihood.

**Preform:** "any piece of lithic material that has been modified to an intended stage in a specified assemblage. It needs be demonstrable that it is not a finished implement and that is intended for further modification" (Bradley, 1975) (plate: 8.1)

**Implement:** any piece of lithic material that has been modified to an intended stage in a specified assemblage. It must be demonstrable that it is the final
8.1 Lithic reduction sequences: (b & d) Pre form (Overse and Reverse); (a & c) Overse and Reverse of two independent implements derived from "b". The middle one is the reconstructed form of the missing part. Encircled number indicates the key for details in Chapter VI.
intended stage and it is not intended for further modification (other than use); (Bradley, 1975)

**Working/cutting edge (WE):** An edge or a portion of an implement usable for operation for a specific purpose.

**Gripping edge (GE):** An edge or the portion of an implement that is made blunt or otherwise suitable for gripping. It needs to be demonstrable that this ensures safety along the mode of operation in a hand-operating implement during the time of operation.

**Grip scars (GS):** Flake scars intended for gripping an implement. Grip-scars may grouped into two, viz. primary grip-scar and secondary grip-scars.

**Primary grip scars (PGS):** Flake scars meant for placing the thumb or palm pad or both on one of the surface of a lithic implement. These scars may be termed as:

**Thumb pad scar (TPS):** A flake scar semi circular or oval in shape intended for firm gripping on implement by thumb.

**Palm pad scar (PPS):** A parabolic scar that ensures firm grip of an implement by the palm with the help of the other fingers.

**Secondary grip scar (SGS):** Grip scars other than TPS & PPS found on the opposite surface. These scars meant for any other fingers, viz. – ffp, mfp, tfp and lfp to hold the implement more firmly/conveniently (plate: 8.6)

**Grip axis (GA):** An imaginary line that passes through the thumb pad (TPS) and palm pad (PPS) along the radius at 180° while grasping an implement for

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1. Bone of the forearm at the same plane of the thumb
8.2 * An example of **backward cutting tool** where the angular placement of working edge w.r.t. grip axis is at acute angle

8.3 An example of **forward cutting tool** where the angular placement of working edge with relation to grip axis is at obtuse angle

8.4 **Parallel cutting tool**

8.5 **Edge-angle for left handed tool**
*This should be the uniform system*
operation. This line (axis) may be drawn on the PGS’s surface by taking into consideration of either TPS or PPS, or both as base (plate: 8.6).

**Point of impact (PI):** Prime point at working edge and grip axis where the impact of operation is exerted initially.

**Point of impact at GA (PIGA):** It is obtained by drawing a ‘normal’ to grip axis (GA) from point of impact (PI) of working edge (WE), (plate: 8.2).

**Point of impact at WE (PIWE):** Physically assessed point at working edge (WE) where the impact of operation falls initially (plate: 8.2).

**Direction of PI of WE:** Thumb direction is taken as the positive direction (all angular measurements are with relation to positive grip axis), (plate: 8.2).

**Direction of WE with relation to GA:** Direction of placement of working edge may be defined in terms of grip axis. It may roughly be shown as follows: (plate: 8.2).

**Lateral left (LL):** Working edge towards left of the lateral sides (for right handed tools).

**Lateral right (LR):** Working edge towards right of the lateral sides (for left handed tools).

**Top end (TE):** Working edge at the top of the lateral sides (in relation to TPS).

**Bottom end (BE):** Working edge at the bottom of the lateral sides (in relation to PPS).

**Forward cutting edge (FCE):** Angular placement of working edge with relation to grip-axis (GA) at an obtuse angle (plate: 8.3)
**Backward cutting edge (BCE):** Angular placement of working edge with relation to grip axis at an acute angle (plate: 8.2).

**Parallel cutting edge (PCE):** If the cutting edge is parallel to the grip-axis, the angular placement with relation to grip axis is $0^\circ$ (plate: 8.4).

**Torque (TQ):** Rotating force of the grip axis is susceptible to the position of PIGA. Torque is relevant to edge-grip-distance to find out effectiveness and mode of operation of a particular implement having only TPS.

**Edge angle (EA):** Angular orientation of WE with relation to grip axis (GA) is obtained by drawing a 'normal' to the grip-axis from the point of impact of the working edge. It is the shortest distance between point of impact at working edge (PIWE-point) and point of impact at grip axis (PIGA-line). This phenomenon is abbreviated as SDPIGA (shortest distance between PIGA and PIWE)(plate: 8.2).

**Edge-grip distance (EGD):** Shortest distance between PIWE (physically assessed point) and PIGA (line) obtained by drawing a 'normal' to the GA from PIWE (i.e. normal drawn from GA to the PIWE).

**Working edge:** It may be a point or a line.

**Edge line:** The contour of the cutting line of an implement in its longitudinal direction – a morphological character verified physically e.g. straight, concave, convex, pointed etc.

**Edge slope:** Beveling of the cutting edge of a lithic implement e.g. Uni-beveling, bi-beveling and dented (owing to intensive use).
Spectrum tradition: Tradition that spills over beyond its ethno-cultural and geo-cultural boundaries. It spreads fast and far and wide from its homeland in fragments or in its total form. The whole process apparently acts in a more or less common ecological system at a particular period of time.

Unit-distribution: Percentile distribution of characters of different assemblages shown in unit-ratio to have an idea about the proximity and distances among the sites in regard to the given character. The conversion of PC into unit is based on the following principle as illustrated below:

\[
\frac{a}{a+b+c} \times 100 : \frac{b}{a+b+c} \times 100 : \frac{c}{a+b+c} \times 100
\]

(i) Given sites = (a= SMR) : (b=MBS) : (c=BBG)

(ii) Given character = Pounder

(iii) PC of the given character (within the respective assemblages) = (a= SMR = 5.3%): (b=MBS =8.9%) : (c =BBG =16.5%)

(iv) Conversion of PC to unit

\[
\frac{5.3}{5.3+8.9+16.5} \times 100 : \frac{8.9}{5.3+8.3+16.5} \times 100 : \frac{16.5}{5.3+8.3+16.5} \times 100
\]

i.e 17.26: 28.99 : 53.74

Say =17:29:54 (unit distribution can show in round figure for archaeological application).

SOMATOMETRIC

Wrist swing (WS): Degree of flexibility of the wrist up to an optimum level is pivotal to the hand operated lithic implements. This excludes hafted tools.
Plate 8.7 (a) Gonio meter (modified) for measuring wrist swing. (b) Method of maneuvering. (c) Ulnar swing.

Plate 8.8 Somatometric measurements on wrist swing
While manipulating a hand-operated implement the wrist swings in certain direction within a given range and this may be shown as follows (plate: 8.7-8.8).

Radial swing (RS): Lateral swing of the wrist towards radius of the upper arm. It varies from 66° to 76° (plate: 8.8).

Ulnar swing (US): Lateral swing of the wrist towards ulna of the upper arm. It varies from 25° to 40° or 205°-220° (uniform system).

Forward swing (FS): Swing of the wrist towards body. It varies from 78° to 85° (plate:8.8).

Backward swing (BS): Swing of the wrist away from the body. It varies from 65° to 85° or 245°-265° (uniform system), (plate: 8.8).