3

Warriors and Weapons

Late Prehistoric/ Protohistoric–Period Warfare in Bear Gulch Rock Art

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Until recently, our knowledge of pre-1750 northern Plains Indian warriors' armaments, accoutrements, and tactics was limited to the recollections of Sahkomaupee, the journals of Verendrye, and bits of data from fortified Middle Missouri villages and a few northern Plains burials (Burpee 1927; Kendell, chapter 13, this volume; Lehmer 1971:107–128; McGinnis 1990; Owsley et al. 1977; Scheiber 2008; Thompson 1962; Wood 1976; Zimmerman and Bradley 1993; Zimmerman and Whitten 1980). Yet, spanning a period of about 300 years, from AD 1450 to 1750, the northern Plains rock art record is replete with illustrations of warriors, their equipment, and their battles (Greer and Greer, chapter 2, this volume), and it is from these that we are beginning to understand much more about how and why these warriors fought one another and with what they were armed.

Northwestern Plains rock art scholars have been interested in the shield-bearing and V-neck warrior motifs (figure 3.1), as hallmarks of northwestern Plains warrior art, for more than 50 years (Conner 1962a, 1962b, 1984; Conner and Conner 1971; Dewdney 1964; Ewers 1975:399; Gebhard 1966; Keyser 1975, 1977a, 1984, 2004a; Keyser and Klassen 2001:191–221; Loendorf 1990, 2009; Loendorf and White 2010; Magne and Klassen 1991; Mulloy 1958; Ray 2008). Frequently shown with weapons, headdresses, heraldic shield designs, and other battle accoutrements, these are the two most common motifs in the Ceremonial-tradition

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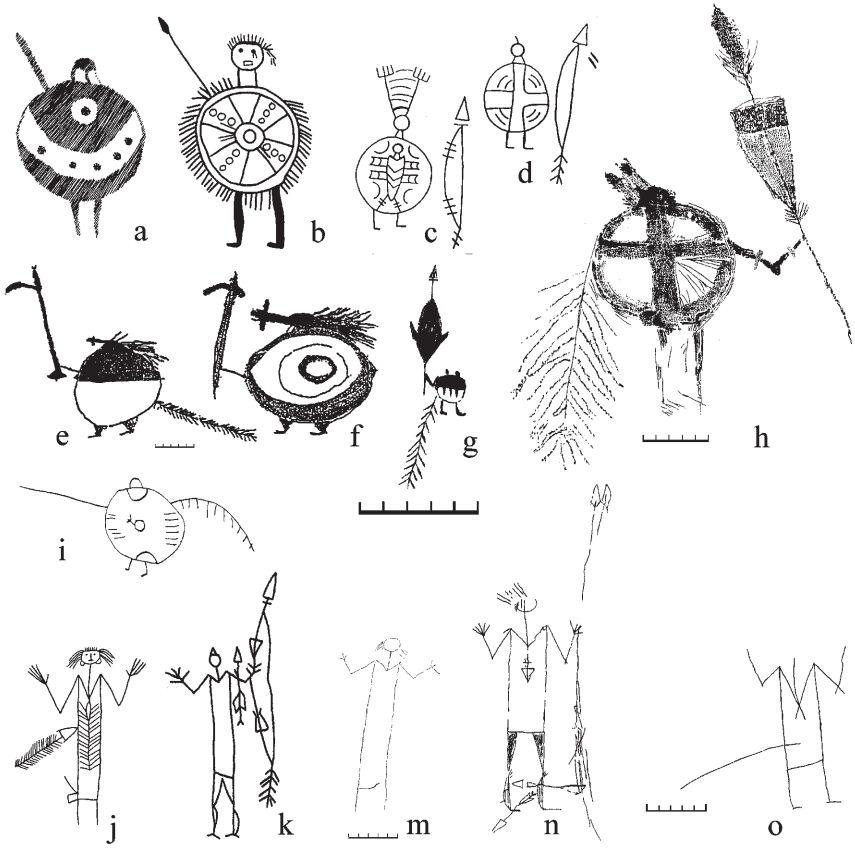

Figure 3.1. *Shield-bearing and V-neck warriors from various northern Plains sites. Note weaponry, accoutrements, and heraldic shield designs. (a) Hilej; (b) Decker; (c–d, k) Writing-on-Stone; (e–h, m–o) Bear Gulch (n and o are composed in a combat scene); (i) Castle Gardens; (j) Bighorn County. (See figure 3.2 for site locations.) Scales are 5 cm.*

art that dominated the Late Prehistoric/Protohistoric–period northwestern Plains rock art record (Keyser 2004a:58–66; Keyser and Klassen 2001:190–256). Surprisingly, however, as of yet only a few studies (Greer and Greer, chapter 2, this volume; Greer et al. 2010; Keyser 1979; Keyser et al. 2006; Loendorf and Porsche 1985:78–85) have been oriented primarily toward elucidating what rock art motifs and compositions are actually trying to tell us about how the artists viewed warfare and why they participated in it.

Fortunately, recent recording of the Bear Gulch and Atherton Canyon rock art sites in central Montana has allowed our research team to expand an initial interest in this subject, and we find ourselves in the enviable position of having sufficient quantity and detail of data about this particular period to provide fodder for many such discussions. Although these have just recently begun (e.g., Kaiser et al. 2010; Keyser 2004b, 2006a, 2007a, 2008a, 2008b, 2010; Keyser and Kaiser 2010; Keyser et al. 2012) additional research will likely continue for decades. Coupled with renewed interest in the indications of warfare evidenced in Plains skeletal populations (e.g., Gill and Weathermon 2008; Owsley and Bruwelheide 2008; Scheiber 2008) and the focus on warfare provided by the chapters in this volume, these newly acquired Plains rock art data offer an unparalleled opportunity to increase our understanding of the genesis and evolution of the Plains warfare complex and many of its various components. This would come as welcome news to those pioneering anthropologists who laid the groundwork for the topic in the years before and just after World War II (Ewers 1975; Grinnell 1910; Lewis 1942; Mishkin 1940; Newcomb 1950; Secoy 1953; Smith 1938, 1951).

THE SITES

Bear Gulch and Atherton Canyon (figure 3.2) are the two most extensive Plains rock art site complexes yet discovered and recorded, containing, respectively, more than 5,000 and 1,000 distinct elements (Keyser et al. 2012). In number of images and complexity both Bear Gulch and Atherton Canyon are larger than any other single northwestern Plains rock art site and both are nearly equal to or larger than rock art site complexes at Writing-on-Stone, Verdigris Coulee, and the North Cave Hills, each of which contain from 10 to 50 individual sites (Keyser 1977b, 1984; Klassen 1995; Sundstrom 2004).[1]

The primary motif at both sites is the shield-bearing warrior, with 856 at Bear Gulch and 168 at Atherton Canyon. This total of 1,024 is more than three times greater than all other known shield-bearing warriors so far recorded on the northwestern Plains (Keyser 2006b).[2] Of these 1,024 images, more than 960 are part of the formally defined Bear Gulch–style shield-bearing warrior that represents a recognizable cultural type (Kaiser et al. 2010). A handful of armed, rectilinear, or stick-figure humans without shields are directly associated with these Bear Gulch–style shield-bearing warriors and are included in this research.

In addition to the Bear Gulch–style shield figures and associated humans, nearly 30 V-neck humans and five unique shield-bearing warriors belonging to an identifiable Blackfoot style (Keyser 2011; Keyser et al. 2012) are also drawn

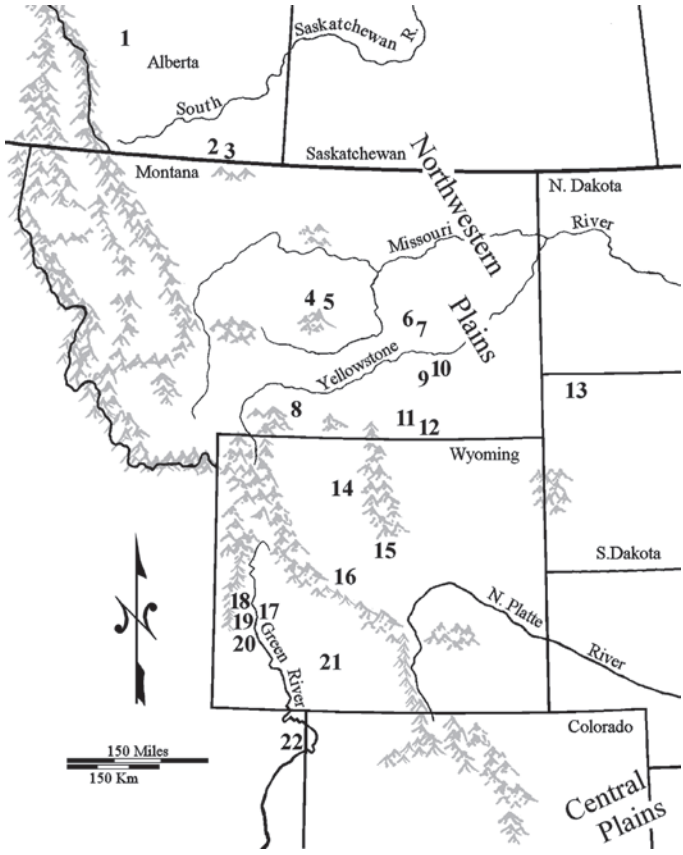

Figure 3.2. *Northwestern Plains showing locations of sites referred to in text. (1) Williams Coulee; (2) Verdigris Coulee; (3) Writing-on-Stone; (4) Bear Gulch; (5) Atherton Canyon; (6) Nordstrom-Bowen; (7) Castle Butte; (8) Hilej; (9) Recognition Rock; (10), Ellison's Rock; (11) Bighorn County; (12) Decker; (13) North Cave Hills; (14) No Water; (15) Castle Gardens; (16) Red Canyon; (17) La Barge Bluffs; (18) South Piney; (19) Names Hill; (20) Gateway; (21) Pine Canyon; (22) McKee Spring.*

at Bear Gulch. These are frequently armed and often depicted as engaged in various war-related activities.

Both sites also contain many freestanding weapons and shields, and when it can reasonably be inferred that these war-related items are associated with the other Late Prehistoric and Protohistoric imagery at the site, they are included

in this discussion. The few scenes of horse-and-gun-period combat[3] that occur at both sites have been described and discussed in considerable detail elsewhere (Keyser 2006a; Keyser et al. 2011, 2012) and are included here only as comparative material.

All Bear Gulch–style shield-bearing warriors and the few associated humans and most V-neck humans at these sites are relatively securely dated to the last two centuries of the Late Prehistoric period (AD 1450–1650) and the century-long Protohistoric period, which spans AD 1650 to 1750 (Keyser et al. 2011, 2012). Dating evidence at these sites includes radiocarbon dates on charcoal pictographs and a wooden stake associated with other rock art, radiocarbon-dated occupation levels at Bear Gulch, and information in the rock art subject matter itself, such as the size of shields and the presence of metal projectile points illustrated in the absence of horses and guns (Keyser 2010, 2011; Keyser and Kaiser 2010; Keyser et al. 2011). In addition, detailed superimposition sequences allow us to relatively date both particular styles and many individual images within this 300-year span (Kaiser et al. 2010; Keyser et al. 2011, 2012). Essentially the evidence from these sites provides an almost ideal data set for discussing warfare in the period immediately before the introduction of the horse and gun into the northwestern Plains.

WARRIOR ART AND WARFARE: BEAR GULCH AND ATHERTON CANYON

Warriors represented by shield bearers and V-neck humans at Bear Gulch and Atherton Canyon provide a rich record for the study of arms and accoutrements, battle tactics, and the motives for warfare in the Late Prehistoric and Protohistoric periods in Central Montana. In order to describe such a wealth of information this discussion is divided into two major sections: "Arms and Accoutrements" and "Battle Compositions and Tactics." Then, using the classic "direct historical approach" (e.g., Deetz 1965; Strong 1935; Wedel 1938, 1961; Wood 1967, 1969) components of each of these are compared to the rich Plains Indian ethnographic record of the horse-and-gun period to help construct a summary of what warfare was like during the 300 years immediately preceding European contact with Plains Indian cultures.

Arms and Accoutrements

Warriors at these sites are well armed with detailed representations of five basic weapons, and they wear a variety of headdresses, hairstyles, and face

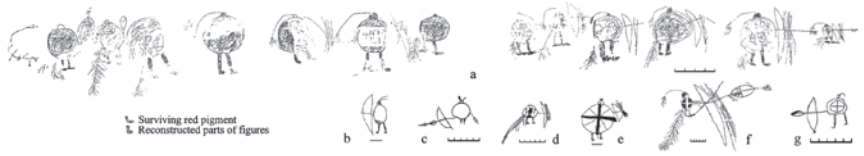

Figure 3.3. *Bowmen at Bear Gulch (a, b, d–f) and Atherton Canyon (c, g). (a) is a phalanx of 13 similarly armed, solid-variety warriors. Note that parts of warriors at left are reconstructed. Scale bars are 5 cm except for a, which is 20 cm.*

paint. In addition to weaponry and headgear, their shields are decorated with a limited suite of heraldic designs and many are further elaborated with feather bustles or medicine bundles. Several men wear animal tails attached to their moccasins or animal pelts slung over their shoulder. In addition to these accoutrements of dress, warriors' weapons are often elaborately decorated—much more than can be explained by simple function as killing tools. Each of these categories is discussed below.

Offensive Weaponry

Not surprisingly offensive weapons characteristic of our period of interest at Bear Gulch and Atherton Canyon are those typical of close combat, shock-troop warfare. The bow and arrow is the only long-range weapon portrayed, and bows are relatively much more common in the earliest subset of Bear Gulch–style shield-bearing warriors—solidly-colored, Solid variety warriors (figure 3.3a)—most of whom are arranged in ranks of men portrayed as marching off to war (Keyser et al. 2012). These bows are long, single-curve weapons, and most bowmen are equipped with several arrows. Combined with their large, full-body-size shields we can readily assume that these bowmen's role would likely have been analogous to that of medieval archers who rained arrows down on enemy troops massed in an opposing phalanx formation.

This sort of battle formation and such tactics are clearly described by Sahkomaupee for some of the latest battles in pre-horse/pre-gun times (Lewis 1942:47–48; Secoy 1992:34–37). However, the paucity of bowmen in Bear Gulch–style compositions, where bows account for only 38 of the nearly 660 shield-bearing warriors' weapons (6%), suggests that archers were somewhat specialized soldiers.[4] Furthermore, their much greater occurrence in the earliest Bear Gulch–style imagery suggests that, contrary to Sahkomaupee's recollections, this weapon was falling out of favor in the latest decades of the Late Prehistoric period and the Protohistoric period, at least for the tribal

groups responsible for drawing Bear Gulch–style imagery. Interestingly, only occasional shield-bearing warriors armed with clubs and lances accompany the early groups of archers, but these weapons become much more popular for later warriors.

The primary Bear Gulch–style weapons, accounting for more than 90 percent of the armed shield-bearing warriors, are lances, maces, and clubs, in that order of popularity. Lances or spears (figure 3.4) are by far the most common offensive weapon for Late Prehistoric and Protohistoric combatants at these two sites, with 441 warriors so armed. An additional 87 lances, all portrayed with a characteristic point and often a weapon flag identical to those on shield-bearing warriors' weapons, are drawn as freestanding examples. About 30 percent of spears have a large triangular or lanceolate point, 34 of which (figure 3.4d, e, j, k, o, p, r) are identified as metal blades (Keyser and Kaiser 2010). Nearly 100 other lances have tips indicated by a simple crosspiece drawn perpendicular to the spear shaft or a small "brush-like" attachment at the tip composed of three to a dozen forward-pointing lines. Exactly what type of killing tip was meant by these latter two depictions is not clear, but some of the brush-like tips could have been a multiple-pointed leister type weapon (though there are neither archaeological nor ethnographic examples of such weapons on the Plains). Some lances are the most detailed, finely drawn examples in Plains rock art, complete with carefully drawn points and attachments of exquisitely detailed feather flags and fluffs (figures 3.1h, 3.4j).

Other than guns, which were obviously a Historic-period introduction, lances are the most common weapon in both Late Prehistoric– and Historic-period rock art (Keyser 1977a:40–41, 1984:16; Keyser and Klassen 2001; Keyser and Poetschat 2005:26) and also in robe and ledger art from the Historic period (Afton et al. 1997; Bates et al. 2003). In Protohistoric-period rock art, lances are by far the most common weapons depicted (Keyser 2010:91–92), and they are the weapon of choice for more than 40 percent of all armed shield-bearing warriors from other Plains sites (Keyser 2006b). The general observation that lances were more common than bows and arrows for both Late Prehistoric– and Protohistoric-period warriors, as evidenced in rock art all across the northwestern Plains, is likewise at variance with the emphasis given the bow and arrow in Sahkomaupee's account, suggesting that his experiences were either slightly anomalous compared to a broader regional pattern, or that the emphasis was more a factor of Thompson's reporting than the actual situation.

The second-most-common weapon at these sites is the spike mace—a club-like halberd-type implement whose shaft is studded near its upper,

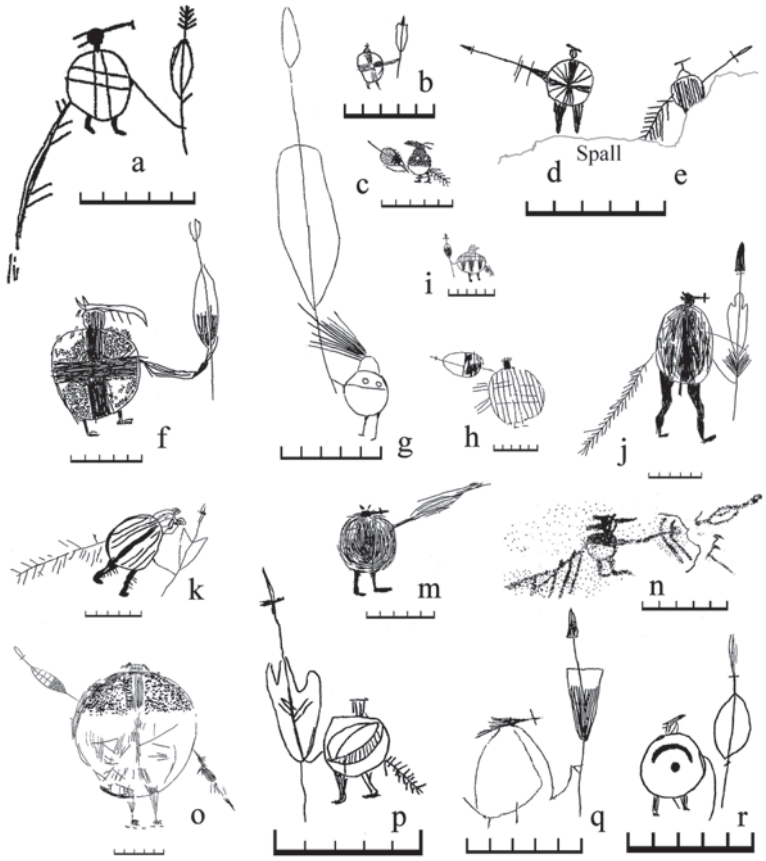

Figure 3.4. *Shield-bearing warriors armed with lances: (a–f, i, j, n, p–r) Bear Gulch; (g, h, k, m, o) Atherton Canyon. Scale bars are 5 cm. Note bundles worn by a, o; bustles by c, e, i, j, k, n, p; and wolf hats by a, c, f, j, m, n, q, r.*

occasionally slightly bulbous, end with one or two long curved spikes, presumably elk- or deer-antler tines (figure 3.5). Ninety such weapons are split evenly between single- and double-spike varieties, and 84 of these are carried by shield-bearing warriors or other associated humans. Often the spike or spikes show a marked downward curve, but others project nearly straight out from the shaft. Some maces are drawn about the length of the clubs commonly carried by other shield-bearing warriors at these sites, but others are significantly longer, approaching almost 2 m in length (as estimated relative to the anatomical height of the warrior), similar to the size of a lance. Six

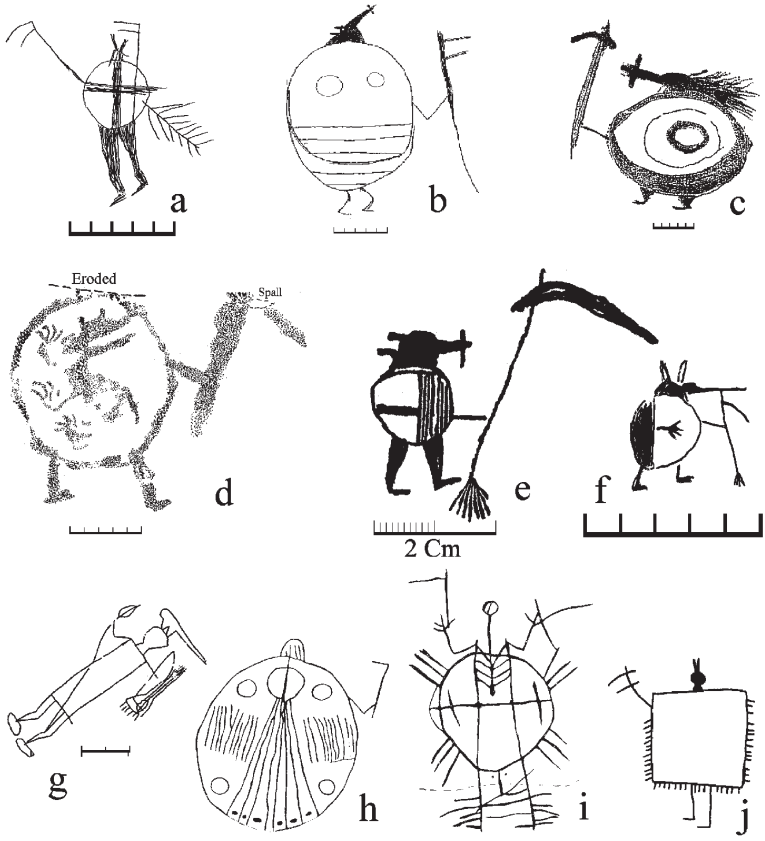

Figure 3.5. *Spike maces are a common Late Prehistoric- and Protohistoric-period weapon: (a–g) Bear Gulch; (h–i) North Cave Hills; (j) Red Canyon. Note tabs or tassels on e and f, while g shows a floating weapon counting coup by striking the head of a warrior armed with spear and bow. Scale bars are 5 cm except e.*

examples have a tassel or fringed tab pendant from their bottom (figure 3.5e, f), and one has a clearly drawn knob on its lower end (figure 3.1e).

Most maces are brandished by shield-bearing warriors, but one of the most carefully drawn examples is embedded in the head of a vanquished enemy (figure 3.5g). In one phalanx of 14 warriors (12 of whom carry shields), eight men brandish such maces, while the only other armed members of the party are two lancers and a third man with a club (figure 3.6b).

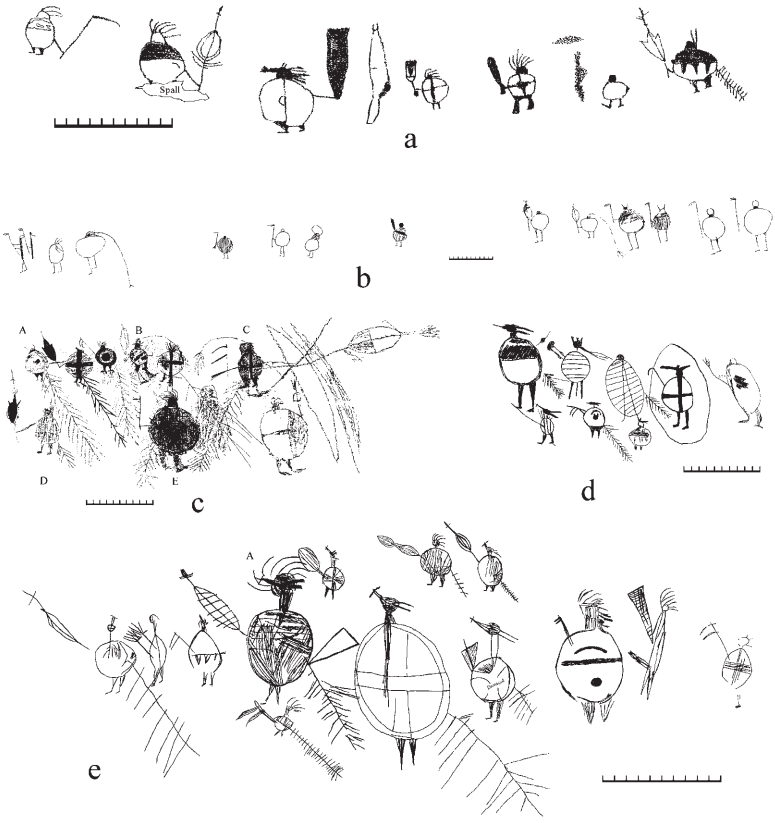

Figure 3.6. *Ranks of warriors grouped and ready for battle are common in the Late Prehistoric and Protohistoric-period rock art at Bear Gulch. Note the variety of weapons and headdresses. Labels a and b show single phalanxes, while c–e show warriors more in a cluster. Note that each phalanx has at least three different weapons. Warriors indicated by capital letters (A–E in c and A in e) are combination figures consisting of the original warrior and a second warrior drawn as a direct conjoined overlay. Scale bars are 10 cm.*

Spike maces are occasionally illustrated in other Late Prehistoric– and Protohistoric-period rock art, usually wielded by shield-bearing warriors (e.g., Francis and Loendorf 2002:149; Fredlund 1993:43; Keyser 1977a:figure 13b, d, 14a; 1984:figure 3a,c; 2004a:21; 2006b; Keyser and Klassen 2001:196, 199, 246; Keyser and Poetschat 2008:46, 59; Mulloy 1958:figure 42, numbers 1,

5, 7). Most are single-spike weapons, but several are clearly two-spike maces (figures 3.5a–b, 3.6b). They are not illustrated in ledger drawings or on buffalo robes, but they do occur in ethnographic and archaeological collections. The best-documented example is a club (figure 3.7c) illustrated by Bodmer that has a decorated wooden handle and an elk-antler spike carved in the form of a bird's head (Hunt et al. 1984:334).[5] An archaeological specimen, a 70-cm-long proximal end of an elk-antler main beam with a sharpened bez tine (the second tine above the skull), was found in the vicinity of several high-altitude bighorn-sheep traps and was likely a mountain sheep–killing club (Frison 2004:161; Kornfeld et al. 2010:309). Prince Maximilian also noted elk-antler war clubs used by the Gros Ventre Indians (Hunt et al. 1984:334) and somewhat similarly shaped war clubs with metal spikes were made and used later in the historic period (Taylor 1994:163). Although it is possible that some of those illustrated at Bear Gulch and Atherton Canyon had metal spikes, the curvature of most spikes suggests that they were deer- or elk-antler tines.

Clubs, carried by 71 shield-bearing warriors and another associated human occur as two primary types. Most common are baseball bat–shaped weapons, which account for nearly half of the illustrated examples (figure 3.6a, 3.8c–f). These are shown either projecting out at an angle from behind the warrior's shield or held vertically in his hand just outside the shield perimeter. Some are quite elaborate, with a knob on the handle (figures 3.6a, 3.8f), a tassel or feathers at the top, and decorative lines drawn along the weapon's barrel. Broad, blade-like, triangular clubs (figures 3.6a, 3.8a) are also quite common. These show a distinct triangular shape, sometimes with a round knob at the bottom and lines decorating the club's blade (figure 3.8a). A few other clubs—primarily the pogamoggan type with a small stone head bound at the end of a flexible shaft—are carried by fewer than 10 shield-bearing warriors (figure 3.8b).

War clubs of various sizes and shapes were common among Historic-period Plains Indians (Catlin 1973 [1844]:V.1:figures 99, 101; Hunt et al. 1984:334–338; Penney 1992:228–229; C. Taylor 2001:14–23; Thomas and Ronnefeldt 1976:20). Those drawn at Bear Gulch and Atherton Canyon indicate clearly that their origins extend back into the Late Prehistoric and Protohistoric periods. The clearly illustrated baseball bat–type is much more common among these rock art warriors than in later Historic-period paintings or ethnographic collections, but at least three archaeological specimens (e.g., figure 3.9) found near bighorn sheep traps in Wyoming and identified as a mountain sheep–killing clubs (Frison 2004:161; Kornfeld et al. 2010:309) are a nearly perfect match for several illustrated rock art clubs (cf. Figures 3.6a, 3.8f).

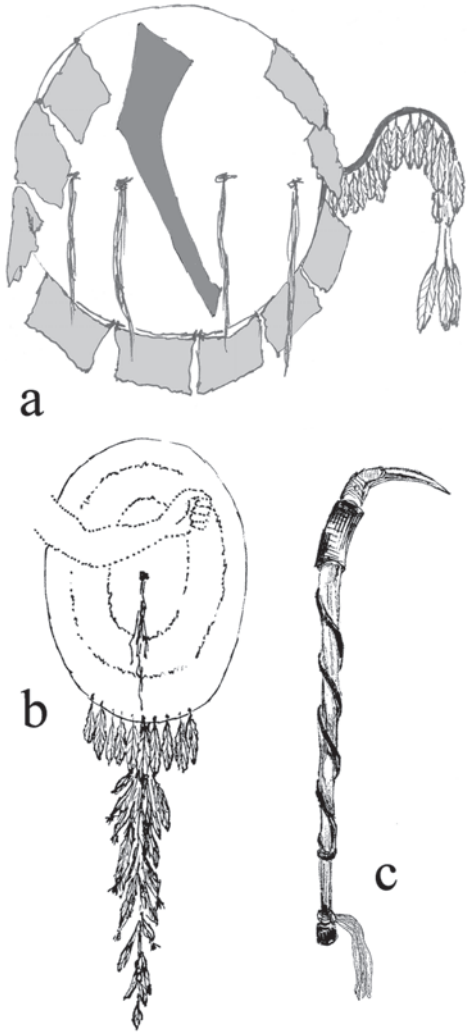

Figure 3.7. *Shields and clubs from the Upper Missouri River region drawn by Karl Bodmer (a, c) and George Catlin (b). Note: (a) erected buffalo bull's tail bustle (light gray-colored rectangular objects around margin of shield are flaps of red cloth or red-stained hide); (b) feather bustle pendant from a shield; and (c) one-spike mace made of wooden handle with an elk-antler tine spike. Images redrawn from Bodmer (Hunt et al. 1984) and Catlin (1973 [1844]).*

The only other notable weapons used by these Late Prehistoric/Protohistoric–period warriors are the bow-spear (figure 3.10a, b) and crook-neck coup-stick (figure 3.10c-e). Held by two shield bearers and shown four times in one detailed Protohistoric-period tally of a warrior's coups, bow-spears are long, elaborately decorated, single-curve weapons with large triangular points affixed to one end and a feathered tab or trailer pendant from the other. Four examples of a single bow-spear drawn touching three shield-bearing warriors

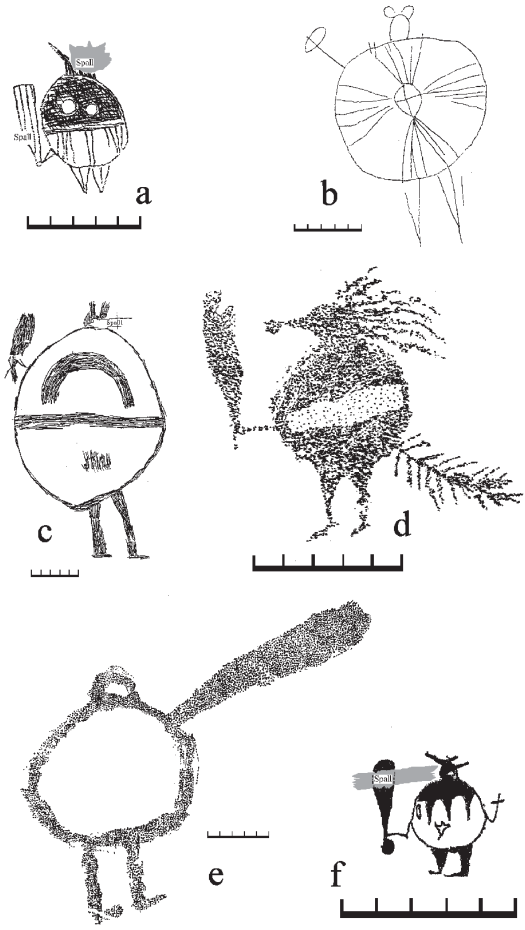

Figure 3.8. *Clubs are also a common weapon for Late Prehistoric–period warriors at Bear Gulch (b–f) and Atherton Canyon (a). Note three types of club: triangular (a), pogamoggan (b), and baseball bat–shaped (c–f).*

and floating over the heads of two V-neck women in the coup-count tally (Keyser 2008b:68; 2011) each have fluffs of feathers and additional streamers attached to the bow stave above and below the handgrip. A distinct quillon barb at one basal corner of the illustrated lance point demonstrates it was a metal blade (Keyser and Kaiser 2010). The bow-spear portrayal is a classic example of the floating weapon convention in the Biographic art lexicon (Keyser 1987a; 2006a; 2008b:69–71).

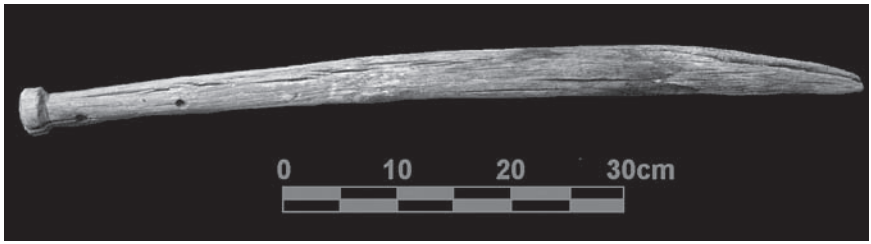

Figure 3.9. *Wooden club from Wyoming found associated with a mountain sheep trap. Note shape and knob on handle that resemble clubs used by Bear Gulch–style shield-bearing warriors. Photograph courtesy of George Frison.*

Rock art bow-spears are illustrated at only six other Plains sites from Writing-on-Stone, Alberta, to the Texas Panhandle (Keyser 2008b).[6] The floating bow-spears in the Bear Gulch coup-count tally are nearly identical to three at Writing-on-Stone; and all have been identified as part of a Protohistoric-period Blackfoot tribal style (Brownstone 2001a:260–261; Keyser 2006a:71; 2008b:71; 2011; Keyser and Cowdrey 2008:21–23). In Historic times the bow-spear was thought to have potent supernatural power, and versions of the weapon served as emblems of leadership in various military societies of several Plains tribes (Keyser 2008b).

Four "crooked lance" coup sticks (figure 3.10c–e) are associated with Bear Gulch–style shield bearers—three carried by warriors and a fourth drawn as a floating weapon counting coup on another warrior. All are clearly depicted crook-neck staffs, commonly shown in Historic-period northwestern Plains robe and ledger art (Afton et al. 1997:219; Berlo 1996:103, 166, 201; Horse Capture et al. 1993:105; Maurer 1992:189, 223, 226, 235, 241, 253) and occasionally in rock art (Keyser and Cowdrey 2008:28; Keyser and Mitchell 2000:27, 30). Contrary to most of those drawn in Historic-period art, none of these four is decorated in any fashion.

Defensive Weaponry: The Shield

The only defensive weapon shown in the rock art under consideration at these sites is the full-body-size shield, carried by 1,024 shield-bearing warriors (figures 3.1, 3.3, 3.4–3.6, 3.8, 3.11a–f) and drawn as another 146 freestanding images. When the size of these round shields can be assessed against the height of the warriors carrying them, they measure between 80 and 140 cm (30–55 in) in diameter (Keyser 2010). More than 750 of these show heraldic designs, including both geometric and representational images. Simple counts

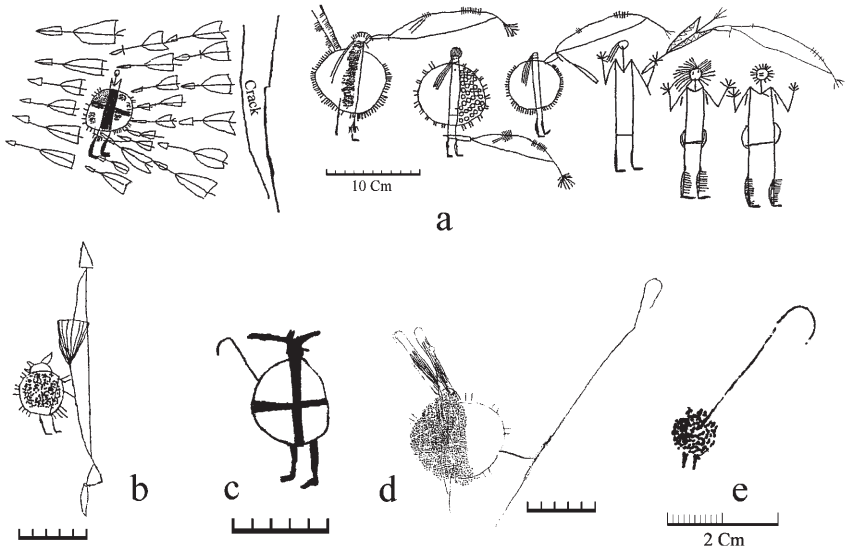

Figure 3.10. *Bow-spears and coup sticks, although uncommon, do occur as Late Prehistoric/Protohistoric–period weaponry. Note that a is a coup-count tally with four examples of the same bow-spear counting coup on enemy warriors and capturing two enemy women (at far right). The male warrior between the last shield figure and the two women is coup-struck on his upper arm by a large, very detailed arrow or spear with outsized fletching. Scale bars are 5 cm except a and e.*

of basic meaningful units (cf. Nagy 1994) show that shield heraldry among the group(s) that drew these figures was based primarily on geometric forms (Keyser and Kaiser 2014). Sometimes this is simply a division of the shield's circular field, but more often it is a distinctive geometric element drawn to span the face of the shield. The cross is the most common such element, comprising 30 percent of all geometric designs, and has the most variations.

Representational images comprise only about 17 percent of heraldic designs and occur as five basic meaningful units, including various animals or birds, eyes, teeth, and the Hand of God motif. Bears are the most common recognizable animal design and occur in two forms—the Bear Coming Out and the Standing Bear motifs (figures 3.3d, 3.5d)—both of which are common in Historic-period shield heraldry (Keyser 2004b; Keyser and Kaiser 2014). The Hand of God motif (figure 3.5f) shows a human-like arm and hand reaching

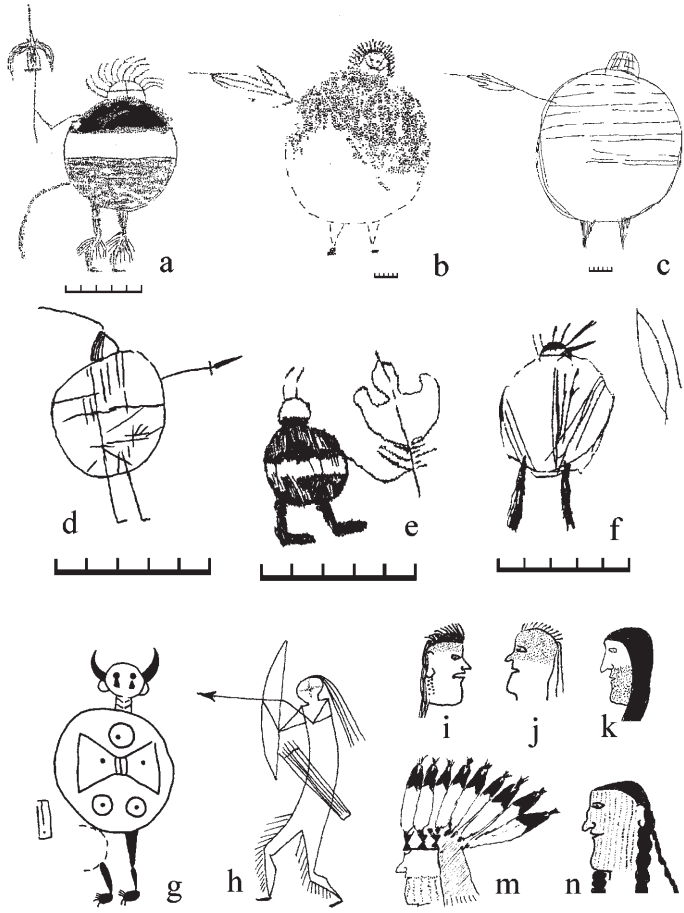

Figure 3.11. *Face paint is a common accoutrement for Bear Gulch (a–c, e–f) and Atherton Canyon (d) shield-bearing warriors. Tear streaks on shield-bearing warrior in North Cave Hills (g) is the only type of facial marking drawn on shield-bearing warriors elsewhere in Plains rock art. All types of face paint at Atherton Canyon and Bear Gulch can be duplicated in robe art (h) and ledger art (i–n). Scale bars are 5 cm.*

out from the darker half of the shield into its lighter half to symbolize the intervention of a being reaching out from the supernatural realm to influence the secular world and assist the shield owner in vanquishing his enemies (Keyser and Kaiser 2014).[7]

These full-body shields are rarely fringed, but 190 examples have a feather bustle extending out horizontally or drooping downward from one lower quadrant of the shield (figure 3.1e, g, h). An additional 15 shields have a small weasel- to fox-sized animal-skin medicine bundle attached in lieu of a bustle (figure 3.4a, o).

Accoutrements of Dress

Five categories of ritual dress characterize Bear Gulch and Atherton Canyon shield-bearing warriors (table 3.1), but only one of these—headdresses and hair styles—is shared with V-neck humans. In addition to head gear, other items include—in order of their relative frequency—feather bustles, face paint, animal-skin medicine bundles, and animal tails attached to the heels of moccasins or to garters worn at the knees.

HEADDRESSES AND HAIRSTYLES

More than 635 human figures, including both women and men and V-neck humans and shield-bearing warriors, wear headdresses or hairstyles. Multiple examples of six distinctive headdresses are recorded and eight different hairstyles can be distinguished. Headdresses illustrated multiple times include feathers in many different configurations, bison-horn war bonnet, wolf hat, "sheep horns," and a tall bishop's mitre–type hat. Recognizable hairstyles include roach, scalplock, bear's ears, hair extensions, pompadour, long hair, mullet, and a sun-ray hairdo that appears to represent "disheveled hair" used to indicate women. In fact, some of these, such as the roach or bear's ears could represent either a headdress or a hairstyle, depending on whether the headgear was a separate attachment or simply a way of cutting or wearing the hair. Of these, the roach, wolf hat, scalplock, and feather headdress of various types are worn by more than 50 warriors each.

Most common at these sites is the roach, worn in three different ways by nearly 225 warriors (figures 3.4h–i; 3.11a–b); usually as a series of short, similar length, evenly spaced, curved lines crowning the top of the warrior's head and often arching down over one side nearly to the neck as if illustrated in side profile. Other roaches consist of either short, straight, evenly spaced rays atop the head and arching down around one quadrant, or a "flat top" hairstyle shown as a series of relatively evenly spaced, short, straight, vertical lines standing only atop the head. This roach motif could represent either a "Mohawk" hairstyle where the shaved sides of the head leave only a crest of hair standing from the forehead back to the neck, or a roach headdress in the form of a crest made of stiff animal hair worn as a cap or hair attachment. Both the hairstyle

Table 3.1. Accoutrements of Dress and Weapon Decorations.

Accoutrements of Dress	*Bear Gulch*	*Atherton Canyon*
Headdresses/Hairstyles		
Hair roach	192	32
Wolf hat	124	24
Feathers	92	12
Scalplock	39	8
Scalplock with tassel	15	
Roach & scalplock	5	1
Bear's ears/Scalplock	2	
Bear's ears	20	2
Disheveled/Sun-ray	4	
Bison-horn bonnet	11	1
Mountain-sheep horns	4	11
Bishop's mitre	5	
Pompadour	1	
Pompadour/Long hair	2	
Long hair	3	
Hair extensions	2	
Mullet	4	
Other	21	3
Bustle	161	29
Face Paint	86	17
Bundles and Pelts		
Animal bundle	13	4
Bird bundle	2	
Animal pelt	5	
Moccasin Tails	14	1
Knee Tails	5	1
Weapon Decorations		
Weapon flag	316	58
Weapon fluff	65	6
Weapon tab	23	4

and headdress were common in Historic times (Bates et al. 2003:157; Keyser 2004a:103; Mails 1973:300; Maurer 1992:144).

The roach is occasionally illustrated in Plains rock art; most often worn by shield-bearing warriors (Keyser 2006b; Keyser and Klassen 2001:233, 240; Keyser and Poetschat 2009:11, 34). At Writing-on-Stone it is worn by two shield-bearing horsemen that date—like much Bear Gulch and Atherton Canyon imagery—to the early Protohistoric period (Keyser 2010:91).

Nearly 150 warriors at Bear Gulch and Atherton Canyon wear a distinctive wolf-hat headdress (figures 3.1e-f, 3.4, 3.5), so far positively identified only at these two sites (Keyser 2007a). This characteristic headdress shows a prominent long, thin nose in combination with two ears and a cluster of lines extending behind the head that represents the wolf-skin cape hanging down the warrior's back (Keyser 2007a; Keyser et al. 2012). On 66 examples a short crosspiece is painted or scratched near the end of the nose essentially perpendicular to its long axis. Although there is a good ethnographic reference for the wolf-hat headdress (e.g., Blish and Bad Heart Bull 1967:172, 174, 177; Densmore 1918:380–381, Plates 57, 58, 66b; Ewers 1997:198; Keyser 2007a), there is no clue as to what this crosspiece might actually represent.

Just more than 100 warriors wear feather headdresses of various sorts (figures 3.1h, 3.3c, 3.4d-e), ranging from "stand-up" eagle-feather bonnets, much like those typically worn by Historic-period Blackfeet warriors (Keyser 2004a:6), to single or double feathers worn upright in their hair, to a feather worn horizontally in the hair atop the warrior's head. This wide variety of arrangements corresponds to other Late Prehistoric/Protohistoric–period rock art imagery (Keyser and Klassen 2001) and closely mimics the almost limitless ways in which Historic Plains warriors wore feathers, either as formal headdresses or simply tied into various places in their hair (e.g., Mails 1973; Taylor 1975; Thomas and Ronnefeldt 1976). Interestingly, the stereotypical Plains feathered war bonnet with feathered trailer is not present in the precontact rock art at either site.

A scalplock, shown as a single line extending up and back from the top of the warrior's head and then drooping down toward the ground, is worn by 64 shield-bearing warriors and 5 other humans at Bear Gulch and Atherton Canyon (figures 3.3a, f–g, 3.6b). This almost certainly represents a braid, and one specialized variety terminates in a tassel of short lines that represents either unbraided hair or feathers or streamers attached at the braid's end. The scalplock hairstyle shows a statistically significant association with the earliest, solidly painted Bear Gulch–style shield figures and serves, in part, to identify one particular cluster of these figures (Young 2010). Elsewhere on the Plains, fewer than half a dozen scalplocks are drawn in Late Prehistoric–period rock art (Keyser and Klassen

2001; Keyser 2006b), but they are much more frequent in Historic-period rock art and robe and ledger art, where they are one of the most common hairstyles (Afton et al. 1997; Bates et al. 2003; Berlo 1996; Conner and Conner 1971:figures 14, 18; Keyser 1977a:68, 71; 1996:36, 42; 2000; Keyser and Klassen 2001:197, 220, 240, 248, 252, 259, 266, 275; Keyser and Poetschat 2005:41, 98, 107, 2009:36).

At least seven other kinds of headgear are worn by multiple humans. The two most important are the bear's ears headdress and a distinctive "sun-ray" hairstyle composed of short lines coming out all around the head.

The bear's ears headdress (figures 3.1g, 3.4k), which is represented as a pair of short, round or squared ear-like knobs arising singly from each side at the top of a warrior's head, could represent either a pair of real bear's ears tied into the warrior's hair, or his own hair knotted and tied up on each side of the head to mimic this shape. In several Plains tribes, warriors who possessed bear power wore either real bear's ears or this knotted hair style (Ewers 1955b; Mails 1973:352–354; Rockwell 1991:101), and this headdress is worn in rock art by shield-bearing warriors and a few other humans across the northwestern Plains (Francis 2007:219; Keyser 2004a:112; Mulloy 1958:126, 130).

The sun-ray hairstyle (figures 3.1o, 3.12d) at Bear Gulch represents dishevelled hair used frequently in later Plains Indian art to represent women (Greer and Keyser 2008; Horse Capture et al. 1993:85; McCleary 2008b:141–142, 248). In every Bear Gulch example it is associated with a human figure identifiable as female by the depiction of breasts and hips and/or a vulva.

Several other hairstyles drawn much less frequently at these sites are similar to later Historic-period examples. These include very long hair (sometimes combined with an upswept forehead pompadour), and hair extensions shown either as a hairnet-like attachment or dots painted along the length of a warrior's flowing tresses.

FEATHER BUSTLES

Feather bustles are drawn as a central line with multiple short lines branching from it, representing a cord or leather strip to which multiple feathers are attached. Such bustles embellish five freestanding shields and 185 shield-bearing warriors (figures 3.1, 3.3–3.5). Bustles are drawn either as single-sided examples with feathers attached only to the lower side of the main stem, or double-sided bustles that have feathers extending from both sides. One particular single-sided example (figure 3.13c) obviously represents a stiffened, erected buffalo bull's tail with feathers suspended below it, since it has exactly the same configuration as the erected tail (e.g., figure 3.8a) seen on early Historic-period Mandan shields (Thomas and Ronnefeldt 1976:212, 217).

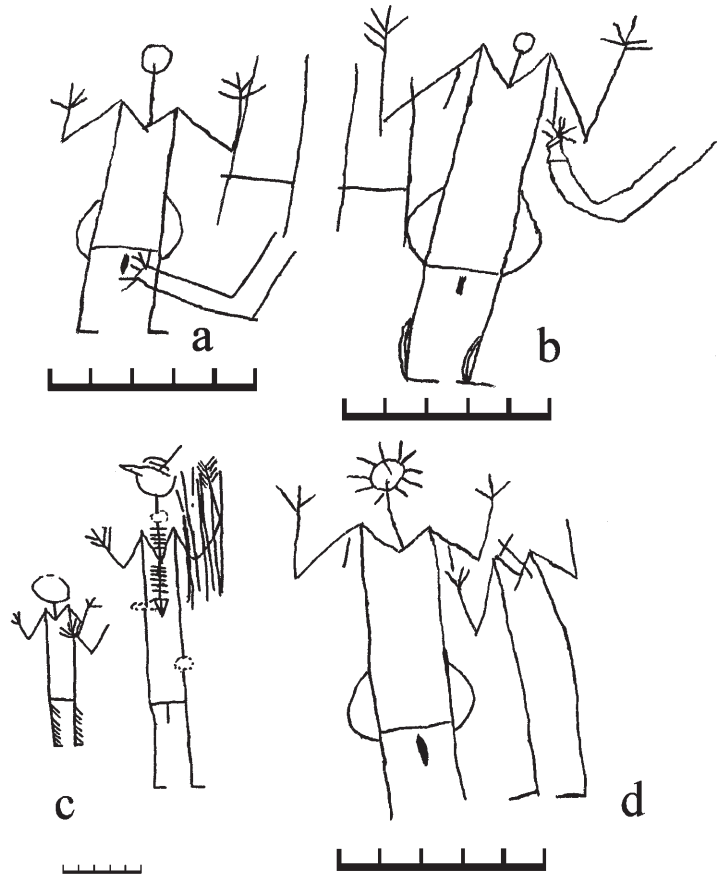

Figure 3.12. *The disembodied capture hand is a specialized convention used to show the taking of war trophies and war captives in Biographic art. Note women in a, b, and d. Scale bars are 5 cm.*

Feather bustles were a common accoutrement among Historic Indian tribes from the Southwest to the upper Missouri (Flint and Flint 2005:191; Thomas and Ronnefeldt 1976:212, 217) and were often illustrated on decorated robes and war shirts (Keyser and Brady 1993:figure 1; Maurer 1992:186; Taylor 1998:63). Rock art examples are much less common, occurring at only two other sites (Gebhard et al. 1987:figure 20; Keyser and Poetschat 2009:14, 37), but the Castle Gardens example (figure 3.11) also appears to be an erected buffalo-bull's tail.

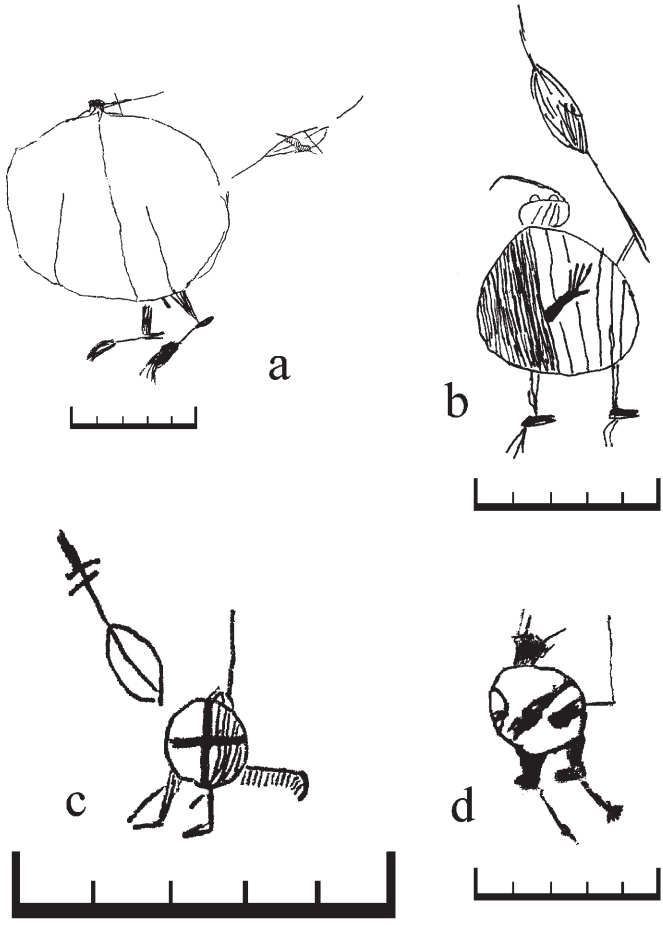

Figure 3.13. *Streamers, probably made from animal tails or other parts, are worn by these Bear Gulch shield-bearing warriors at the heels of their moccasins (a, b, d) and at their knees (c). Note erect buffalo-bull tail bustle on c and Hand of God shield design on b. Scale bars are 5 cm.*

Although sometimes illustrated as hanging from near a man's waist (Catlin 1973 [1844]:figures 223, 289; Keyser and Poetschat 2009:14), all Bear Gulch and Atherton Canyon examples are attached directly to a shield, as was more frequently illustrated (figure 3.8a, b) by Catlin (1973 [1844]:figures 172, 287; C. Taylor 2001:10) and Bodmer (Thomas and Ronnefeldt 1976:217).

FACE PAINT

Just more than 100 humans (including 88 shield-bearing warriors) at these two sites wear nine repeated face paint or tattoo designs (figure 3.11). All are simple geometric line patterns carefully drawn across the head, or sections of the head filled in solidly with pigment or scratches. The most common show the warrior's head decorated with a series of deliberately spaced vertical lines or bisected by a vertical line, but other warriors wear a cross centered on the head (figure 3.11a) or have half their head (either vertical or horizontal) solidly colored (figure 3.11 d–f). All of these patterns are duplicated in both ledger and robe art (Berlo 1996; Taylor 1994:191; 1998:13, 48–49, 62; Maurer 1992:191, 195), but face paint is not commonly illustrated elsewhere in rock art. Among other known Plains shield-bearing warriors only 16 have facial lines that might be paint or tattoos and only the tear-streak motif (figure 3.11g)—repeated on seven different warriors—is found multiple times (Keyser 2006b).

ANIMAL-SKIN MEDICINE BUNDLES

There are 24 personal medicine bundles (figures 3.3d; 3.4a, o; 3.14a, d) illustrated at Bear Gulch and Atherton Canyon, including the skins of 17 small weasel- to fox-sized animals, five fox or wolf pelts slung over a warrior's shoulder, and two bird bundles, one tied in a warrior's hair and another attached to a spear. Most small-animal-skin bundles are attached to a warrior's shield, but one is suspended from the waist of a rectangular-body human and another is freestanding.

Pelts worn by shield-bearing warriors sometimes obscure the warrior's head, and one clearly arches up overhead and extends behind (figure 3.14a). But given the well-documented and characteristic lack of Western perspective in Plains-warrior art (Ewers 1968:8–13), these were clearly intended to show animal skins slung over the shoulder as they were worn in Historic times (Keyser 2007a:65; 2008a:67–68). One bird bundle (figure 3.14d) tied in a shield-bearer's hair is an elongated, cigar shape with short stubby wings and a short line extending further back with small "knots" tied in it. This bundle is paired with the warrior's hawk-beak mask and face paint indicated by a solidly scratched lower half of his face.

Medicine bundles and animal pelts are only rarely illustrated in other rock art (Keyser 2008a:64; Keyser and Klassen 2001:71; 2003; Keyser and Poetschat 2008:43, 62), but bird bundles worn in a warrior's hair and fox or wolf pelts are quite common in robe art and ledger art (Barbeau 1960:147, figure 99; Bates et al. 2003:290–295, 301; Berlo 1996:93, 103, 114, 166, 208–209, 215; Brownstone 1993:19; Horse Capture et al. 1993:103; Keyser 2004a:69–71,

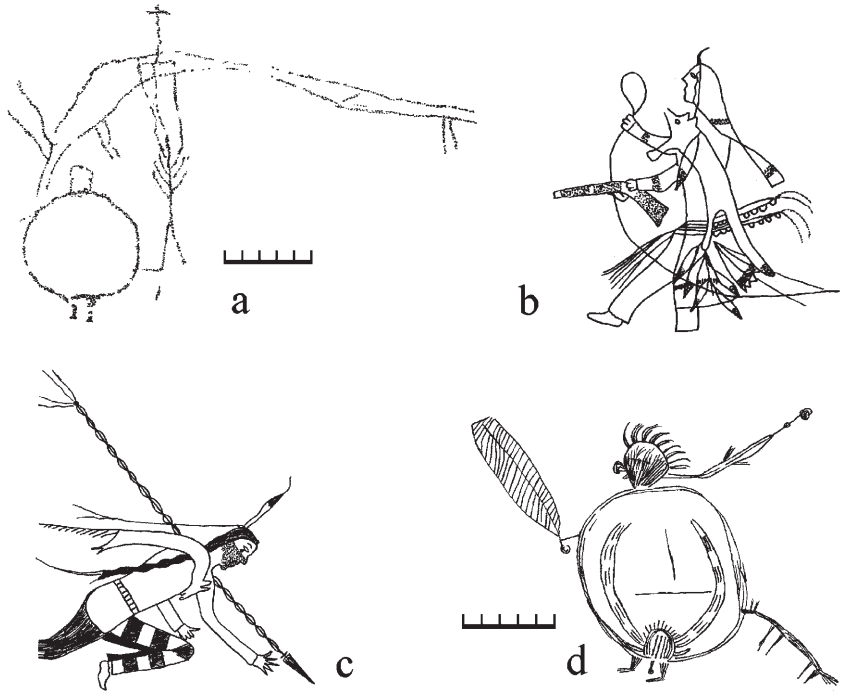

Figure 3.14. *Medicine bundles and animal-skin pelts are worn by more than a dozen Bear Gulch–style shield-bearing warriors. Note pelt overhead on a, animal bundle attached to shield of d, and bird bundle tied in hair and bird-beak mask on head of d. Both b and c are ledger drawings showing wolf pelts worn over a warrior's shoulder. Scale bars are 5 cm.*

117; Keyser and Klassen 2003:13–15; Maurer 1992:194–195; Miles and Lovett 1994:51–52; Taylor 1998:62–63).

moccasin tails

Fifteen shield-bearing warriors wear streamers attached to the heel of both moccasins. Extending out to the side or straight down from the heel, these range from simple straight lines, to fan-like groups of two or three straight lines, to long lines with a knot tied near each end (figure 3.13a, b, d). Similar but unelaborated pendant streamers are also illustrated hanging at an oblique angle from one or both knees of six other shield-bearing warriors (figure 3.13c). Such streamers attached to a warrior's moccasins or to garter belts at his knees are commonly portrayed in robe and ledger art (Afton et al. 1997:66–67; Berlo 1996:78–79, 85, 98, 149, 153, 155, 169, 175, 183, 197, 221; Stirling

1938:27–33; Thomas and Ronnefeldt 1976:221) and they are shown in rock art at Writing-on-Stone and Joliet (Keyser 2004a:100; 2008b:63, 68; Keyser and Klassen 2001:22, 230).

Weapon Decorations

Rock art weapons at Bear Gulch and Atherton Canyon are often elaborately decorated (table 3.1), primarily with feather flags, but also with smaller feather or hair "fluffs" and elaborate tabs or tassels.

FEATHER FLAGS AND FLUFFS

Almost 370 lances and a single bow-spear are embellished with a distinctive feather flag in one of four basic patterns: oval, maple leaf, spade, and split spade in order of frequency (Fossati et al. 2010). Attached to the forward third of a spear's wooden shaft between the point and handgrip, these flags (figures 3.1, 3.4, 3.11, 3.13) are often augmented with a small "fluff" drawn as a more-or-less matched set of short, upward-pointing, oblique lines placed on each side of the spear shaft in a "point down" chevron design. Many fluffs are found just below the feather flag, but others occur just behind the spear point. They could represent the downy barbs commonly found on the quill at the base of the feather's vane, smaller eagle plumes like those attached at the base or tips of eagle feathers that were used in Historic-period headdresses and other ritual items, or decorations of stiffened animal hair.

Frequently the flag itself is further decorated with various combinations of vertical or horizontal lines and solid colored areas drawn within its outline. A limited set of decorative patterns common to all types of flags suggests that these symbolically indicated the performance of different sorts of brave deeds and/or the attainment of special status or position within a military hierarchy (Fossati et al. 2010).

Oval flags are far more common than any other, making up just more than 70 percent of all recorded examples (Fossati et al. 2010). All flag types decorate the weapons of shield-bearing warriors and other humans, and a few also elaborate freestanding spears. Elsewhere in Plains rock art similar weapon flags are uncommon, though more than half a dozen oval and spade flags are drawn at Writing-on-Stone (Keyser 1977a:figure 14b; 1977b:31, 44, 49; Keyser and Klassen 2001:199, 229, 247) and single examples are carved at other sites in Montana and Wyoming (Fredlund 1991:4; Fossati et al. 2010; Keyser and Klassen 2001:246).

Bodmer illustrated somewhat similar feather flags and hair fluffs attached to the butt end of Mandan warriors' spears (Thomas and Ronnefeldt 1976:172,

212, 217), but nothing similar is drawn in robe or ledger art. Feather or hair fluffs also adorn each of the four drawings of a single bow-spear in the elaborate Bear Gulch coup-count tally (figure 3.10). Positioned on the bow stave both above and below the handgrip, these fluffs are paired with longer streamers in two instances. Similar decorative elements are common on most robe and ledger art bow-spears (Keyser 2008b).

TABS

Roughly triangular tabs or tassels, drawn most commonly as a cluster of two to six short lines, but also shown as a clearly triangular attachment, adorn the ends of 27 weapons, including maces, clubs, a knife, a lance, and three bow-spears (figures 3.5e, f; 3.10a, b). One distinctly triangular tab on the lower end of a bow-spear also has a pendant feather. These items represent either clusters of feathers, streamer tassels, or quilled or beaded pennants hanging from the bottoms of these weapons. Similar decorative elements (figure 3.15) are commonly illustrated on various rock art weapons (Keyser 1977a:76; 2008b:66; 2008c:3–4; 2010:89; Keyser and Cowdrey 2008:28–30; Keyser and Klassen 2001:225, 229, 236; McCleary 2008b:265–266; Parsons 1987:260) and frequently adorn hatchets (figure 3.16) and bow-spears in robe and ledger drawings (Barbeau 1960:148, 170, 171; Brownstone 2001b:80; Greene 2006:83; Keyser 2008b:64; Keyser and Cowdrey 2008:29). Beaded tabs are common on ethnographic specimens and in Historic photographs where they hang from hatchets and pipe stems (C. Taylor 1994:77, 200; 2001:8).

Battle Compositions and Tactics

In several cases Late Prehistoric and Protohistoric warriors at Bear Gulch and Atherton Canyon are arranged in compositions that tell us a great deal about how pre-horse/pre-gun warfare was conducted and how it was viewed by participants. Foremost among these compositions are at least 19 instances where groups of 5 to 14 warriors occur in a horizontally oriented row or phalanx of men posed as if marching off to war or standing ready for battle (figures 3.3, 3.6). Most ranks are exclusively shield-bearing warriors, but four rows also include one or more other combatants. Likewise each phalanx contains several individuals who appear to have been drawn by the same hand, suggesting that most of these compositions are the work of single artists. Individual warriors in rank often wear quite elaborate headdresses and other regalia, including moccasin tails and bustles, and carry highly detailed weapons and decorated shields. A few ranks, identified by superimposition sequences as the earliest

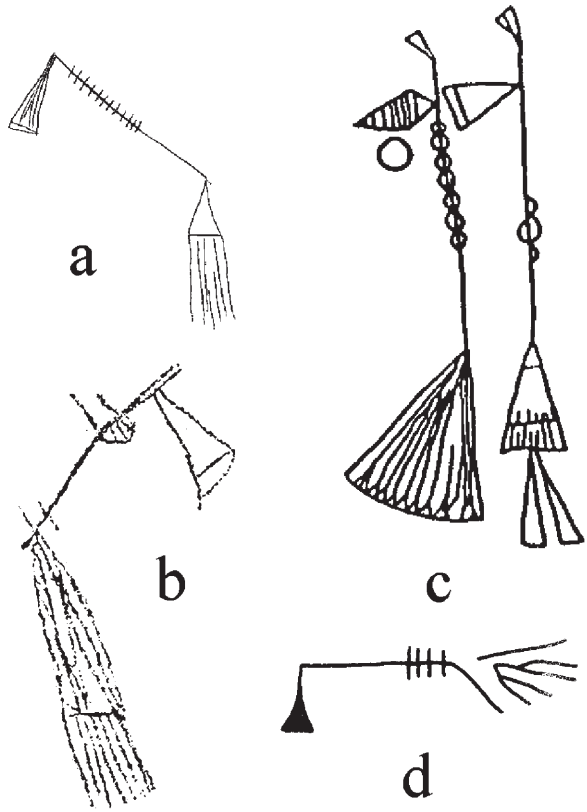

Figure 3.15. *Tabs and tassels are commonly drawn in Historic-period rock art, especially decorating tomahawks. (a, d) Writing-on-Stone; (b) McKee Spring; (c) Nordstrom-Bowen.*

examples of the Bear Gulch style, are composed exclusively of warriors with solid-colored shields and almost identical arms and accoutrements, but most ranks are composed of warriors whose shields have elaborate heraldic designs and who carry various weapons. In one rank of 12 shield bearers and two other men, nine warriors carry plain shields, two men have decorated shields, and one carries a solid shield.

Despite the fact that many of these compositions appear to be drawings by single artists, in nine instances obvious ranks of warriors have been modified by later artists who superimposed from one to seven of the original figures with a second shield-bearing warrior drawn directly over the original image,

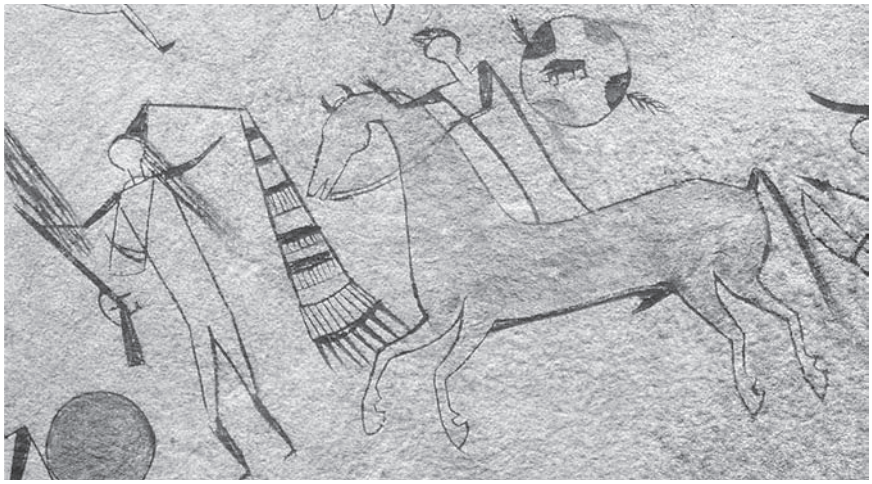

Figure 3.16. *This extremely complex tab decorating the handle of a tomahawk shown counting coup is illustrated on a bison robe in the Deutsches Ledermuseum, Offenbach, Germany. Photograph by the author.*

using the existing figure as a template (figure 3.17). Such carefully crafted superimpositions are termed "direct conjoined overlays" (Kaiser and Keyser 2008). The most complex of these shows an original rank of nine painted solid and decorated variety shield-bearing warriors that was later modified by an artist(s) who scratched directly conjoined shield figures on at least seven of the original warriors (figure 3.6c). Another complex composition shows a later rank of warriors superimposed on an original phalanx and clearly related to it by a three-part conjoined overlay (Keyser et al. 2012). In some cases (e.g., figure 3.6d, e) it appears that a later artist also added warriors to the original composition (sometimes to accompany the direct conjoined overlay). Often these are smaller warriors placed on the periphery of the original group.

Thus, the Bear Gulch and Atherton Canyon artists obviously intended to show groups of men prepared for—or actually marching off to—war; and such depictions were drawn during both the Late Prehistoric and Protohistoric periods. That these ranks of warriors were a crucially important motif is documented by the careful effort often expended to reuse them through the means of direct conjoined overlays and added warriors.

Notably rare among these shield-bearing warriors, however, are scenes of combat showing two or more warriors actually fighting one another. Among the more than 1,000 shield-bearing warriors, only 17 pairs of opposing figures

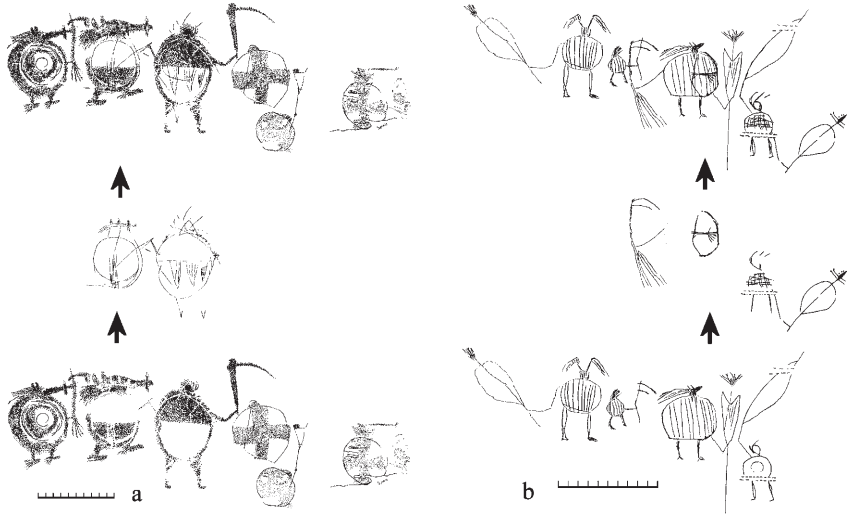

Figure 3.17. *Ranks of shield-bearing warriors often show multiple examples of direct conjoined overlays, indicating reuse of the specific imagery. At Bear Gulch (a), two warriors (middle) are conjoined on an original group of six (bottom row); top row shows rank of warriors as it appears today. At Atherton Canyon (b), two warriors (middle) are conjoined on original group of four warriors (bottom row); top row shows rank of warriors as it appears today. Note that the light gray lines in b indicate parts of the original figure incorporated into the overlaid figure. Scale bars are 10 cm.*

and one pair of warriors fighting a third enemy are engaged in what might represent hand-to-hand combat (figure 3.18). This is less than 4 percent of the total shield bearers at the site. Furthermore, several of these combat "scenes" are drawn in such an extremely sketchy manner (e.g., warriors lacking shield heraldry and using the simplest of weapons) that they appear almost as an afterthought, unlike the carefully detailed ranks of standing warriors that characterize these sites (e.g., figure 3.18d, f, g).

In contrast to the relative paucity of shield-bearing warriors fighting each other, however, Bear Gulch V-neck warriors show at least five identifiable combat compositions (four of which are quite detailed), involving 10 of the 33 humans. Thus, more than 30 percent of V-neck figures are illustrated in the act of fighting.

Likewise, among all Bear Gulch–style shield-bearing warriors only two are shown with floating weapons counting coup on them, and 25 more are wounded by an arrow. In contrast, there are more than a dozen examples of

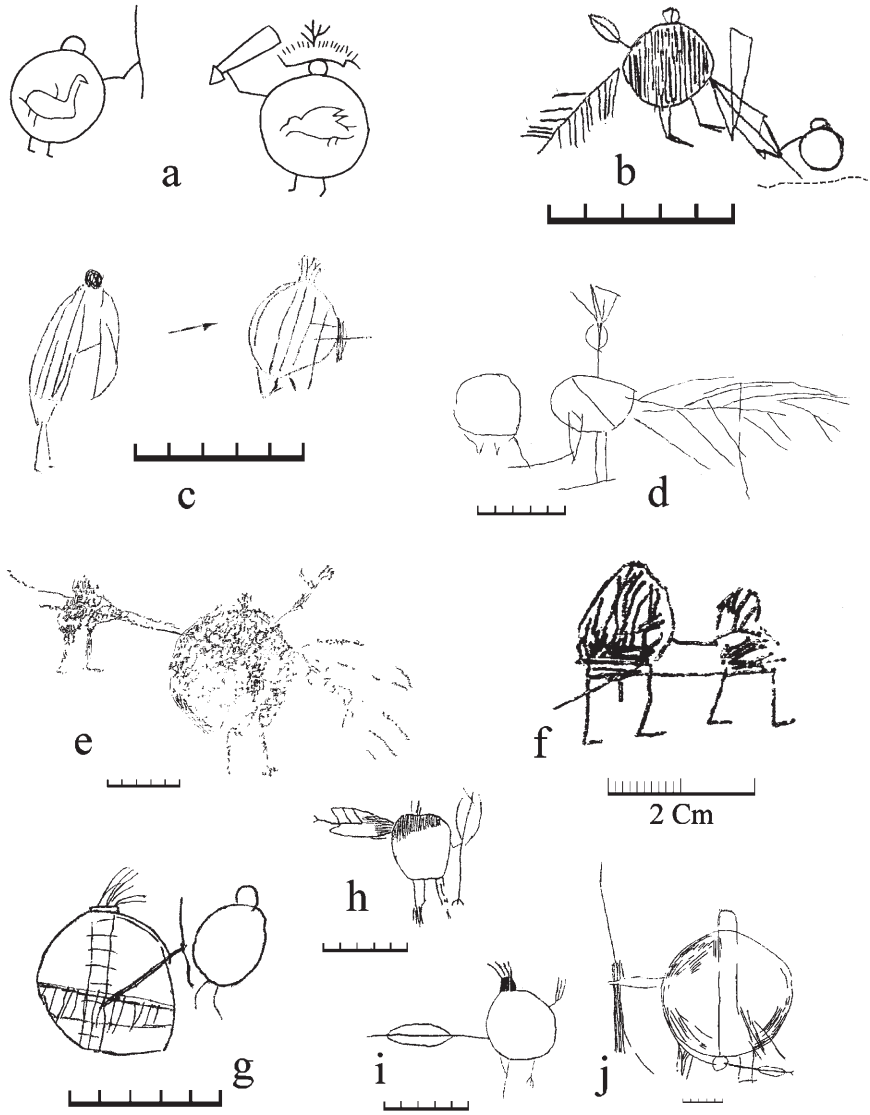

Figure 3.18. *Evidence of conflict in Late Prehistoric–period rock art includes occasional combat scenes (a–g) and warriors wounded with arrows (e, h–j). (a) Writing-on-Stone; (b, d–f, h–j) Bear Gulch; (c, g) Atherton Canyon. Note how sketchy appearance of scenes d, f, and g, and the floating bow counting coup on the larger shield-bearing warrior in e. Scale bars represent 5 cm except f.*

this convention involving other types of Protohistoric-period warriors at these sites. These include three unique shield-bearing warriors and three V-neck humans in a coup-count lineup. In addition, capture hands[8] touch three other V-neck figures. In all, more than 60 percent of V-neck humans are engaged in individual fighting actions, while fewer than 5 percent of shield-bearing warriors give any indication of individual combat.

Instead, shield-bearing warriors are illustrated as corporate groups, and when the artists wanted to show their destruction they sometimes defaced these figures using "rub outs" created by scratching so heavily across the original figure that it is all but obliterated. More than two dozen shield-bearing warriors and a row of several other Late Prehistoric–period humans are rubbed out in this manner. While some rub outs may have been scratched by later Historic-period artists not responsible for the original Bear Gulch–style figures, others almost certainly were done by Bear Gulch–style artists. Whether this signified victory over enemies or the loss of one's own military comrades cannot be determined.

Strategy, Tactics, and Motives

Given the weaponry and battle compositions documented in the Late Prehistoric/Protohistoric–period rock art imagery at Bear Gulch and Atherton Canyon, what does this imagery tell us about strategy and tactics used by these warriors and the possible motives that caused them to fight? In fact, we can infer some specific details about the use of certain weapons and the function of particular examples, and also the warriors' psychological motivation for warfare.

the efficacy of precontact weaponry

From the types of weapons that dominate Bear Gulch and Atherton Canyon rock art and those carried by shield-bearing warriors at other northwestern Plains sites (see Keyser 2006b), it is clear that precontact warfare was fought primarily at close quarters with "brute force" implements. Bows and arrows, which strike an enemy from a relatively safe distance, were used by fewer than 6 percent of the armed Bear Gulch–style shield-bearing warriors; and only an additional 25 examples (fewer than 3% of the more than 1,000 individuals) have enemy arrows sticking in them. Interestingly, these percentages are about the same for shield-bearing warriors at all other published northwestern Plains sites, where 8 of 180 (4.4%) of the armed, Late Prehistoric shield-bearers use bows and arrows (Keyser 2006b), and only 7 (2%) of all shield bearers are shot with arrows. Instead, throughout the northern Plains, armed shield-bearing warriors

Table 3.2. Weaponry for Plains Shield-Bearing Warriors

Weapon	*Bear Gulch and Atherton Canyon*		*Other Northwestern Plains Sites**	
Bow/Arrow	38	4%	8	3%
Spear	441	43%	79	26%
Bow-spear	2	< 1%	5	2%
Spike mace	82	8%	29	10%
Club	71	7%	20	7%
Other	9	1%	44	15%
None	385	38%	113	38%
Total warriors†	1,024	100%	300	100%

* Data taken from *Keyser (2006b)*.

† Columns numbers do not total warriors because a few individuals are armed with multiple weapons.

overwhelmingly favored lances, clubs, and spike maces (table 3.2) for warfare;[9] all weapons that required killing and combat to be at no more than arm's length.

Furthermore, two of these weapons—clubs and maces—would have been truly effective only when used to disarm an opponent and beat him to death with multiple blows. Imagine the mayhem caused by wielding the equivalent of a baseball bat or an axe handle studded with one or two 10–15 cm (4–6 in) long antler spikes. But spike maces may have had an even broader function. Larry Loendorf (2009) has suggested that these weapons could also have served to hook an opponent's shield and pull it away from his body so that other warriors would have had a better opportunity for a close-quarters kill. In either case, killing like this would have been face to face; up close and personal.

The fact that so many Bear Gulch–style lances are tipped with what appear to be some of the earliest metal blades in Plains rock art (Keyser and Kaiser 2010) is also suggestive of close-quarters combat. Given the hand-to-hand warfare suggested by clubs and maces, a lancer armed only with a spear tipped with a several-inch-long, very fragile chipped-stone point would have been at a distinct disadvantage against a club-wielding opponent who could parry a thrust and shatter the killing point with one well-placed blow. Conversely, metal points are certainly less fragile and are more likely to have remained intact even after multiple thrusts and parries. Hence, they must have been seen as extremely more potent and more valuable weapons, and thus were quickly adopted.

Some limited evidence suggests that bow-spears may be an exception to the brute force nature of these battles. Carried by one Bear Gulch–style shield-bearing warrior and shown in use counting coup in the Blackfoot-style

coup-count tally, these weapons are decorated very similarly to the most elaborate of their Historic-period counterparts (Keyser 2008b), and tipped with long lethal metal points. However, of the four bow-spears shown counting coup, only one strikes a blow (touching the enemy's headdress) that could possibly have been immediately fatal, and even this may not have caused a fatal wound. Others hit the shield of one warrior and the legs of another, and a third bow-spear arches above two female captives.

Such non-lethal blows, and the symbolism showing captives under control of this powerful weapon, are exactly the same for bow-spears depicted in ledger art, where they rarely strike a fatal blow but instead record a counted coup or are shown being brandished to exercise their power. This is also consistent with ethnographic reports where special "thunder bow" bow-spears were not used to kill enemies, but rather to count coup by striking the foe with the flat of the lance point and to magically strike at or control enemies from a distance (Grinnell 1972:Vol. 2:83–84; Keyser 2008b:62; Powell 2002a:63–68; 2002b:56–57). In short, it appears that the bow-spear in the coup-count tally was portrayed more as a magically imbued weapon used to count coup and control enemies than a close-quarters killing tool.

Finally, many warrior artists obviously took great care to elaborate their weapon, far beyond any functional necessity. Lances and bow-spears are adorned with a feather flag and/or eagle plume or animal-hair fluffs; bow-spears have a tab or tassel at the proximal end; and clubs and maces sometimes have a tab or streamers attached to their handle end, and the barrel is carved or painted with lines and geometric elements. The only purposes such things could have served were as decoration, personal aggrandizement, or possibly the infusion of the weapon with supernatural power. In none of these cases do these elements improve the weapon's function, but they do show a high value placed on such elaborations by their owners.

THE PSYCHOLOGY OF PRECONTACT WARFARE

V-neck warriors at Bear Gulch, which are dated within the same Late Prehistoric and Protohistoric timespan as the Bear Gulch–style shield-bearing warriors (Keyser et al. 2011, 2012), provide even more detailed information about how at least one precontact group viewed warfare. Apparently drawn by early Blackfeet intruders into this area of central Montana (Keyser 2006a:71; 2011; Keyser et al. 2012),[10] these particular V-neck warriors are in compositions that typically show direct hand-to-hand combat and emphasize counting of several different coups. Involving the fewer than 30 Blackfoot-style V-neck warriors at the site are at least 16 different coup-count episodes, including

multiple instances of hand-to-hand combat, braving an opponent's fusillade of fire, touching (but not killing) an enemy, revenge killing, and capturing enemy women and children (Greer and Keyser 2008:94–95; Keyser 2006a, 2011; Keyser et al. 2012). Another shield taken by a capture hand documents the capture of war booty in the same part of the site as most of these combat scenes, but unfortunately this image cannot be securely associated with nearby Protohistoric-period Blackfoot-style petroglyphs, and may instead be a later Historic-period coup count.

Likewise, six V-neck war captives, including four women, a prepubescent female, and one child, indicate that women and children were "fair game" in the Protohistoric period, exactly as they were in Historic-period warfare. Possibly more important, however, these figures suggest that even at such an early date women and children were a commodity worth capturing, either for the slave trade or to bear children that would replace warriors fallen in battle. While these practices are well documented in the Historic record (Keyser et al. 2006) and inferred for Protohistoric times (Lewis 1942:49), this is the first rock art demonstration that they commonly existed in precontact warfare.

Finally, one coup-count tally, identified as a Blackfoot artist's drawing (Keyser 2006a:71; 2008a:71; 2011), shows several obvious coups, including touching of enemies, revenge killing, and capture of women (figure 3.10). Dated to the pre-horse/pre-gun Protohistoric period, the image is a striking demonstration that the concept of coup counting and advertisement of such honors at sacred sites existed in pre-horse Plains warfare.

With this marked emphasis on coup counting by V-neck warriors, we can infer that deeds of bravery similar to those central to Historic Plains warfare (Grinnell 1910) were also a key element of Late Prehistoric and/or Protohistoric-period warfare—at least to the Montana Blackfeet. Similarly, other evidence also suggests that war honors were the basis for warfare actions undertaken by the artists responsible for drawing Bear Gulch–style imagery. In Historic-period Plains cultures, moccasin tails are so strongly associated with the performance of specific deeds of bravery (Lowie 1956:217; Mallery 1972:436; Thomas and Ronnefeldt 1976:251) that it seems almost certain that those illustrated at Bear Gulch are similarly honorific. But not just moccasin tails support the assertion that a system of ranked war honors was in place on the central Montana plains prior to the horse. Elsewhere, Keyser (Fossati et al. 2010:119–121) has argued that the various forms and relative proportions of different weapon flags "represent various earned honors such as the accomplishment of specific deeds of bravery in warfare or the attainment of 'officer' positions within a pan-tribal military organization" (Fossati et al. 2010:120).

In addition, a strong case has been made that wolf-hat headdresses and animal pelts worn by several warriors likely represent attainment of the honorific "scout" position, as did similar wolf symbolism in Historic times (Keyser 2007a:67–68; 2008a:67–68).

In addition to counting coup (as evidenced by the above-described imagery and insignia), precontact Plains warfare also apparently had a strong supernatural component. Several heraldic designs common on Bear Gulch–style shields suggest that in addition to their defensive utility, shields also played an important psychological role in offensive warfare. Two repeated Bear Gulch shield designs show a bear painted so that it appears to be coming out of the shield to directly confront the owner's enemy (Keyser 2004b; Kaiser et al. 2010; Keyser and Kaiser 2014). These designs are quite similar to Historic-period heraldry used by several tribes for exactly such psychological "shock" value (Keyser 2004b). Likewise, designs incorporating eyes and teeth, and another with a human arm and hand reaching out from a darkened half of the shield, have also been interpreted as representing supernatural power in a way that was intended to frighten or confuse an attacking enemy (Keyser and Kaiser 2014; Schaafsma 2000:113).

Other items, such as medicine bundles and bustles also provide an indication of the supernatural basis for precontact Plains warfare. In Historic times, medicine bundles were derived from visionary imagery in which a spirit helper instructed the supplicant to acquire protective amulets. The presence of such bundles at both Bear Gulch and Atherton Canyon is strong indication that one major premise of precontact warfare was that a man was better off with supernatural assistance. Likewise, Prince Maximilian noted that many warriors wore "an appendage of feathers, intended to represent the [buffalo] bull's tail, hanging down their backs" (Thomas and Ronnefeldt 1976:202). These bustles, along with the erected buffalo-bull tail bustles incorporated as part of the shield were widely understood to symbolize a buffalo bull's aggressive behavior (Maurer 1992:125),[11] something that a warrior would be only too happy to embody and advertise.

A TRANSITION FROM CORPORATE COMBAT TO INDIVIDUAL HONORS

Viewing the phalanxes at Bear Gulch and Atherton Canyon as fighting units, a few observations can be made about the structure of combat-ready groups in the Late Prehistoric–period culture responsible for drawing Bear Gulch–style shield-bearing warriors. Chronologically, the earliest phalanxes (and related single warriors) favored the bow and arrow as the weapon of choice and a solidly colored, otherwise undecorated, shield for protection. A

warrior's headdress was uniformly a tasseled scalplock or a roach. Another phalanx of similar size and age, shows a slight change in preferred weaponry to very long spike maces and lances, but the warriors' shields remain undecorated, shown as plain circles without either pigment or scratches for infilling. Headdresses are tasseled scalplocks, roaches, or bison-horn bonnets.

Then, very rapidly over the course of a few generations (150–200 years), phalanxes diversified markedly. In this period, each phalanx is typified by a variety of shield designs, several different weapons (often with unique weapon flags for decoration), and multiple types of headdresses. Among the warriors composing these groups bows are very rarely the preferred weapon.

What this tentatively suggests for the ethnic group drawing these figures is a transition from a fighting unit with a more corporate identity (limited shield designs, weapon types, and headdress styles) in which individuals intentionally did not stand out, to a fighting unit more obviously composed of individuals, where many (if not all) of the participants were readily identifiable. This change, combined with the more close-up and personal nature of combat (as indicated by shortened spike maces and clubs, and lances with large killing points), implies an increased emphasis on personal deeds and individual self-aggrandizement. What we appear to be seeing in this transition is the beginning of the Historic-period focus on the accomplishment of individual war honors.

CHANGING WARFARE PATTERNS ON THE NORTHWESTERN PLAINS

So what do Plains rock art warfare compositions indicate about the origin and evolution of the Plains warfare complex? To address this, one must first summarize the model of Plains warfare as reconstructed from ethnohistoric, ethnographic, and historic sources and then compare and contrast that to the first-person rock art record of Plains warfare to evaluate how closely the two correspond.

Fortunately, we have one good ethnohistoric account that provides a reasonable sketch of Protohistoric-period warfare (and even a glimpse of precontact warfare actions), at least through the eyes of one man, Sahkomaupee, an aged Cree living with the Blackfeet in 1787 (Lewis 1942:46–52; Secoy 1992:34–37). Several other early accounts provide additional sketchy data about warfare immediately after the earliest contacts with Euroamericans (e.g., Lewis 1942:45, 50, 54–55; Loendorf and Porsche 1985:80–85). Then the later Historic-period warfare complex is so widely described and well known (e.g., Grinnell 1910; McGinnis 1990; Mishkin 1940; Smith 1938) that it became a cultural icon

by the turn of the twentieth century with "Wild West" shows, "dime novels," and paintings by Russell and Remington, and it has been celebrated ever since in books, art, movies, and television.

The only detailed account of how northwestern Plains war was fought before the widespread use of horses and guns is the one Sahkomaupee provided when he told David Thompson in 1787 about how and why warfare was conducted during his young adulthood (Lewis 1942; Secoy 1992; Thompson 1962). Summarizing Sahkomaupee's lengthy account, Secoy described pre-horse/pre-gun warfare as:

> taking two forms. Both put a premium on numerical strength. The first one, usually preferred, was for a large war party [sometimes as large as several hundred warriors] to locate a small, isolated enemy camp . . . and make a surprise attack at dawn, slaughtering the inhabitants. The second was used when the enemy was too vigilant to allow a successful surprise attack [because their scouts were out patrolling], or when both sides were nearly equal in numbers. . . . Under these conditions the battle was drawn between two opposing lines of infantry, armed with bows, spears, clubs, and very large leather shields, the men separated by about three-foot intervals [but not all warriors had shields and sometimes two men sheltered behind a single shield]. The battle began when the lines had advanced to a point within archery range of each other, at which time the warriors, protecting themselves with their shields, sat on the ground and subjected the opposing line to archery fire for a varying period. The next stage of the battle arrived when one side decided to substitute shock for fire. A chief would then lead the . . . charge. . . . The ensuing hand-to-hand struggle would usually be brief and bloody, and the issue quickly decided. The defeated side would either flee in a complete rout and be hotly pursued by the enemy warriors until the latter halted to struggle among themselves for loot, trophies, and scalps, or, if the defeat were not so severe they [the defeated party] would retreat in a fair state of organization, maintaining the line formation and carrying off their dead and wounded. (Secoy 1992:34, summarizing Sahkomaupee's account in Tyrell 1916)

Hidatsa oral history shows the corporate nature of such warfare. Describing a battle that took place about AD 1740, when there were a few horses but no guns, Bear's Arm told of separate ranks of shield bearers and bowmen working together to assault an enemy group taking refuge atop a butte:

> The men with shields were told to go ahead and all the others would follow closely behind them in a compact group. Each man, using his bow and arrows,

> was supported by a shield carrier who walked in front to deflect the [enemy] arrows with his shield, thus protecting the man in back of him. (Bowers 1965:351, as summarized by Loendorf and Porsche 1985:81)

As author of one of the most specific discussions of Plains warfare history, Lewis has combined Sahkomaupee's account with other historic sources to provide a slightly more in-depth model. Lewis argues that pre-horse-period warfare was largely a corporate action involving hierarchically organized military forces fighting to expand and/or defend hunting territory and capture women, whose importance was "to strengthen the tribe, both by their own numbers and as child bearers" (Lewis 1942:49). Various bits of ethnohistoric evidence from several sources further suggest that truly effective fighting during pre-horse times was at close quarters with shock troopers' weapons, and effort was focused primarily on amassing superior forces to overrun and annihilate small, band-level enemy villages (Lewis 1942:52; McGinnis 1990:4, 6; Secoy 1992:34). Otherwise, battles between relatively equally matched groups were apparently hours-long "standoff-type" conflicts where few were wounded and warriors were rarely killed. Nevertheless, in this system, coups were, in fact, counted, women were captured, and multiple casualties occasionally occurred. However, usually this happened only when the victorious force was able to rout the other, due either to their numerical superiority, or—as these new, game-changing "weapons" arrived in the region—the presence of the horse or gun (Lewis 1942:47–48; Secoy 1992:36–37).

Following the initial introduction of horses, when a few became available to warriors, these animals afforded equestrian groups a distinct advantage. Combined with leather armor and military tactics diffused from the Spanish Southwest, horses were first heavily armored and typically used somewhat like "tanks" to crash through enemy defenses and rout opposing pedestrian forces (Secoy 1992:36–37). Sahkomaupee reported that "the Snake Indians . . . had *Misstutim* (Big Dogs, that is Horses) on which they rode, swift as the Deer, on which they dashed at the [Piegans], and with their stone Pukamoggan knocked them on the head, and they [the Piegans] had thus lost several of their best men" (Secoy 1992:36).

In a few years, however, the arrival of guns obviated the horse's advantage as a tank, but the rapidly expanding horse herds increased the animals' value for nearly every aspect of everyday life, from baggage hauling to hunting and warfare, and the increased supply of horses changed warfare into a series of quick-hitting surprise attacks and horse raids that relied primarily on stealth and light cavalry tactics. This sort of warfare was undertaken not by a large

force led by a war chief and his various officers, whose intent was to smash an enemy village or opposing military force, but instead by a highly motivated individual who handpicked a small cadre of accomplished warriors and kinsmen to accompany him in his personal quest to steal horses and acquire war honors; for it was these horses and coups that embodied a man's wealth and gave him status (Lewis 1942:53–59; McGinnis 1990). This horse-and-gun warfare has been described in intimate historical detail (McGinnis 1990; Mishkin 1940; Smith 1938), often including first-person recollections of famous warriors who fought both in well-documented battles and in hundreds of other, nearly anonymous, horse raids (Ewers 1985:171–215; Linderman 1962; Miles and Lovett 1994, 1995).

So, how does the rock art record correspond to this ethnohistoric/ethnographic reconstruction? The topic has been previously addressed, albeit with a much more limited data set that included only the then newly recorded imagery from Writing-on-Stone and Verdigris Coulee (Keyser 1979). Keyser (1979:44–48) originally suggested that Plains rock art compositions illustrated a notable change in both strategy and tactics from Prehistoric- to Historic-period Plains Indian warfare. He contrasted the paucity of individual combat scenes in Late Prehistoric–period rock art to the commonly depicted scenes of individual actions that characterize Historic-period rock art, and suggested that the rock art showed that prehistoric warfare was primarily a large group activity conducted by shock troops whose motives were essentially economic (the acquisition and protection of hunting territory), while Historic Plains warfare focused instead on the individual and his actions—termed coups—which were done primarily for purposes of self-aggrandizement and subsequently recorded as rock art to validate a warrior's status.[12] As part of his argument Keyser (1979:45) asserted that "no example of a Prehistoric period combat or battle scene explicitly depicts a warrior counting coup or acquiring any war honor," and in the next paragraph he indicated that the same was true in Writing-on-Stone's few Protohistoric-period scenes.

More than three decades later we have considerably more information, and we can modify parts of those conclusions, confirm some, and augment others. Initially, recording and study of dozens more rock art sites from Canada to Texas (e.g., Conner 1980; Keyser 1984, 2006a, 2010; Keyser and Klassen 2001; Klassen 1995; Parsons 1987) has identified many more Protohistoric-period images so that we now have large samples from all three periods for comparison to one another and to the ethnohistoric record. Furthermore, comparison of these and other rock art images to Biographic art drawn on robes, war shirts, and in ledger books (e.g., Brownstone 1993, 2001a, 2001b; Keyser 1987a, 1996, 2000; Keyser

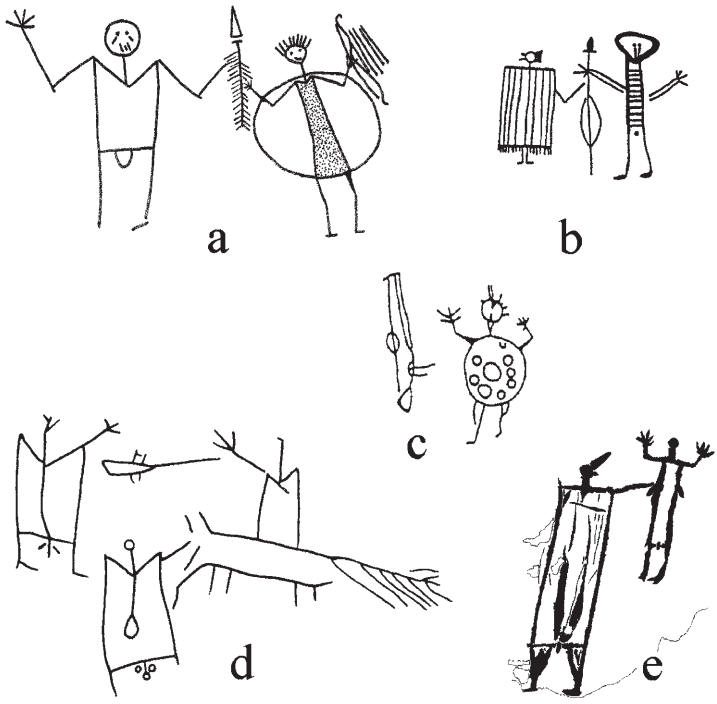

Figure 3.19. *Prehistoric- (e) and Protohistoric-period (a–d) coup counts occur occasionally in Plains rock art: (a–d) weapon capture; (e) capture of woman. (a) Ellison's Rock; (b) Red Canyon; (c, d) Verdigris Coulee; (e) No Water. Note tear streaks decorating faces in a and b.*

and Brady 1993; Keyser and Klassen 2001, 2003; Petersen 1971) has led to the recognition of readily identifiable coup counts in Protohistoric-period rock art (Keyser 2006a; 2010:92, 96–98; Keyser and Klassen 2001:224–253; Keyser and Poetschat 2005:137–155; 2009:83–84; Klassen 1998:55–57) and also even a few in Late Prehistoric–period imagery (Keyser 2006a; Keyser and Poetschat 2009:84). Though illustrated in a typically more static, less fluid style than later Historic-period images, these Late Prehistoric/Protohistoric–period coup counts (e.g., figure 3.19) show a variety of Biographic conventions, including weapon capture, loser's posture, the capture hand, floating weapons, capture of women, and the fusillade of fire that are among the most common in the Biographic art lexicon (Keyser 1987a, 2006a, 2010; Keyser and Poetschat 2005:153; 2009:84). These scenes prove unequivocally that coups were counted and documented in

precontact warfare, even though fighting was primarily conducted with shock troops who fought in close-quarters combat with clubs and maces and protected themselves with oversized buffalo-hide shields and, later, their mounts with leather horse armor. This evidence for coup counting corresponds well to Sahkomaupee's description of the aftermath of one such rout:

> The War Chief . . . rushed on their line and in an instant the whole of us followed him, the greater part of the enemy took to flight. . . . Part of us pursued and killed a few, but the chase had soon to be given over, for at the body of every Snake Indian killed, there were five or six of us trying to get his scalp, or part of his clothing, his weapons, or something as a trophy of the battle. (Secoy 1992:37)

What do rock art warfare compositions indicate about the size of precontact war parties and whether these actually became smaller through time? Late Prehistoric–period rock art warfare compositions are usually war parties portrayed as ranks of five to more than a dozen warriors (table 3.3). In several examples these men are shown fighting as interacting groups of four to seven combatants (figure 3.20). Certainly there are instances where two men square off one-on-one (e.g., figure 3.18), but these individual combat scenes are proportionately far less common in both Late Prehistoric– and Protohistoric-period imagery than they are in Historic-period rock art (table 3.4).

But do illustrated rock art forces document the actual sizes of the fighting forces in these battles? This seems unlikely since Plains Biographic rock art is renowned for its use of synecdoche, where a drawing of a single weapon or person or a part of a person or horse can stand for multiple actual persons or animals. Thus, a hoofprint may stand for a horse, a human footprint for a warrior, a tipi for a village, or a group of stacked freestanding weapons for a force of combatants (Fredlund 1990; Keyser 1977a:70; 2000:38, 50–52; 2005:35). Likewise, in such a system, a group of horses, weapons, or even humans often indicates the relative size of the force in a fight rather than an actual count of participants. Essentially, then, a structured group of things often simply indicates the concept of "many."

However, given the continuity of structure, context, and content demonstrated for Plains Indian warrior art from the Late Prehistoric, Protohistoric, and Historic periods (Keyser 1987a, 1996, 2000; Keyser and Klassen 2001; Keyser and Poetschat 2005:137–169; Klassen 1995, 1998; Magne and Klassen 1991), we can compare the relative size of forces depicted at various times as an indicator of relative war party size (table 3.3). Across the northwestern Plains, almost exactly one-third of Late Prehistoric–period warfare compositions include five or more warriors. Nearly half of the ranks of Late

Table 3.3. Combat Scenes and Ranks of Warriors

		*Combat Scenes**										*Ranks†*									
Location		*1 vs. 0*	*2+ vs. 0*	*1 vs. 1*	*1 vs. 2*	*1 vs. 3+*	*2 vs. 2*	*2 vs. 3+*	*3 vs. 3*	*3 vs. 4+*	*4 vs. 4+*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10+*	*Total*
Writing-on-Stone	LPP	—	—	2	—	—	1	—	—	—	2	1	2	—	1	—	—	—	—	—	9
	PP	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	HP	6	1	16	2	—	1	—	—	1	2	—	—	—	—	—	—	—	—	—	29
Verdigris	LPP	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	PP	—	—	1	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3
	HP	1	—	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Atherton Canyon	LPP	—	—	2	—	—	—	—	—	—	—	4	—	2	—	3	1	—	—	—	12
	PP	—	—	—	—	—	—	—	—	—	—	2	—	—	1	—	—	—	—	—	3
	HP	3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Bear Gulch	LPP	—	—	17	1	—	—	—	—	—	—	9	4	3	2	4	—	4	2	3	49
	PP	—	—	—	1	—	—	—	—	—	—	2	3	3	—	—	—	—	1	1	13
	HP	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Green River Basin	LPP	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	2
	PP	—	—	—	—	—	1	—	1	2	—	—	—	—	—	—	—	—	—	—	6
	HP	6	1	1	—	2	—	1	—	—	2	—	—	—	—	—	—	—	—	—	13

continued on next page

Table 3.3—*continued*

Location		*Combat Scenes**										*Ranks†*									
		1 vs. 0	*2+ vs. 0*	*1 vs. 1*	*1 vs. 2*	*1 vs. 3+*	*2 vs. 2*	*2 vs. 3+*	*3 vs. 3*	*3 vs. 4+*	*4 vs. 4+*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10+*	*Total*
No Water	LPP	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	HP	—	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
North Cave Hills	LPP	—	—	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	3
	PP	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	HP	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4
Williams CouleeTurner Rockshelter	LPP	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
	HP	—	—	5	1	—	1	3	—	—	—	—	—	—	—	—	—	—	—	—	10

LPP = Late Prehistoric period, PP = Protohistoric period, HP = Historic period

* Numbers in Combat Scenes columns indicate size of opposing forces. 1 vs. 0 and 2+ vs. 0 indicates warriors stealing horses, capturing war trophies, counting coup on tipi or fortification, or similar action.

† Numbers atop Ranks columns indicate number of warriors in phalanx

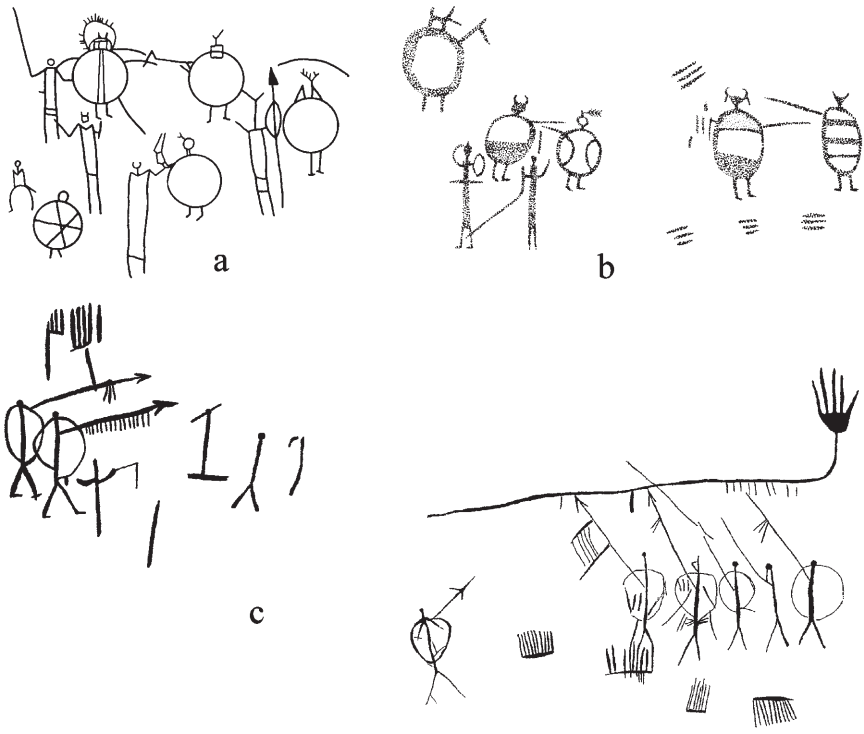

Figure 3.20. *Shield-bearing warriors are more often shown fighting in larger groups with an apparent corporate structure, in contrast to Historic-period combat compositions: (a) Writing-on-Stone; (b) Williams Coulee; (c) Gateway.*

Prehistoric–period warriors obviously prepared for battle at Bear Gulch and Atherton Canyon include five to 14 men (table 3.3); all equipped more or less the same. Several other northwestern Plains sites show similar size forces (Keyser 1977a:69; 1979:43; Keyser and Klassen 2001:238–240; Keyser and Poetschat 2005:115, 147; Schuster 1987:32). In addition, when actually shown fighting, these larger forces are bunched together and appear to be interacting as organized opposing groups (figure 3.20). Direct combat between two Late Prehistoric–period individuals (figure 3.18; see also Keyser 1977a:68, figure 13a) is shown far less frequently than in Historic-period rock art.

As depicted in rock art, Protohistoric-period warfare is very similar to that from the Late Prehistoric period (table 3.3). Across the northwestern Plains about one-third of Protohistoric-period warfare scenes involve five or more

men, and at Bear Gulch and Atherton Canyon these are often ranks of warriors drawn as if awaiting combat. Protohistoric-period combat at other sites includes smaller fights involving only two or three men (Keyser 1977a:69, 1984:49; Keyser and Poetschat 2005:126–127) and larger ones showing groups with as many as three or four combatants on each side (figure 3.21). In the post-horse Protohistoric period these fights often include horsemen, and there seem to be more examples of hand-to-hand combat between pairs of warriors (e.g., Keyser 1977a:64, 68; 2010:89, 92; Keyser and Poetschat 2005:141–151).

Historic-period warfare is markedly different. By far the great majority of warriors—70 percent of the 70 warfare scenes—show a single warrior either fighting a single enemy, stealing horses, taking a weapon, or counting coup on a structure (figure 3.22, table 3.3). Considering the size of specific fighting forces, the trend is even more notable, with more than 93 percent of Historic-period imagery showing single warriors or war parties of two to four combatants, compared to only 77 percent of Late Prehistoric/Protohistoric–period forces with that few people (table 3.4). Thus, while the two biggest battle scenes—one involving more than 100 people at DgOv–81 at Writing-on-Stone (Keyser 1977a:70; 2004a:84–85) and the other showing 26 combatants at La Barge Bluffs (Keyser and Poetschat 2005:36)—are far larger than any other rock art compositions, they are a distinct anomaly in all Plains rock art combat images.[13] But synecdoche rules even these large scenes, since the fight reportedly portrayed by DgOv-81 actually involved hundreds of warriors and resulted in more than 300 reported casualties (Dempsey 2007:29; Keyser and Klassen 2001:254–256).

Therefore, acknowledging the significantly synecdochical character of Plains warrior art we can understand that many if not most of these warfare images represent more warriors than are portrayed. But the fact that there is such a greater proportion of Late Prehistoric/Protohistoric–period scenes composed of relatively large groups of warriors (table 3.4) indicates that war parties in Prehistoric times were, in fact, actually significantly larger than those common in Historic times, at least as portrayed in rock art. This fits well with what we know from Sahkomaupee's report and the many other sources for late Historic-period warfare. This is also consistent with the existence of bastioned fortifications designed to withstand massed attacks that dominate the Late Prehistoric/Protohistoric–period Missouri River villages (Bamforth, chapter 1, this volume).

The earliest northwestern Plains rock art horses, usually drawn as boat-form animals (Dewdney 1964; Keyser 1977a:34; Keyser and Poetschat 2009; Keyser and Klassen 2001:19; Keyser et al. 2005), also tell us quite a bit about Protohistoric-period warfare and enable us to evaluate how well it corresponds to the ethnohistoric model. Found in very limited numbers throughout the

Table 3.4. Relative Size of Individual Forces in Rock Art Warfare Scenes*

	Period											
	Late Prehistoric Period				*Protohistoric Period*				*Historic Period*			
Warriors	*1*	*2–4*	*5–10*	*11+*	*1*	*2–4*	*5–10*	*11+*	*1*	*2–4*	*5–10*	*11+*
Writing-on-Stone	4	5	5		2	1			39	8	2	2
Verdigris	2				3	3			8	1		
No Water	2								7	1		
North Cave Hills	4		1			2			8			
Williams Coulee		2										
Green River Basin		3	1		4	6	2		10	5	3	1
Turner Rockshelter									11	8	1	
Bear Gulch	35	17	12	3	1	9	4	1	1			
Atherton Canyon	4	6	4			2	1		3	1		
Total	51	33	23	3	10	23	7	1	87	24	6	3
Percentage	47%	30%	21%	3%	24%	56%	17%	2%	73%	20%	5%	3%

* *N* in table heading = number of warriors per combat force; *N* in table columns = number of opposing forces illustrated. Each opposing force entered separately.

region (Greer et al. 2010; Keyser 1977a; 1984:49; Keyser et al. 2005), these early rock art horses frequently wear protective leather armor and are often shown in combat with pedestrian shield-bearing warriors (Greer et al. 2010; Keyser 1977a:69; 1984:49; Keyser and Poetschat 2005:126–127; Keyser et al. 2005). These animals are illustrated, however, not racing into or out of combat—with rider leaning forward, quirting his mount, and reaching out to strike an enemy, as is typical of Historic-period horse-warfare scenes (figure 3.22h)—but instead typically as one to three animals with their riders often carrying shields (or sometimes wearing their own body armor), and somewhat ponderously engaging pedestrian opponents. The visual effect of these compositions is to show the horse as a sort of armored tank whose superiority in such shock-troop warfare is evident in several compositions by the ineffectual spears or arrows attacking but not killing the animal (occasionally arrows are stuck in the armor), the relatively exaggerated size of the horses themselves, or the clearly illustrated

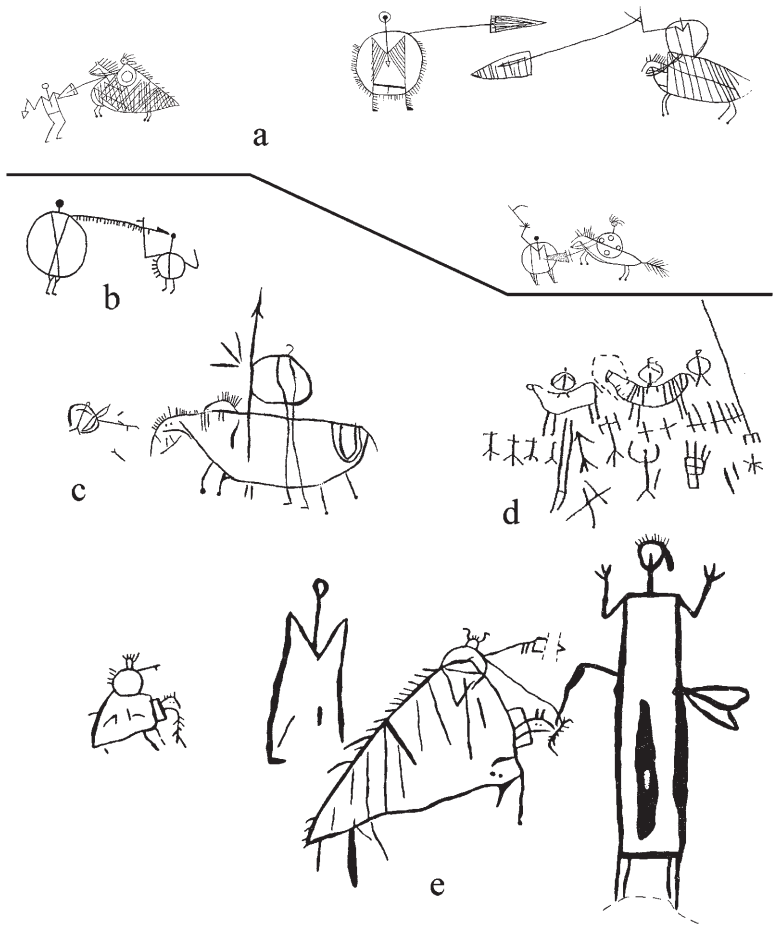

Figure 3.21. *Protohistoric-period combat includes both corporate group type compositions (a, d, e) and individual fights (b, c): (a) Verdigris Coulee; (b) Writing-on-Stone; (c, d) South Piney; (e) North Cave Hills. Note armored horses in a and e, and boat-form horses in a, c, and d.*

loser's posture of several pedestrian opponents (Greer et al. 2010). In fact, in the nine known Protohistoric-period equestrian combat scenes only three show the pedestrian warrior(s) as winning or even holding their own, and two of these also feature the armor or rider's shield warding off an otherwise fatal wound (Greer et al. 2010; McCleary 2008b:266). Likewise, there is no example that clearly shows a man having dismounted from one of these early horses

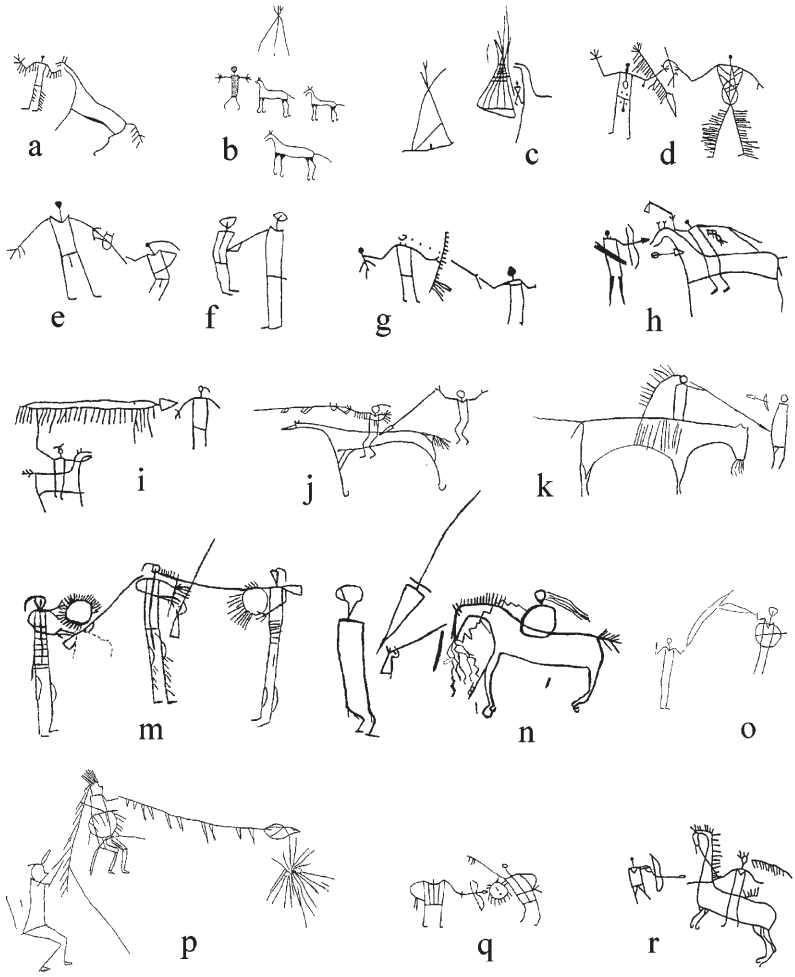

Figure 3.22. *Historic-period combat primarily focuses on individual's actions, especially (a–c) stealing horses, (f–k, n–r) counting coup, and (d, e, m, n) capturing weapons. a–c, e, f, h, i, q, Writing-on-Stone; d, g, r, Verdigris Coulee; j, Castle Butte; k, La Barge Bluffs; m, Pine Canyon; n, No Water; o, Recognition Rock; p, Names Hill.*

to forfeit his advantage specifically to increase the daring associated with the coup count, yet such images are quite common in Historic-period Biographic art (figure 3.23; see also Afton et al. 1997:124–125, 142–143, 188–189, 278–279; Keyser 1987a:68; 2004a:97).[14] In summary, Protohistoric-period warfare rock

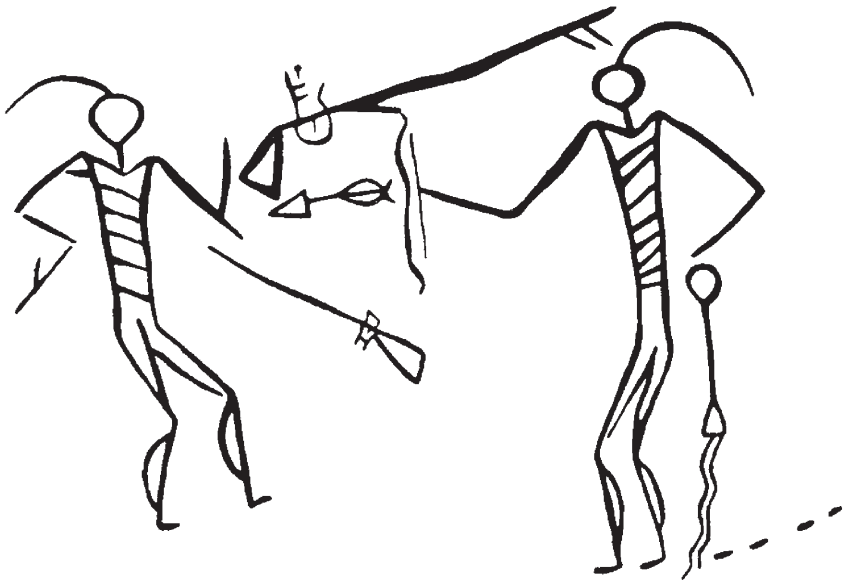

Figure 3.23. *This Historic-period combat scene at Castle Butte shows that the winning warrior at right has dismounted (note quirt and footsteps leading to fight) to forfeit the advantage provided by his horse.*

art adds significantly to our understanding of northwestern Plains warfare in the transitional period from pedestrian to fully equestrian conflict.

Finally, Historic-period rock art is replete with images showing individuals fighting, stealing horses, capturing war booty, and counting coup (Keyser 1977a:68, 73, 1987a, 2007b; Keyser and Poetschat 2005, 2009). Although the largest known rock art battle compositions occur in Historic-period imagery (Keyser 1977a:70; 2004a:84–85; Keyser and Klassen 2001:254–255; Keyser and Poetschat 2005:36, 90), the art is overwhelmingly dominated by illustrations of individual actions oriented toward earning war honors, with more than 93 percent of warfare scenes involving four or fewer combatants (table 3.4). This rock art correlates almost exactly with the warfare strategy and tactics so well documented in historic and ethnographic records.

CONCLUSIONS

Comparisons among Late Prehistoric–, Protohistoric-, and Historic-period rock art warfare illustrations show that these correspond quite closely to the

changing pattern of northern Plains warfare posited from the ethnohistoric and ethnographic record (Lewis 1942:46–59; McGinnis 1990:1–48; Secoy 1992:33–77). But rock art images also add significant information not available from ethnohistory. Bear Gulch and Atherton Canyon provide the richest record yet available for arms, accoutrements, and battle tactics from precontact times, and even highlight major psychological motives for how and why war was fought on the northern Plains of central Montana during the pre-horse/pre-gun Late Prehistoric and Protohistoric periods. With these incredibly detailed images as a basis, we finally have a first-person account of how and why war was fought during that time.

Data from Bear Gulch and Atherton Canyon, when combined with evidence from other sites across the region, provide both strong support and some corrections and elaborations for Sahkomaupee's account. In terms of weaponry, Sahkomaupee's and Bear's Arm's experiences reflect more bowmen—at least in Protohistoric-period conflict—than we see in rock art, and thus more archery action than is apparent from the data for all Plains shield-bearing warriors. This may reflect a real difference, or it may simply be due to rock art artists' desire to portray themselves with the weapons that put them in close contact with the enemy. It must be noted, however, that of the four known battle scenes in Late Prehistoric/Protohistoric–period rock art (figures 3.20b, 3.21e), only two show a single bowman each (Keyser and Klassen 2001:229, 240, 247). Correspondingly, we have no battle formations that show different ranks of shield carriers and bowmen without shields bringing up the rear, as was reported by Bear's Arm. The only indication we have of significant bow-and-arrow warfare is the one shield bearer in the Protohistoric-period coup-count tally who is facing 22 arrows. Whether this is an enemy killed by overwhelming firepower or the artist/author of this tally braving an enemy fusillade of fire, it clearly shows that some battles featured intensive bow-and-arrow fire.

Likewise, Sahkomaupee does not specifically mention spike maces even though they are quite common in the Late Prehistoric/Protohistoric–period imagery at many northwestern Plains sites, including Bear Gulch, Atherton Canyon, Writing-on-Stone, Verdigris Coulee, Pictograph Cave, the North Cave Hills, and Red Canyon (Francis and Loendorf 2002:149; Keyser 1977a:68, 69; 1984:32; 2004a:21; Keyser and Klassen 2001:196, 199, 246; Mulloy 1958:126). For this weapon it seems likely that Sahkomaupee simply included them in his reported "clubs."

Sahkomaupee's account also mentions scouts, taking scalps, capturing war trophies, and the fact that forces lined up in ranks often with some warriors

who fought without shields. If we consider the taking of scalps and war trophies in precontact warfare as equivalent to how these same acts were treated as coups in Historic times, it suggests that other coups were almost certainly also counted by Prehistoric/Protohistoric–period combatants. Hence, examples of all of Sahkomaupee's observations can be found in the rock art data.

But what of taking women and children as captives? Although Sahkomaupee was apparently silent on this subject, Secoy (1992:38) notes that at least as early as Protohistoric times, war captives quickly became a valuable trade commodity in the effort to obtain Euroamerican trade goods, and he cites several examples of large-scale capture of women and children on the eastern margins of the Plains in the 1600s (Secoy 1992:41). The occurrence of several capture scenes at Bear Gulch, coupled with the fact that by the late 1700s northwestern Plains tribes were regularly capturing women and children to replace fallen warriors and to augment groups hard hit by early smallpox epidemics (Ewers 1997:194; Keyser et al. 2006:65), strongly suggests that war captives must also have been important in precontact warfare.

Rock art data also provide significant information about the spiritual aspects of warfare that was not reported by Sahkomaupee. By reference to Historic Plains Indian cultural practices, we can make some particularly detailed conclusions about Late Prehistoric/Protohistoric-period warfare. For instance, shield heraldry includes both anthropomorphic and zoomorphic symbolism and compositional structures like those prevalent on Historic-period shields. By using analogy, we discover that these indicate that warriors routinely obtained strong supernatural power to assist them in their warfare actions. Furthermore, the structure of several heraldic designs suggests that in part they were emblazoned on their shields specifically for the shock value of frightening enemies. Finally, supernatural power was also embodied in medicine bundles, various headdresses, and even feather bustles that symbolized aggressive behavior as a warrior's desired quality. These are all directly analogous to similar items used in Historic times.

Thus, the rock art record confirms and expands Sahkomaupee's observations of many aspects of Late Prehistoric/Protohistoric-period warfare. Finally, if one carefully considers rock art warfare compositions and their structure in light of the synecdoche characteristic of Plains Indian warrior art, it is clear that the rock art data do, indeed, indicate larger military forces in Late Prehistoric times, followed by a transition to smaller war parties in the Historic period.

So what light does this shed on the likely motivations for warriors in various periods of Plains warfare? Historic-period Biographic art images are primarily concerned with recording an individual's actual personal honors—achieved

in horse raids and combat defending one's own herds from enemies. One-on-one fights where the protagonist touches or kills his enemy or takes his weapon or another war trophy are more than half again as common in Historic-period rock art as in the combined Late Prehistoric/Protohistoric-period imagery (tables 3.3, 3.4). In contrast, Late Prehistoric and many Protohistoric-period warfare-related scenes are better characterized as corporate images, where cooperating groups of warriors are shown in a battle-ready state, and when they are fighting it is as a more or less organized group. This is exactly the difference illustrated between Sahkomaupee's report of Protohistoric-period fighting and the fighting that is so well documented in most Historic-period warfare. Of course Sahkomaupee reports that group cohesion broke down on both sides during a routed enemy's disorganized retreat, and ultimately—as the Protohistoric-period scenes of V-neck humans at Bear Gulch so strongly attest—warriors were out to earn honors by taking scalps and war trophies. However, it was not until the horse provided a ready source of a relatively easily captured commodity, and a mechanism for increasing the fluidity of war parties and their effective range of influence, that small-scale, personal actions became paramount in Plains warfare illustrations.

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NOTES

1. See Keyser et al. (2012) for a discussion of how elements, motifs, and images differ and how this affects comparison of tabulated imagery between sites. In this regard, the same relative size ranking would be true if we tallied images or motifs for Bear Gulch and Atherton Canyon versus other large Plains sites or site complexes. It should also be noted that Bear Gulch is spatially smaller—and Atherton Canyon only modestly

larger—than DgOv-2, by far the largest individual site in the Writing-on-Stone site complex. In summary, by any measure both Bear Gulch and Atherton Canyon are as large and complex as any other concentration of northwestern Plains rock art.

2. For imagery to compare to the Bear Gulch/Atherton Canyon shield-bearing warriors, I originally used a database of shield-bearing warriors that (as of 2006) included all known published shield-bearing warrior images. Throughout the chapter, when making comparative statements, it is this sample of warriors to which I am referring. Certainly, there are many other shield bearers known at rock art sites across the region that were not yet published when this chapter was written, but these could not be considered here because they were unavailable to me. A shield-bearing warrior compendium, completed long after this chapter was finalized, has since been published (Keyser and Poetschat 2014) and contains data on more than 600 northern Plains shield-bearing warriors at sites other than Bear Gulch and Atherton Canyon. This was the entire sample of this motif—published and unpublished—known at the time of publication. Superficial comparison of the results reported here with the data in that compendium shows no significant discrepancies between the sample used from the 2006 database and that in the compendium.

3. Throughout this discussion I use Secoy's (1992) warfare patterns since his is still the best summary of how the expanding frontiers of European firearms and horses influenced Plains warfare.

4. Elsewhere on the northern Plains, bows are also rarely depicted as the shield-bearing warrior's weapon of choice. Possibly this is due to the difficulty of using a bow while burdened with the large shield, but the number of early Bear Gulch–style bowmen at Bear Gulch indicates that for some engagements it predominated. The number of bowmen at Bear Gulch and Atherton Canyon who do not carry shields is also quite small (15 of the 208 humans other than shield bearers). While this percentage is not quite double the number of shield bearers who are bowmen, 6 of the 15 other humans with bows are shown in hunting scenes. Hence, the number of bowmen who are shown as warriors is almost exactly the same among both shield bearers and other humans.

5. The same drawing of this weapon is erroneously identified as a goad in another publication on Bodmer's art (Thomas and Ronnefeldt 1976:60), but that identification was not made with access to the actual artifact in Bodmer's collection. The form of this piece unequivocally indicates that it was a war club.

6. Since publication of that 2008 article the bow-spear painted at the sixth site in Big Coulee, Montana, has been called to my attention (Keyser et al. 2012:123).

7. "Hand of God" is used here not to imply that Plains Indians had a monotheistic view of a single personified God. However, this depiction is undeniably a human arm and hand. Elsewhere, Keyser and Kaiser (2014) suggest that the being whose hand and arm is represented may be something similar to Long Arm, a popular mythological

being who "lives in the sky, where you cannot get at him; but he can hurt you, for his arm is so long that it reaches from the heavens to the earth" (Matthews 1877:69). Versions of Long Arm are found among the Mandan, Hidatsa, Lakota, and Crow, and long arms, apparently interceding from the heavens to the world of mortals are drawn at several northern Plains rock art sites.

8. The capture hand is a Plains Biographic art convention used to show several things including touching an enemy to count coup and capturing an enemy woman or a war trophy (Keyser and Poetschat 2012:40–44).

9. See note 2.

10. The V-neck warriors at Bear Gulch and Atherton Canyon have been identified as belonging to a Blackfoot style of this image based on extensive analysis of both rock art and early painted bison robes and war shirts (Brownstone 2001a; Keyser 2006a, 2011; Keyser et al. 2012:233–237, 349–350). Characteristic size and shape (including the occasional V-neck hourglass body shape), features such as heartlines and kidneys, types of associated figures, and characteristic accoutrements (such as weapons and ceremonial feather fans) are the basis on which such an identification is made. Certainly there are other V-neck figures in Plains rock art that are the product of other tribal artists.

11. Maurer (1992:125) actually notes that the buffalo bull's urination, which is shown on several Crow shields, is "an observed detail of natural behavior that is associated with mating, aggression, and the marking of territory." It must be noted, however, that the posture of an aggressive buffalo bull also always shows a raised tail (Maurer 1992:125–126, 248), and thus, this attribute is equally indicative of the bull's aggressive attitude.

12. Certainly some of the motive was economic (e.g., the capture of horses), but the point made in the 1979 article is worth making again—that is, if the primary motive for Historic-period Plains warfare were economic, it would make no sense to rank stealing a picketed horse from in front of an enemy's tipi higher than running off his entire herd, nor would touching an enemy be ranked higher than killing him.

13. It should be noted that this analysis does not consider Biographic tally compositions from any period. Such tallies found in both the Protohistoric and Historic periods contain from 10 to more than 100 human figures and/or weapons.

14. Keyser (2010:96) has suggested, based on the relative sizes of the shields, that one Writing-on-Stone scene shows such a pedestrian fight between one warrior equipped with a large, pedestrian-sized shield and a second unmounted equestrian combatant, who carries a smaller shield, but unlike many Historic-period art scenes there is no indication (e.g., quirt, footprints leading to the fight, a horse standing by) that the motivation of the warrior with the smaller, post-horse-period shield was to forfeit his equestrian advantage. Very likely, he simply was engaged in this combat in the absence of his horse.