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Taming Time in the Great Basin

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Following the pioneering work of Robert Heizer and Martin Baumhoff, C. William (Billy) Clewlow published a series of papers in 1967 and 1968 describing and chronologically ordering numerous morphological forms of Great Basin projectile points. His work was critical to establishing the temporal duration of each of these forms and creating what we call today temporal types. The projectile point chronology that Clewlow was instrumental in developing has been reaffirmed at countless archaeological sites throughout the Great Basin and has been pivotal in cross-dating otherwise undatable open sites.

Great Basin archaeological sites have always been difficult to date. Although there are well-known caves and rockshelters containing organic materials suitable for ^{14}C dating, the majority of sites appear as surface artifact scatters lacking diagnostic pottery, shell beads, or ornaments amenable to cross-dating. In the late 1950s, Robert Heizer and his students at U.C. Berkeley began to focus on using projectile point shape, in concert with relative stratigraphic associations, to help impose temporal order over archaeological assemblages from California and the Great Basin. Baumhoff and Byrne's (1959) study of Desert Side-notched points in California led the way, and this was followed by papers proposing a relative sequence for projectile points in the Great Basin (Heizer and Baumhoff 1961; Lanning 1963). There was wider interest in establishing criteria for projectile point classifications in the Far West during this time (e.g., Swanson and Butler 1962), and subsequent studies appeared in adjacent regions. In the Columbia Plateau, for example, local researchers followed Baumhoff (1957), Baumhoff and Byrne (1959), and Heizer and Baumhoff (1961), and adopted Elko Eared, Elko Corner-notched, and Desert Side-notched nomenclature, but proposed a series of other named types for local use (e.g., Bitterroot points [Swanson and Bryan 1964] and Blue Dome Side-notched [Swanson et al. 1964]).

Billy Clewlow's involvement with Great Basin projectile points began in the summer of 1965 (his first summer as a graduate student at U.C. Berkeley), when Robert Heizer took a group of students to Lovelock Cave. During that summer they collected points from NV-Ch-15 (the Humboldt Lakebed site) that were incorporated into a large private (Newhall) comparative collection held at Berkeley. Also during that summer the students screened the talus slope in front of Lovelock Cave and recovered projectile points. But just recovering points probably would not have been enough to influence Clewlow's subsequent focus. Some of it no doubt stems from his interest in

> collecting Miocene shark teeth as a kid. I lived in a cabin on a cliff over the Chesapeake Bay which was a major Miocene fossil bed. For hours each day I would walk the beach right where the waves stirred the sand, looking for things that were small, shiny, anomalous in terms of texture, and pointed. As a teenager I collected Civil War artifacts, mainly Minie balls, or bullets, in the freshly tilled soils around the battlefield of Bull Run. So maybe you could say that my thing with points was an extension of the shark teeth/Civil War bullet interests [Clewlow, personal communication 2011].

The turning point for Clewlow's concentration on projectile points seems to have been reached in the fall semester of 1965 when Heizer offered a seminar on the Great Basin in which students had a choice between working on coprolites or projectile points. All of the students had been required to put in volunteer time working at the coprolite lab that Heizer had named the Second Harvest Investigative Technique (with a big sign over the door in Room 1 of Kroeber Hall emphasizing the first letter of each word), so he knew from firsthand experience that studying coprolites was not his calling. Too much stench—too time-consuming. So, as he put it, "I jumped at the projectile point offer, as did O'Connell. Lew Napton and Richard Ambro got stuck with the turds."

As part of that fall 1965 lab class, Heizer had Clewlow re-classify and organize the entire NV-Ch-15 collection, a project that lasted about a year because it included writing a report on the results that was published in 1968 (Heizer and Clewlow 1968). Also in 1965, he assisted in the excavation of a small open site (NV-Pe-67) near the Lovelock airport and found a number of projectile points, which he helped analyze and describe in a 1968 publication with Richard Cowan (Cowan and Clewlow 1968). These experiences in the summer of 1965 fueled his interest in points, and with Heizer's encouragement and support, gained him the opportunity to type and publish point collections from Lovelock (Clewlow 1968a; Clewlow and Napton 1970) and Hidden caves (Roust and Clewlow 1968), and opened the door for him to get involved with the South Fork Shelter points (Heizer et al. 1968) and some material from Rose Spring.

In the summer of 1966, Heizer sent him to the Black Rock Desert to investigate localities where he had learned that private collectors were finding crescents and concave-based points in substantial numbers. A large number of points were recovered during that survey, including crescents, fluted pieces, and a number of Clovis-like concave base specimens that he named Black Rock Concave Base (Clewlow 1968b). Only surface-collected artifacts[1] were reported in that paper, but on the basis of the locations of early sites around the margins of former pluvial lakes, Clewlow (1968b:50) inferred that "human activity in the Black Rock Desert area during the Anathermal centered around…lake or lake margin(s), and was probably focused on hunting of the various mammals and avifauna there." He contrasted this association with the much later use of the area (marked by Rose Spring Corner-notched and Desert Side-notched points) which, unlike in earlier times, was centered predominantly around local springs—not lakeshores or marshes.

Between 1965 and 1968, Billy was really into points, but by late 1968, Heizer diverted him to rock art as a research assistant (Heizer and Clewlow 1973; see also Clewlow 1978) and was pressing him to complete his dissertation on Olmec sculpture, which he did in 1972 (see Clewlow 1974). At that time, he had also launched a research project in Grass Valley, Nevada (Clewlow 1973; Clewlow and Ambro 1972; Clewlow et al. 1978).

EARLY APPROACHES TO PROJECTILE POINT CLASSIFICATION IN CALIFORNIA AND THE GREAT BASIN

As with all scientific accomplishments, Clewlow's contributions to Great Basin projectile point chronology need to be appreciated and situated in the historical contexts from which they developed.

The close cultural relations between California and the Great Basin had been recognized long before by early anthropologists (Kroeber 1920:168, 1939:49–51; Wissler 1916), and considerable effort by archaeologists at the time was devoted to constructing chronologies from which anthropological conclusions about the time depth for these relations might be determined. Projectile point classifications and typologies were important aids in doing so.

In California, early workers (e.g., Nelson 1910; Rogers 1929; Uhle 1907) eschewed any formal classification of projectile points, but provided brief descriptions of the specimens much as Abbott (1881) had done on the Atlantic seaboard. Beginning in the mid 1920s the idealized shape categories derived from the early work of Thomas Wilson (1899) were adopted and modified for local use (Gifford and Schenck 1926; Harrington 1928; Schenck 1926; Schenck and Dawson 1929) and later codified in Bulletin 2—the 'Bible' of central California archaeology (Lillard et al. 1939; also Heizer and Fenenga 1939). Johnson's (1940) introduction of binomial nomenclature for distinctively serrated projectile points from the Stockton area was perhaps a precursor to what was to come, but with some exceptions,[2] throughout the next four decades projectile points in California were classified essentially as they had been since the 1920s using Strong's (1935) variation (Fig. 1, Table 1) of the Wilson system (see Fig. 1; e.g., Beardsley 1954; Davis and Treganza 1959; Heizer 1949; Olsen and Wilson 1964; Ragir 1972; Treganza et al. 1950).[3] Number/letter systems (e.g. Davis 1960; Elsasser 1960; Fitzwater 1962; Gerow and Force 1968; Harrison 1965; Heizer and Elsasser 1953;

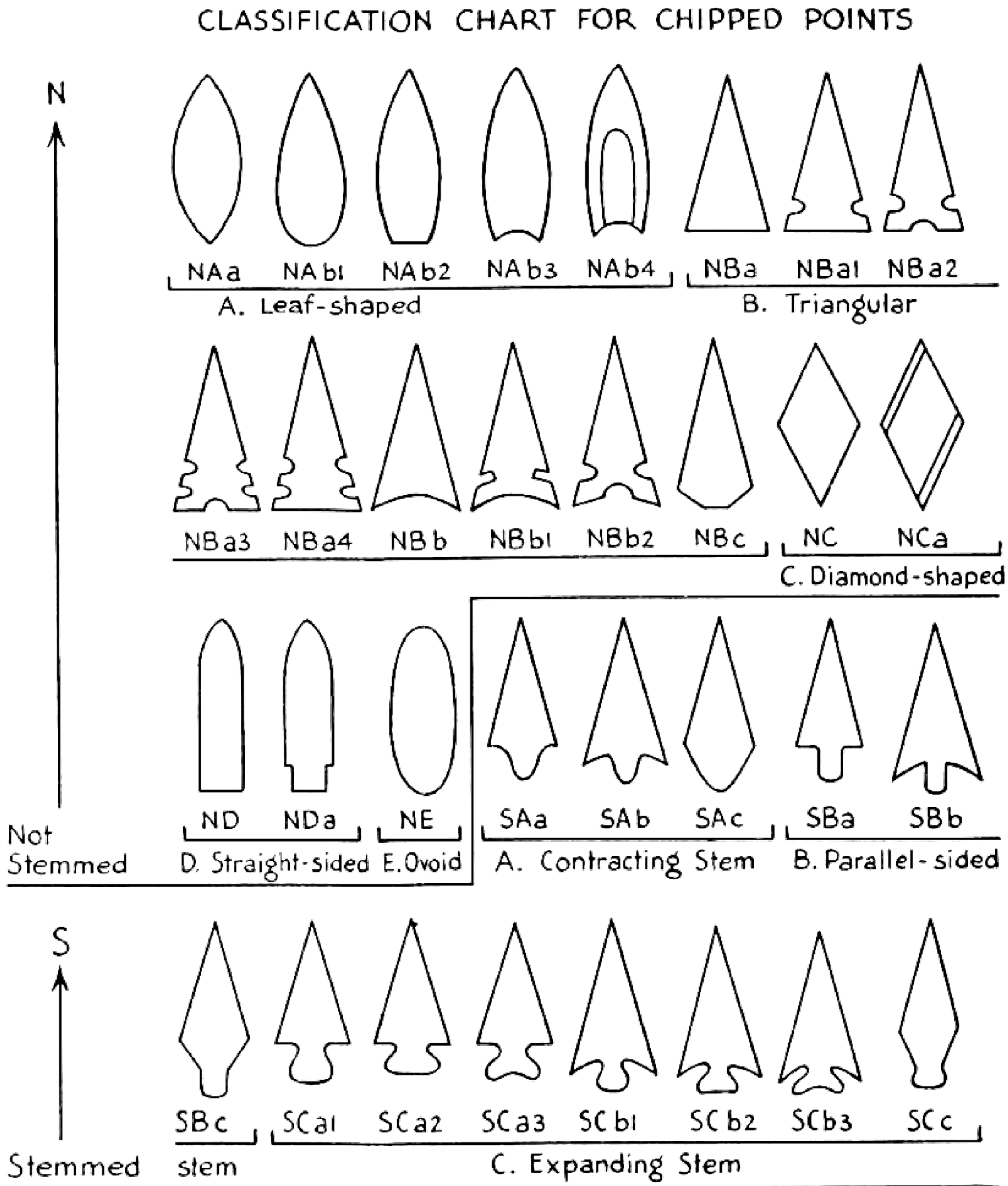


Figure 1. The Strong (1935) classification system for chipped points. See Table 1 for explanation.

Johnson 1967; Meighan 1955; Olsen and Riddell 1963; Pohorecky 1976; Riddell et al. 1953) also proliferated during this time.

Early archaeological research in the Great Basin employed essentially the same approaches to projectile point classification as in California. Though no formal classification system was used to describe the points from Lovelock Cave (Loud and Harrington 1929), Harrington (1933) provided excellent illustrations of the points recovered from Gypsum Cave and used the term 'Gypsum point' to describe the distinctive contracting-stem form found there. Campbell and Campbell (1935) identified Pinto points in southern California, and Rogers (1939) adopted the terms Gypsum and Pinto to classify

Table 1

KEY TO THE STRONG (1935) CLASSIFICATION CHART

N. *Not Stemmed*	S. *Stemmed*
A. Leaf-shaped.	**A. Contracting stem**
a. Pointed at both ends	a. Shouldered only
b. Pointed at one end	b. Shouldered and barbed
1. Convex base	c. Neither shouldered nor barbed (lozenge)
2. Straight base	
3. Concave base	**B. Parallel-sided stem**
4. Concave base (longitudinal groove) Folsom type]	a. Shouldered only
	b. Shouldered and barbed
B. Triangular.	**C. Expanding stem**
a. Straight base.	a. Shouldered only
1. Two side notches	1. Convex base
2. Two side notches and 1 base notch	2. Straight base
3. Four side notches and 1 base notch	3. Concave base
4. Four side notches and no base notch	b. Shouldered and barbed
b. Concave base.	1. Convex base
1. Two side notches	2. Straight base
2. Two side notches and 1 base notch	3. Concave base
c. Convex base	c. No barb, no shoulder
C. Diamond shaped	
a. Beveled	
D. Straight sided and pointed at one end [Yuma type]	
a. Narrow base [Yuma type]	
E. Round or ovoid in outline	

projectile points from the lower Colorado. Cressman (1936) first classified southeastern Oregon points employing the Wilson system, but later abandoned it at Catlow Cave (Cressman 1942:81) in favor of numbered types used to group points from Roaring Springs Cave (Cressman and Krieger 1940). The principles elucidated in the latter study presaged later developments in the Great Basin. Smith (1952) and Taylor (1954) employed unique number/letter 'types,' Heizer and Krieger's (1956) description of Humboldt Cave points followed the same typology (Strong 1935) that Heizer employed in California,[4] and Jennings (1957:100) adopted a unique letter/number system at Danger Cave because it was his opinion that "at this stage of knowledge the naming of large numbers of these basic flint forms is unwarranted." As they did in California, number/letter types continued to be used in some areas of the Basin (and adjacent areas, e.g., Cresssman 1956:411–417; Cressman et al. 1960:43–46) throughout the early 1960s (e.g., Riddell 1960; Shutler and Shutler 1963; Tuohy 1963),[5] but enough additional conventional ^{14}C data on projectile point associations had accumulated by the first part of the 1970s that Basin-wide summaries of named types could be presented (Heizer and Hester 1978; Hester 1973).

PROBLEMS WITH EARLY WORK

Although the Strong system facilitated point *shape* comparison and classification, it was insensitive to point *size* differences critical to separating arrow from dart points. For example, using the Strong system (Fig. 1), Desert Side-notched and Northern Side-notched points both would be classified as type NBa2, NBb1, or NBb2 on the basis of overall *shape*, despite the dramatic differences in their *size* and *ages*. So, as more information began to accrue on the stratigraphic and (later) radiocarbon age associations of different projectile points, these weaknesses in the Strong system rendered it increasingly obsolete. Some of the same shortcomings attended the use of number/letter systems. Many authors associated their numbered types with different time periods (e.g., Bennyhoff 1956; Riddell 1960), but unless archaeologists adopted the same number/letter convention *and* classification criteria (the advantage of the Strong system)—which rarely happened—it remained difficult to compare 'types' between and among different site assemblages. At a minimum, number/letter types were extremely cumbersome for comparative purposes (cf. Bennyhoff 1956:31–44 with Fitzwater 1962:239–243; Riddell 1960:Table 7).[6]

CLEWLOW'S CONTRIBUTIONS

Billy Clewlow's early contributions to projectile point chronology research fell within the "intuitive" tradition of the mid-1960s; one "…laid out all the points, gathering similar specimens into groups" (Heizer and Baumhoff 1961:123)[7] with an eye toward potential stratigraphic and weight differences between and among groups (see Fig. 2).[8] Stratigraphic distinctions were paramount, but they were even more vital at this time when one considers how few ^{14}C dates were available in the early to mid-1960s in clear association with Great Basin projectile points. The coarse scale distinctions derived from these

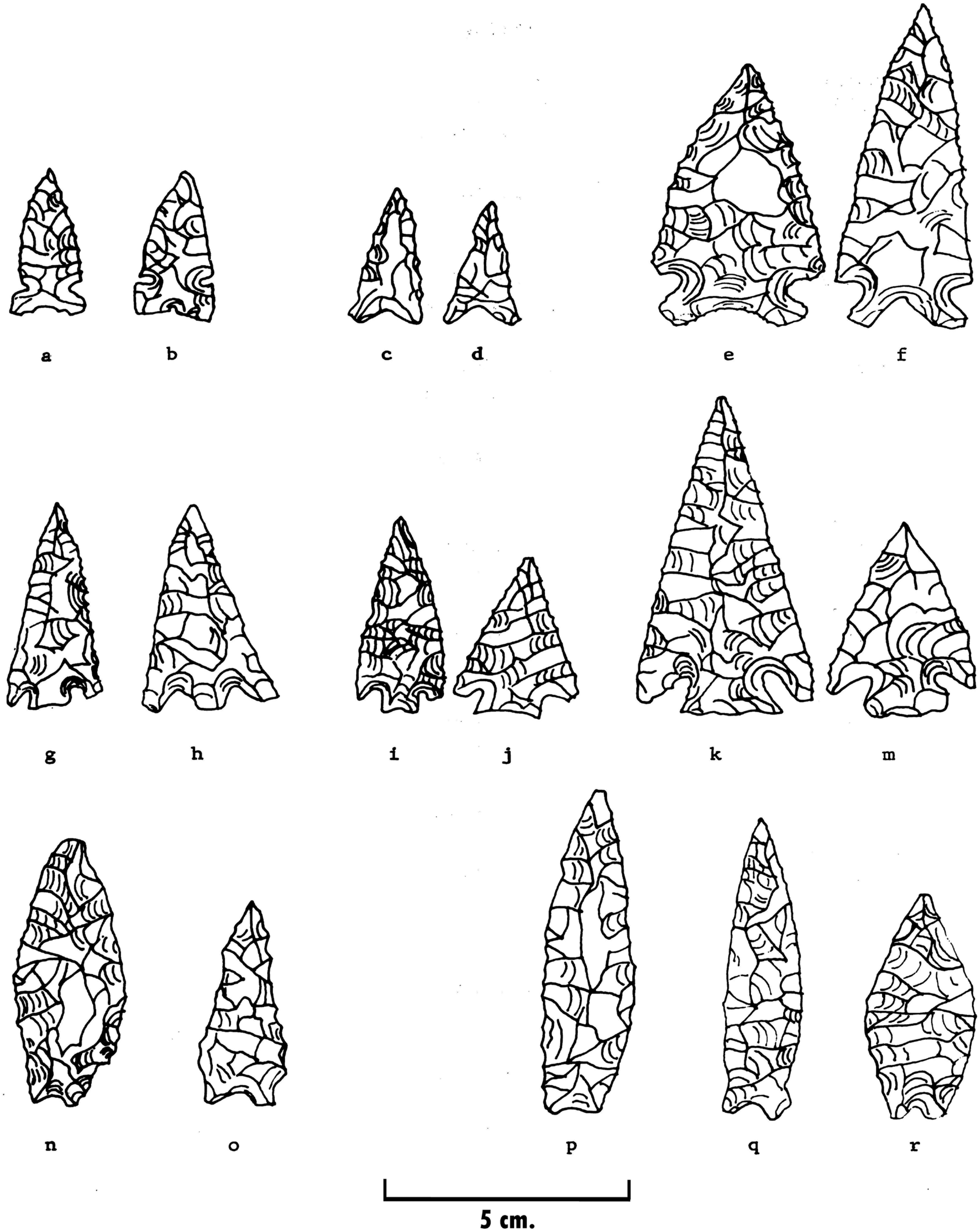


Figure 2. Examples of Great Basin Projectile Point Types as Classified by Clewlow (1967): (a, b) Desert Side-notched projectile points; (c, d) Cottonwood Triangular projectile points; (e, f) Elko Eared projectile points; (g, h) Eastgate Expanding Stem projectile points; (i, j) Rose Spring Corner-notched projectile points; (k, m) Elko Corner-notched projectile points; (n, o) Pinto Sloping Shoulder projectile points; (p–r) Humboldt Concave Base A projectile points (after Clewlow 1967: Fig. 1).

intuitive sortings were comparatively easy to recognize and replicate, although subtle formal and areal differences were more problematic. As it became increasingly clear that similarity to one researcher was not the same as similarity to another, ensuing research focused on metric attribute classification to achieve a more standardized reporting convention (e.g., Holmer 1986; Thomas 1970, 1981; see Figs. 3 and 4).[9]

The underlying assumption of classification as adopted by Clewlow appealed explicitly to Krieger's (1944:272) tenet that archaeological specimens should be grouped into types which had "demonstrable historical meaning in terms of behavior patterns," and using this precept Clewlow (1967:143) pointed to the differences in Great Basin subsistence adaptations that might be inferred from changes in weaponry (i.e., the change from the atlatl to the bow-and-arrow). In today's parlance, Clewlow's early work was largely directed toward the definition and specification of the spatial extent and duration of temporal types (*sensu* Thomas 1981), and it is remarkable how little the temporal sequences that he, and others (e.g., O'Connell 1967), proposed and defined have changed over the last several decades.

However, at the time of Clewlow's contributions to Great Basin projectile point chronology, it was assumed—mostly by archaeologists working in the western Great Basin—that the temporal duration of named types was, or should be, the same throughout the Basin. Although they could not "provide any good reason to refute the Danger Cave data," Baumhoff and Heizer (1965:704) were clearly skeptical that "some projectile point type(s) [were] in use without a sign of change for 5,000 years." Since that time, excavations at Hogup Cave (Aikens 1970) and a number of other eastern Great Basin sites (Holmer 1986) show that certain projectile point types were indeed introduced earlier, and persisted later, than their counterparts in the west. The reason(s) for this are not clear, but today researchers apply different chronological age ranges to points in the eastern and western areas of the Great Basin (Beck 1999; Grayson 2011).

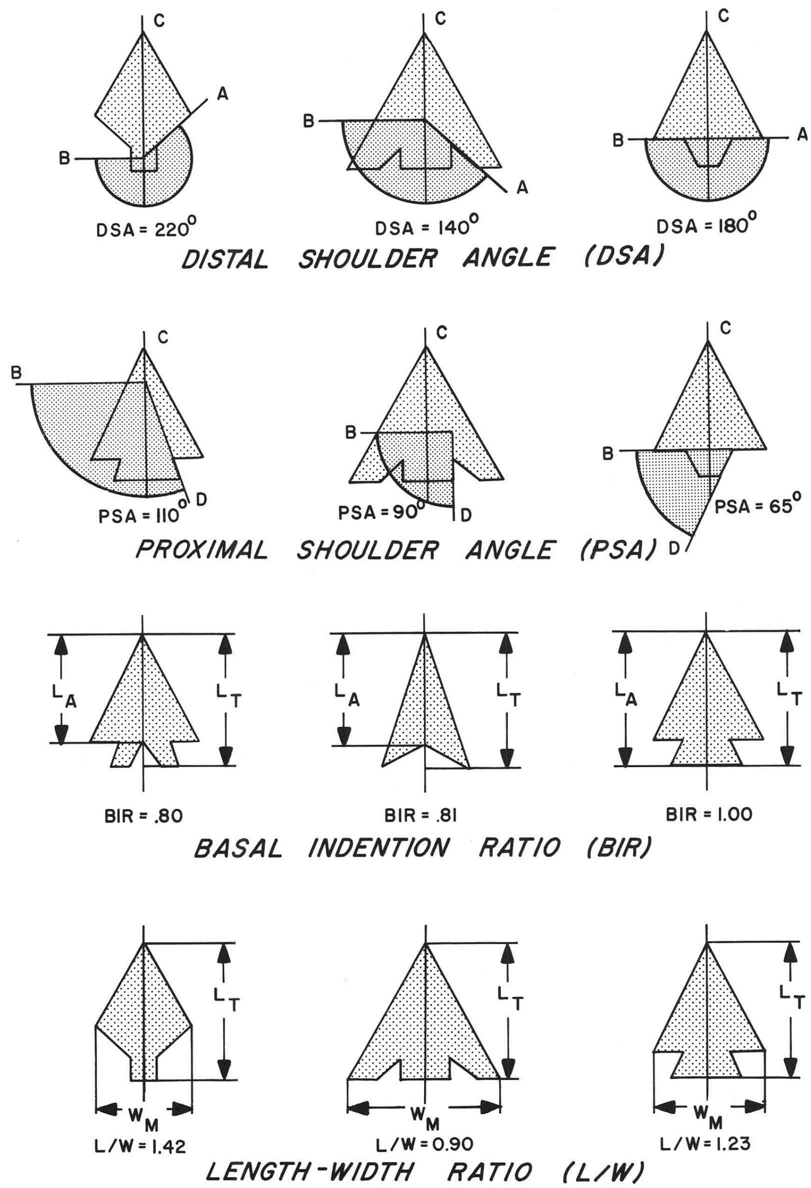
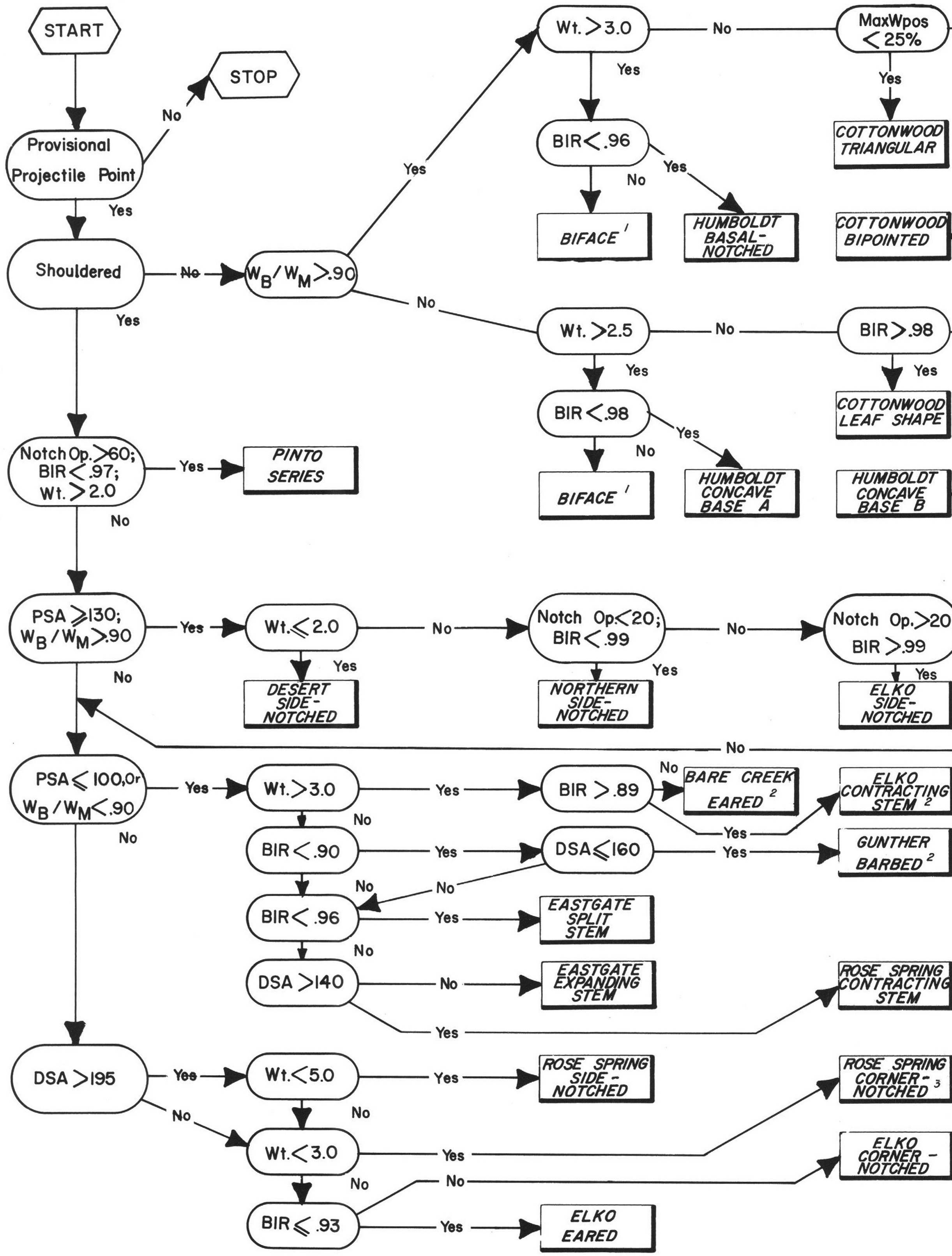


Figure 3. Some standardized metric attributes used to classify Great Basin projectile points (after Thomas 1970:Fig. 2).

SUMMARY

C. William Clewlow made essential contributions to establishing the temporal duration of projectile point



1. Not a projectile point. *2. Small sample.* *3. Combined with Surprise Valley Split Stem.*

Figure 4. Key I flowchart for classifying Great Basin projectile points (after Thomas 1970:Fig. 4).

types in the Great Basin. Although Heizer and Baumhoff (1961) had described and named many of the significant Great Basin points types and were able to identify the *stratigraphic relations* among some of them, it remained for Clewlow (1967; Clewlow et al. 1970)—along with Lanning (1963) and O'Connell (1967)—to propose *calendric temporal spans* for the major forms. This was no small accomplishment, and was done in papers that would seem brief by today's standards.

Radiocarbon and obsidian hydration dating aside, projectile point chronology still serves most California and Great Basin archaeologists on a daily basis, and cross-dating using projectile points was, and still is, one of the only ways to impose temporal order over surface assemblages (e.g., Bettinger 1975, 1977; Thomas 1971, 1973). Clewlow was at the forefront of this cross-dating breakthrough, and he recognized that it had the potential to allow archaeologists to distinguish 'horizontal' stratigraphy at Great Basin surface sites related "not only to time factors but also to the changeover from atlatl to bow-and-arrow" (Clewlow 1967:146). We tend to take this cross-dating 'gift' for granted today, but it was not always so. Clewlow deserves major credit for analytical insights and scholarly contributions that helped establish a robust chronology for chipped-stone projectile points in the Great Basin.

ACKNOWLEDGEMENTS

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NOTES

[1]During this time Clewlow (1968b:49) mentioned that "caves and rockshelters abound on either side of the [Black Rock Desert] basin. We tested over 40 such sites…" (my addition).

[2]Notable exceptions are Amsden's (1937) naming of Silver Lake and Lake Mohave points, Baumhoff's (1957) naming of Desert Side-notched points, Harrington's (1957) separation of Pinto subtypes, and Treganza's (1958) designation of Gunther Barbed points.

[3]In commenting on his use of the Strong (1935) system, Heizer (1949:20) wrote that "[i]t is not very satisfactory, since occasional examples do not strictly conform to the type. Such intermediate or doubtful forms are arbitrarily disposed of by assigning them to one or another shape group."

[4]When he and Heizer were revising their original 1937 manuscript for publication in 1950–1951, Krieger objected to the use of the Strong typology to describe the Humboldt Cave points because he believed "that such groupings have no real meaning" (Heizer and Krieger 1956:29, note 9). Krieger (1949:161–173) had been employing named types in Texas at least since 1946 and was not inclined to perpetuate outmoded classifications (cf. Krieger 1960).

[5]In addition to using numbered point types at Wilson Butte Cave, Gruhn (1961:130) was the first to propose the term Northern Side-notched.

[6]There were other point classification methods proposed during this time (Black and Weber 1936; Finkelstein 1937), but to my knowledge these were never applied to California or Great Basin collections. It is perhaps of historical interest that another point classification system, proposed by Whiteford (1947), was applied to specimens from the Napa Valley by Riddell (et al. 1953). Heizer (1953:261, note 5) could not help but remark that this (Whiteford's) scheme was "unhandy and difficult to use. The terminology is so highly symbolic that few readers will master it sufficiently well to decode the tables…with ease. Some simpler techniques for presenting the data on chipped implements could surely have been followed or devised. [The authors must] assume full responsibility for introducing what may appear to be an overly complicated section in an otherwise plainly written descriptive report." To my knowledge, students at Berkeley did not apply the Whiteford system to any subsequent California or Great Basin collection.

[7]This procedure is essentially the same as that described by Krieger (Cressman and Krieger 1940:41) for classifying projectile points from Roaring Springs Cave in Oregon (see also Cressman 1956:411).

[8]Heizer and Baumhoff (1961:Table 1, p. 135) reported length, width, and weight of Wagon Jack Shelter points, using weight contrasts to separate arrow points from dart points (as Fenenga [1953] had suggested). In March, 1962, a number of western archaeologists convened to propose standards for reporting projectile point type descriptions. The suggested attributes were largely impressionistic, but some metric data (length, width, thickness, and ratios of these) were included. Interestingly, material type—which could seriously skew weight comparisons between, say, Elko Corner-notched and Eastgate points if both types were made frequently from different raw materials (obsidian vs. chert)—was not included in the proposed Projectile Point Analysis Form (Swanson and Butler 1962:14), although Heizer and Baumhoff (1961:Figs. 2–5) did report material type for each of the points recovered from Wagon Jack Shelter.

[9]In light of the use of metric attributes for point classification during this time, an important early study (Kehoe 1966; Kehoe and McCorquodale 1961) doing just that in the Great Plains seems to have been overlooked by workers in California and the Great Basin. Kehoe's (1973:47–78) emphasis on metrics to identify small side-notched points was remarkably modern.

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