



KIVA

Journal of Southwestern Anthropology and History

ISSN: 0023-1940 (Print) 2051-6177 (Online) Journal homepage: <https://www.tandfonline.com/loi/ykiv20>

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To cite this article: Christopher Hernandez (2019): Battle Lines of the North American Southwest: An Inquiry Into Prehispanic and Post-Contact Pueblo Tactics of War, KIVA, DOI: [10.1080/00231940.2019.1684004](https://doi.org/10.1080/00231940.2019.1684004)

To link to this article: <https://doi.org/10.1080/00231940.2019.1684004>



Published online: 13 Nov 2019.



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# Battle Lines of the North American Southwest: An Inquiry Into Prehispanic and Post-Contact Pueblo Tactics of War

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This paper examines multiple lines of evidence to argue Ancestral Pueblo peoples engaged in pitched battle and thereby challenges the common view that warfare in the North American Southwest primarily took the form of raiding. Although various tactics likely coexisted in the martial repertoire of Prehispanic peoples, I highlight that raiding has generally been overemphasized by Southwestern archaeologists. After critically reflecting on how scholars interpret tactics, the bulk of this manuscript is devoted to examining evidence of battle among Prehispanic and post-Contact Pueblo peoples. I argue the earliest solid evidence of battle tactics dates to around AD 1300 and possibly as early as AD 1200. I develop a case for a shift in tactics tied to changes in weaponry along with groups aggregating for protection and the resulting spatial needs of large communities.

Este trabajo examina múltiples líneas de evidencia para argumentar que las comunidades ancestrales de los pueblos practicaban batalla campal y de esa manera, cuestiono el punto de vista común que la guerra en el sudoeste de Norte América principalmente tomó la forma de *raid*. Aunque varias tácticas probablemente coexistieron en el repertorio marcial de los pueblos prehispanicos, destaco que *raid* generalmente ha sido enfatizado demasiadamente por los arqueólogos del sudoeste. Después de reflexionar críticamente sobre cómo los investigadores interpretan tácticas, la mayor parte de este manuscrito se dedica a examinar evidencia acerca de la práctica de batalla entre los pueblos prehispanicos y después del contacto con los españoles. Sostengo que la primera evidencia sólida de tácticas de batalla data alrededor del año 1300 d.C. o posiblemente en el siglo anterior (1200 d.C.). Desarrollo un caso para un cambio en tácticas que está vinculado a modificaciones en el armamento junto con el proceso de agrupación para protección y las resultantes necesidades espaciales de grandes comunidades.



**KEYWORDS** Warfare, Battle, Raiding, Tactics, Practice, Weaponry, Shields, Ancestral Pueblo

Therefore, if I wish to do battle, even though the enemy is within a high fortress encircled by a deep moat, he cannot but do battle with me because I attack where he must come to the rescue. If I do not wish to do battle, though I do no more than draw a line on the ground and defend behind it, the enemy cannot do battle with me because I have taken a position contrary to where he wishes to go. [Sunzi (aka Sun Tzu) 2007:97]

My aim in this paper is to examine how Ancestral Pueblo peoples engaged in combat. In so doing, I critically reflect on how Southwestern archaeologists characterize martial activity. Raiding is the tactic most commonly discussed by scholars of the Prehispanic North American Southwest (e.g. Cameron 2016; Haas and Creamer 1993; LeBlanc 1999; Lekson 2002; McGuire and Villalpando 2015; Schaafsma 2000; Snead 2008; Wilcox and Haas 1994). However, I highlight raiding is a complex phenomenon that requires greater conceptualization on the part of researchers and may be unduly emphasized over other forms of martial practice, such as battle and siege tactics.

In order to substantiate the claim for an overemphasis on raiding, I draw from ethnohistoric, iconographic, ethnographic, and archaeological data to develop a case for the existence of a long-term pattern of battle among Ancestral Pueblo peoples that can be traced back to around AD 1300, possibly as early as AD 1200

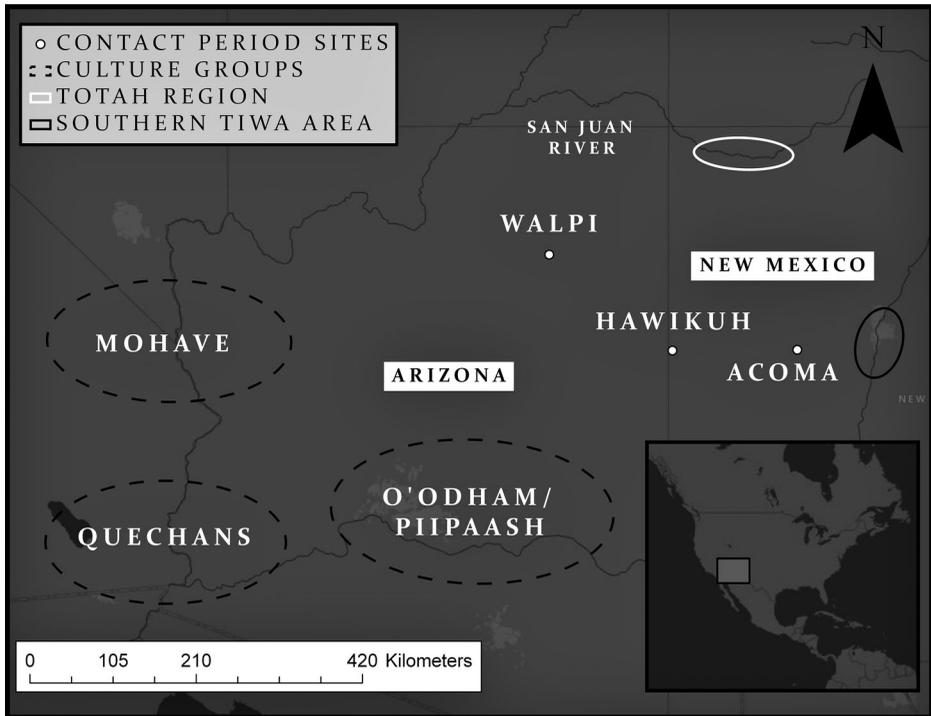


FIGURE 1. Map of major sites and areas discussed in this article. Map by Christopher Hernandez.

(Figure 1). Although evidence of site burning and skeletal trauma exist from earlier periods in the North American Southwest (Billman 2008; Harrod 2012; Kuckelman 2016; LeBlanc 1999; Nichols and Crown 2008; Turner and Turner 1999), I discuss challenges in distinguishing tactics via osteological data or settlement destruction. The major issue is a lack of an established conceptual framework (i.e. middle-range theory) that adequately connects patterns in skeletal trauma or site destruction with the tactics of battle, raiding, or other forms of combat that might have been practiced by peoples of the North American Southwest. I define battle as martial combat that entails the use of warriors massed on terrain outside settlements of Ancestral Pueblo peoples and descendant communities. Building from LeBlanc (1999:111), I argue Prehispanic combat among Ancestral Pueblo peoples could have taken the form of pitched battle. Pitched battle entails the arrangement of warriors into groups that move with some form of cohesion. Thus, beyond the level of a general melee, where at the start of a martial engagement any semblance of group cohesion gives way to individual initiative, warriors in pitched battle attempt to maintain formations during advances and subsequent exchanges of force. I define siege as any process of surrounding or isolating a settlement (pueblo) through martial force. Lastly, raids are here defined as quick attacks not meant to capture and hold territory. One key to a successful raid is surprise (e.g. Clausewitz 1976 [1832]; Hassig 1992; Keeley 1996). For example, the goal of most Yanomamö

raids was to ambush a member of the opposing group while they were outside a village compound (Redmond 1994). Once a person from an opposing village had been killed, raiders tend to exit enemy territory quickly because the aggressors knew they were at risk for counterattack. Although, it should be noted that some raids could result in heavy losses, as well as the annihilation of a target population and their settlement(s) (Cameron 2016; Keeley 1996; Redmond 1994). My definitions serve as tools to develop ideas on warfare in the Southwest; they are not meant to be comprehensive.

To examine tactics employed by Ancestral Pueblo peoples, I provide original Spanish accounts of martial engagements during the early post-Contact period along with my interpretations, as a native Spanish speaker. Documents from the Coronado entrada provide evidence, from the first episode of Spanish colonization, of Pueblo peoples having fought in pitched battles outside of their settlements (Flint and Flint 2005; Hammond and Rey 1953). With a complement of shields, clubs, as well as bows and arrows, the indigenous peoples of the North American Southwest moved in units and employed group tactics to engage in combat against Spanish-led colonizing forces. In the case of the Hopi, they seem to have trained to attack the flank or sides of an opponent (see below). Developing from an examination of colonial-era records, I argue battle practice originated in the Prehispanic past.

My case for Prehispanic battle practice relies on a combination of changes in armament and broader transformations that occurred in the Ancestral Pueblo cultural context from AD 1200–1400. This time period saw the adoption of sinew-backed recurved bows and body shields (Schaafsma 2000; VanPool and O'Brien 2013). Although the new bow technology allowed Pueblo archers to fire projectiles with greater force, I argue this advantage was mitigated by the adoption of body shields that protected much of the human torso and stopped arrows fired from sinew-backed recurved bows. The greater size and weight of body shields would restrict the range of motion and slow warriors by adding inertia, but these armaments provided advantages for communities that could mass units on the battlefield. Shifts in weaponry, the aggregation of people into martially<sup>1</sup> positioned settlement clusters, and spatial needs of large communities together created conditions for large battles to occur. Sometime between AD 1200 and 1400, the tactic of massing for protection was complemented with new armaments that were tied to the implementation of group cohesion and pitched battles.

## The Case for Raiding in the North American Southwest

Similar to researchers in other parts of the world, Southwestern archaeologists have confronted the pacification of the past to reveal that Ancestral Pueblo and other peoples were not always peaceful (LeBlanc 1999; Snead 2008). As scholars have examined settlement patterns, architecture, and human remains for evidence of social conflict, they have relied on comparative social evolutionary frameworks to interpret how Native Americans made war. Because societies such as the Ancestral

Pueblo have been interpreted by investigators as tribal, non-complex, small-scale, and/or middle-range, war-making in the Prehispanic period is commonly characterized as raiding (Billman 2008; Cameron 2016; Haas and Creamer 1993; McGuire and Villalpando 2015; Osterholtz 2018; Schaafsma 2000; Snead 2008; Wilcox and Haas 1994). Although, it should be noted that some scholars investigating evidence of large-scale attacks and massacres have suggested the possibility of other tactics (Kuckelman 2010; LeBlanc 1999; Lekson 2002; Martin 2016; Snead 2016). The interpretation of raiding is bolstered by documentary and ethnographic sources that provide evidence of raids conducted by peoples in the North American Southwest, at least some of which included the taking of captives (Brooks 2002; Haas and Creamer 1997; Harrod 2018). However, much research on past martial practice rests on shaky inferential grounds.

The archaeological application of the term “raiding” often lacks conceptual clarity and for the Prehispanic North American Southwest relies heavily on general fit with comparative social evolutionary models. Helmke (2019) highlights that raiding is a complex phenomenon that archaeologists have only begun to unravel. Whereas basic elements such as speed and surprise are generally implied in analyses of raiding, archaeologists who study cultures in the Americas lack conceptualizations of martial strategy and tactics. For example, Kuckelman, Crandall, and Martin (2017:101) argue warfare was highly variable among Ancestral Pueblo peoples, but it is unclear how and why they distinguish “raiding, hand-to-hand fighting, skirmishes, and opportunistic encounters.” Did raiding in the North American Southwest preclude hand-to-hand combat? Are opportunistic encounters not a part of raids and ambushes? Among small-scale groups in the Amazon and many other areas of the world, revenge raids often focused on targets of opportunity, such as someone caught alone and perhaps unaware while outside of a village (Allen and Jones 2014; Redmond 1994). Thus, the term “raid” tends to be applied as an abstract category with a lack of conceptual clarity.

An uncritical approach to past martial practice is compounded by limited scrutiny of social evolutionary models pertaining to war. For example, Fleming and Watson (2018) contend that raiding occurred among early farming villages of Sonora, Mexico. They argue “[w]arfare, or intercommunity conflict, in small-scale societies frequently manifest as raiding for resources, including food, materials, or people (i.e. slaves or wives) (Allen and Jones 2014; Manson and Wrangham 1991). Among the middle-range societies of the Southwest warfare likely followed a similar pattern [...]” While the model of Fleming and Watson is sound (e.g. Cameron 2016; Keeley 1996), its application leaves the premise of their investigation under-scrutinized (i.e. raiding and its archaeological correlates). They gather evidence for low frequencies of trauma (i.e. parry fractures and cranial trauma) from a Sonoran skeletal sample to argue for the tactic of raiding but battle is never considered. A major issue, in addition to not considering martial tactics beyond raiding, is that there is no inherent framework that leads from specific types of skeletal trauma to specific types of martial practice (cf. Tiesler and Cucina 2012). For example, a parry fracture results from a person breaking their arm, typically the ulna, in the process of deflecting a blow (Smith 1996). However, in the Sonoran case and greater North American Southwest, why do high frequencies of arm breaks have to necessarily result from

raiding? Why not battles or sieges? Fleming and Watson's (2018) interpretation of martial tactics is only supported by the assumption that because most small-scale societies raid, then so did populations in Sonora. They also cite Kohler and Kramer-Turner (2006) to support the claim that raiding was common across the Southwest in Prehispanic times. However, Fleming and Watson's source contains similar issues in terms of relying on an assumption of tactics to link material remains to human behavior.

Kohler and Kramer-Turner (2006) assemble regional skeletal data from the northern San Juan and San Juan Basin to examine how sex distributions in various populations might have been influenced by warfare. In their AD 1200s sample from the Totah region, Kohler and Kramer-Turner argue the reported sex-ratio imbalance is due to war. Their skeletal sample contains a higher than average number of female remains, and they note the data for this period in the region's history provide evidence of high mortality rates for populations between 6 to 25 years of age and from 26 to 30 years of age (i.e. a rough fit within the range of expected combat deaths). Furthermore, in this same period, communities in the region formed into tightly packed clusters surrounded by no-man's-lands. Similar settlement patterning throughout the North American Southwest is indicative of communities avoiding martial conflict (Abbott and Spielmann 2014; LeBlanc 1999; Rice and LeBlanc 2001). Kohler and Kramer-Turner's (2006) claim for female captivity is bolstered by Martin (1997), who provides corroborating evidence of captive women in the Totah region. Therefore, the case is strong that captive-taking via warfare led to an influx of women. However, the analysis is questionable in regard to the interpretation of tactics or how people in the North American Southwest engaged in martial combat.

Kohler and Kramer-Turner's (2006) argument for martial tactics rests on the development of a cross-cultural model. Raiding for women was common among small-scale societies (Cameron 2016; Keeley 1996). Additionally, sex imbalances in skeletal populations can provide evidence of captive-taking that resulted from warfare (LeBlanc 1999). Because Ancestral Pueblo peoples lived in small-scale societies, it is plausible that imbalances in sex ratios provide evidence of raiding for women. Beyond the general application of a cross-cultural model, Kohler and Kramer-Turner note there is colonial-era documentary evidence of Pueblo warriors raiding, and taking women and children captive (Brooks 2002). Thus, their findings from the Totah region fit the model and seem to provide evidence of raiding. However, captives can just as easily be taken via pitched battles and sieges. In Post-classic Mesoamerica (AD 900–1519), pitched battles led to captive-taking (Hassig 1992). People could be captured during combat or taken in the aftermath of a surrender. The famous ancient siege and eventual defeat of Troy by the Mycenaean Greeks was accompanied by the capture of many women (Homer 1991). Although the scale of battle was generally larger among Mesoamerican peoples and the Mycenaean Greeks, there is no reason to assume the Prehispanic peoples of the North American Southwest were incapable of deploying tactics other than raiding (e.g. Leblanc 1999; Rice 1998; Martin 2016). Thus, scholars should carefully consider their interpretations of how Ancestral Pueblo peoples engaged in martial combat.

Multiple lines of evidence suggest that groups in the North American Southwest engaged in tactics that do not just include raiding.

## Battle During the Coronado Entrada

Ethnohistoric and ethnographic data indicate that various cultures across the North American Southwest engaged in pitched battle (Kroeber and Fontana 1986; LeBlanc 1999; Rice 2001; Seymour 2015). Documentary sources provide several examples of post-Contact Pueblo groups fighting away from settlements and in open terrain (e.g. Flint and Flint 2005; Hammond 1927; Hammond and Rey 1953; Levine and LaBaue 1997; Seymour 2015; Villagr  1992). The first documented instance of battle occurred during the Coronado entrada at the Zuni pueblos or what the Spanish called C bola (Flint 2008). When Spanish-led colonizing forces arrived at the community of Hawikuh, they found a large gathering of people. This group at Hawikuh was probably composed of a large portion of people from other parts of the Zuni area who assembled for defense and/or to perform the summer cycle of solstice ceremonies (Flint 2008:100). The Spanish-led forces camped outside of the pueblo overnight and in the morning combat ensued.

The following contains accounts of martial engagements between the forces of the Coronado entrada and Pueblo peoples. To avoid misinterpretation resulting from translation, I provide the original Spanish descriptions. After the original Spanish narratives and translations from Flint and Flint (2005), I give my interpretations along with those from Hammond and Rey (1977) and Flint and Flint (2005).

When the Spanish-led forces approached Hawikuh, they found 200 Pueblo warriors assembled out on the mesa (Flint and Flint 2005:393; Hammond and Rey 1977:208). Casta eda de N jera, member and chronicler of the Coronado expedition, commented of the assembled Pueblo warriors,

esperaron / en el campo (h)orednandos / con sus exquadrones a vista del / pueblo y como a los rreque- / rimientos que le hicieron / con las lenguas no quisie- / ron dar la paz. [Flint and Flint 2005:446]

These people waited in the countryside in view of the pueblo, arranged in their units. Because in response to the *requerimientos* which [the Spaniards] made to them through interpreters they refused to come to peace. [Flint and Flint 2005:393]

Here, Casta eda de N jera states Zuni warriors assembled on the mesa (*campol* countryside) and away from the pueblo of Hawikuh to meet the Spanish-led armed forces. He also relates the Pueblo warriors organized into martial units (*exquadrones*). However, it is unclear how the units were organized. Casta eda de N jera's account is corroborated by two other sources—*Relaci n del suceso* that was written by an anonymous chronicler of the entrada and an account by G rcia L pez de C rdenas who was second in command of Coronado's martial forces (Flint and Flint 2005; Hammond and Rey 1977). Exiting the pueblo and presenting a martial force assembled in units on the mesa top does not conform to warfare in the form of raiding. Zuni forces were not attempting to surprise the enemy by hiding

their warriors and potential for armed force. They also allowed the Spanish to read a formal demand of subjugation (*requerimientos*) before the martial engagement. Although it is unclear if the Zuni understood any of the declaration, reading the *requerimientos* allowed the Spanish-led forces to become battle-ready. At Hawikuh, the defenders' potential advantage of initial surprise or ambush was lost, which is evident in the ensuing events. The Spanish perceived the mass of Pueblo warriors on the mesa as a threat and attacked them (Flint and Flint 2005:393). Subsequently, the Zuni retreated behind the walls of their settlement and fought from the rooftops of their homes; in about an hour the Spanish-led forces won the engagement (Flint and Flint 2005:446). Thus, the Pueblo warriors at Hawikuh assembled for battle by forming squadrons out on the mesa to confront Spanish-led colonizing forces but the result of the engagement was a quick defeat.

The next instance of battle during the Coronado entrada occurred at the Hopi pueblo of Walpi in the region the Spanish called Tusayán (Flint and Flint 2005:396–398). Before the martial engagement, the residents of Walpi had heard of the conquest of Hawikuh and “horses that ate people” (Hammond and Rey 1977:214). Despite their awareness of Spanish aggression, the warriors at Walpi exited their settlement to confront the oncoming colonizing forces.

Before the martial engagement, the Spanish-led warriors hid in a gully outside Walpi and listened to the residents of the community as they spoke in their homes (Flint and Flint 2005:396). The next morning combat ensued.

pero como fue de manana fue- / ron descubiertos y se pusie- / ron en orden los de  
la tierra / salieron ordena- / dos de arcos y rrodelas y porras / de madera en ala  
sin des- / concertar y hubo lugar que / las lenguas hablasen con e- / llos y se les  
hiçiese rrequerri- / mientos por ser gente bien / entendida pero con todo es- / to  
hacían rrayas rrequirien- / do que no pasasen los neus- / tros aquellas rrayas  
hacia / sus pueblos que fuesen por-

[fol 43v]

te pasaronse algunas rrayas / andando hablando con ellos / Vino a tanto que  
Uno de ellos / se desmesuro y con Una porra / dio Un golpe a Un cavallo en /  
las armas del freno (Flint and Flint 2005:450).

However, they were discovered early in the morning. The [people] of that land set themselves in formation and came forth against them on the flank, in good order with bows and shields and wooden clubs, without losing their order. There was an opportunity for the interpreters to talk with them and recite the *requerimiento* to them, because they are people of good understanding. After all this, though, they marked out lines, demanding that our people not cross them toward their pueblos, which were some distance away.

[43v]

[But Tovar's people] walked on, crossing some of the lines and talking to [the natives]. [It] went so far that one of them became upset and struck a horse on the fittings of the bit with a club. [Flint and Flint 2005:396]

This passage, authored by Castañeda de Najera, describes how Hopi warriors at Walpi walked out some distance from the pueblo as an armed, organized (*ordenados*), and apparently disciplined (*sin desconcertar*) group to meet Coronado's forces (Flint and Flint 2005:396). The Hopi combatants did not assemble in a straight line. Hammond and Rey (1977:214) translate the tactic as a "wing formation." Flint and Flint (2005:396) interpret the maneuver as moving "forth against them on the flank." The core idea is that Hopi warriors assembled outside of Walpi in a formation that exposed the Spanish flank or sides. Moreover, Hopi warriors drew lines (*hacían rrayas*) on the ground that Spanish-led forces were not supposed to cross. Castañeda de Najera was apparently impressed by the actions of the warriors at Walpi because he calls them "*gente bien entendida*" or "people of good understanding" (Flint and Flint 2005:396, 450). Thus, Hopi warriors assembled for pitched battle on the mesa with units arranged in a manner that exposed the opposing flank. Similar to the opening quote by Sunzi (aka Sun Tzu), the Hopi further displayed their battle plan by drawing lines between themselves and Spanish-led colonizing forces.

The previous documentary evidence establishes that the martial practices of the Hopi and Zuni were battles. The Pueblo peoples at Hawikuh and Walpi massed their warriors on open terrain outside of their pueblos to engage in martial combat against the massed forces of the Coronado entrada. The Zuni organized into units of warriors. The Hopi organized their units in a manner that exposed the side of their massed opponents. The flanking maneuver implies that the Pueblo combatants at Walpi trained to assemble in formations and could maneuver in groups to attack weak points in massed opponents. Thus, beyond the level of a general melee, where groups of warriors engage each other, usually in close quarters, with little control beyond individual initiative, the Hopi implemented group cohesion in combat with massed units that might have engaged in flanking maneuvers. Documentary evidence from Zuni and Hopi establish the existence of pitched battle tactics in the North American Southwest during the initial period of Spanish colonization. Next, I will examine evidence for the Prehispanic use and development of battle practice.

## Evidence for and Factors in the Development of Ancestral Pueblo Battle Tactics

The use of battle tactics among ethnically distinct Pueblo groups during the initial period of Spanish contact suggests a Prehispanic origin for this type of martial practice (e.g. LeBlanc 1999). Although it is possible battle tactics were developed quickly by Pueblo peoples in reaction to news of Spanish tactics and aggression, this scenario seems unlikely. I highlighted above that instead of using the advantage provided by their settlements, many of which were fortified by a combination of walls and terrain, Pueblo warriors repeatedly left their villages to fight Spanish colonizing forces (e.g. Flint and Flint 2005:446, 450; Hammond 1927:155; Hammond and Rey 1953:23; Villagrà 1992:251–252). In all but one case, Pueblo warriors were quickly defeated when they assembled outside of their settlements for combat (e.g.

Flint and Flint 2005; Hammond and Rey 1953; Villagr  1992). The documented exception occurred at the Jumanos pueblo of Agualaco, where a much larger group of Pueblo warriors overwhelmed a Spanish-led force (Hammond 1927:155; Hammond and Rey 1953:23). Unfortunately, documentary sources provide no additional details on this engagement. In contrast to most battles, it took Coronado's field commander more than fifty days to lay siege and capture Pueblo del Cerco (likely located in the Southern Tiwa region), and 57 years later (AD 1599) it took two days for Don Juan de O ate's forces to capture Acoma (Flint and Flint 2005). If engaging in battle was a new martial practice developed in response to the Spanish threat, it is likely Pueblo groups would have abandoned the tactic after it failed repeatedly during the Coronado entrada.

In comparison to fighting Spanish-led forces in battle, retreating into a fortified settlement and countering a siege generally provided a greater possibility of success for Pueblo peoples. Due to the need for supplies and travel in foreign territory, quick victories versus prolonged engagements are generally preferable for attackers (e.g. Clausewitz 1976 [1832]; Sunzi 2007; Vegetius 1993). The Spanish repeatedly report how an absence or dwindling of supplies could bring their expeditions to a disastrous end (Flint and Flint 2005; Hammond and Rey 1953). Therefore, accepting an argument for battle as a quick and novel reaction to the Spanish threat would also indicate that Pueblo groups were unaware of or chose to ignore the advantages provided by avoiding massed combat in open terrain against Spanish-led forces. Although possible, such a premise would run counter to the tactic of avoiding pitched battle after an initial defeat, which was practiced by indigenous groups across the globe during the colonial-era (e.g. Ferguson and Whitehead 1992). In addition, disparate, possibly antagonistic Pueblo groups would have had to simultaneously decide to learn how to fight in pitched battle. Consequently, I contend that a culture of battle existed among Pueblo peoples at the time of Coronado entrada.

For Prehispanic times, I consider three factors pertinent to the development and use of pitched battle tactics among Ancestral Pueblo peoples: (1) armament, (2) vulnerability tied to spatial needs, and (3) martial flexibility. Battle tactics might have been learned, forgotten, and re-invented for reasons that varied temporally and spatially. Therefore, the significance of each of the factors I examine might have waxed and waned for Ancestral Pueblo peoples.

## Armament

Spanish narratives are consistent in describing Pueblo warriors wielding shields, clubs, and bows and arrows (Flint and Flint 2005:396,451; Hammond and Rey 1966:169,187,221; Hammond and Rey 1977:214,333; Villagr  1992:166). Despite their absence in colonial-era documents, human remains and iconography provide evidence to suggest that Prehispanic peoples used hafted stone axes as implements of war (Kuckelman 2010: 197; Schaafsma 2000). Because of their size, weight, and possible constraint on movement, shields are of particular interest. During his entrada, Coronado was gifted a large shield made of bison hide that covered a warrior from head to toe (Hammond and Rey 1977:67). Espejo, leader

of the Espejo expedition, commented that, “[Pueblo] shields are made of buffalo hide, oval in shape” (Hammond and Rey 1966:221). These shields that protected a large part of the human torso are called body shields (e.g. Gebhard 1966; LeBlanc 1999; Schaafsma 2000).

Ethnographic data provide further insights on body shields. Wright (1976) extensively discusses body shields made of bison hide and presents numerous ethnographic examples from the North American Southwest. He notes a general consistency in size and decoration of Pueblo shields and states “[t]hey preferred a shield ... twenty-four inches in diameter” (Wright 1976:10). He goes on to argue,

the generalized shield is similar in shape, decoration, and methods of attachment to the prehistoric Pueblo III basketry shields and differs only in size and material of which it is made. Presumably some time in the two-hundred year period between [AD] 1300 and the advent of the Spanish, the Pueblo shifted from basketry to hides for making a defensive shield. [Wright 1976:10]

Prior to AD 1200, little iconographic evidence of Ancestral Pueblo shields exists and only three examples, which are made of basketry, have been archaeologically recovered (e.g. LeBlanc 1999). However, in the northern Southwest, a surge in martial iconography occurred during the thirteenth century AD up to the time of Spanish contact (Rogers 2003; Schaafsma 2000). During this surge, Ancestral Pueblo rock art and kiva murals portray warriors as shields with head and legs attached (Figures 2–4) (Crotty 2001; Schaafsma 2000; Rogers 2003). From AD 1300 to the arrival of Coronado’s forces, the typical shield depicted in Ancestral Pueblo iconography was big, round, and made of hide (Figures 2–4; e.g. LeBlanc 1999; Rogers 2003; Schaafsma 2000; Wright 1976). Iconographic evidence of hide construction is provided by the scalloped edges (Figures 2 and 3) depicted on shields (Schaafsma 2000). Thus, ethnographic and ethnohistoric examples of body shields provide a counterpart for Prehispanic iconography.

A body shield, even if carried with the help of a sling around the neck, could restrict the mobility of a warrior. As shields grow in size, they increasingly restrict a warrior’s range of motion (e.g. Rover 2019). Based on modern analogs, if Prehispanic shields were made of one piece of hardened leather, then they would have been heavy (LeBlanc 1999:109; Wright 1976:90–91). A large, heavy shield tends to reduce mobility by adding inertia and reducing range of motion. Thus, the implementation of body shields runs counter to the logic of raiding. Slower, less mobile warriors are more exposed to counterattack and hampered in their ability to perform quick, surprise attacks. Moreover, the introduction of new bow technology could make easier targets of solitary warriors, encumbered with body shields.

Recurved, sinew-backed bows are present in Ancestral Pueblo iconography created after AD 1300 and might have been implemented in war as early as AD 1200 (Schaafsma 2000; VanPool and O’Brien 2013). Because this type of bow was “invariably” sinew-backed, I will refer to the weapon simply as a recurved bow (McEwen et al. 1991:80). The use of recurved bows was an important change in martial technology because these weapons allowed archers to fire



FIGURE 2. Pueblo warrior with shield, and bow and arrow from Pottery Mound, Kiva 7, Layer 8, South Wall. Image redrawn by Christopher Hernandez from Schaafsma (2000).

arrows with more force than a self-bow (McEwen et al. 1991). Solitary warriors charged with the physical burden of large, bison hide shields could have been at a disadvantage against a group of archers armed with recurved bows. A reduction in mobility caused by the use of body shields would have made solitary warriors more prone to being pinned down, flanked, and attacked at weak points in their personal defenses. However, body shields could have provided a great advantage in battles and group formations.

Documentary sources provide abundant evidence of the O’Odham, Piipaash (Maricopa), Mohave, and Quechan (Yuma) engaging in pitched battle armed with hide shields, clubs, and recurved bows (Kroeber and Fontana 1986; Rice 2001). The Akimel O’Odham (Pima) and Piipaash were in a near-constant state of martial readiness in the 1800s because of possible attacks from Apaches and other groups (Russell 1908). Hence, they created networks of lookouts and runners to spot threats and muster allies from up to 40 km away (Rice 2001). To protect members of their community, such as women who left a village to collect firewood, the Akimel O’Odham employed sentinels (Kroeber and Fontana 1986). Yet, Akimel O’Odham and Piipaash villages generally lacked barricades or other forms of dedicated martial architecture. Instead, the Akimel O’Odham relied on Piipaash villages as buffers against attacks and the numerically smaller Maricopa relied on the Akimel O’Odham for martial support (Rice 2001).

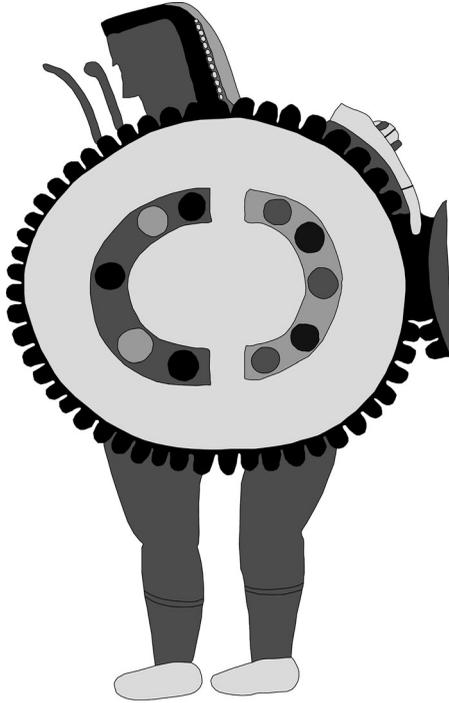


FIGURE 3. Pueblo warrior from Pottery Mound, Kiva 2, Layer 3. Image redrawn by Christopher Hernandez from Schaafsma (2000).

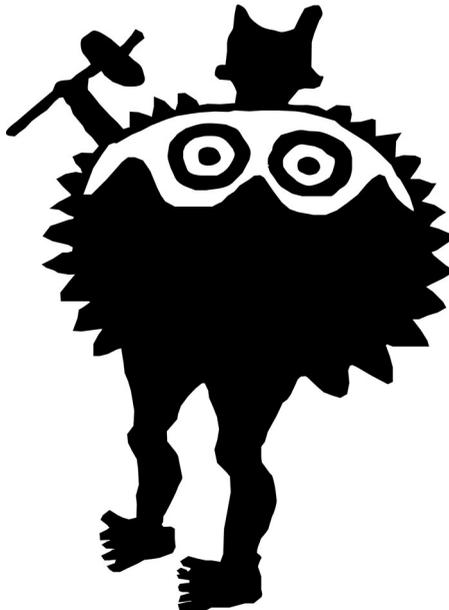


FIGURE 4. Pueblo warrior from rock art in Galisteo Basin, New Mexico. Image drawn by Christopher Hernandez.

In pitched battles that could involve hundreds and in some cases possibly thousands, the Akimel O'Odham and Piipaash organized into units of archers that provided support for club-wielding troops (Kroeber and Fontana 1986; Rice 2001). The warriors carried shields made of stiff, untanned hides (i.e. rawhide) stretched over a wooden hoop with a diameter of 40-50 cm or about 15-19 in (Russell 1908; Spier 1933). These shields were smaller on average than those carried by Pueblo warriors. Rice (2001) highlights Akimel O'Odham and Piipaash shields covered a combatant's upper body and the Akimel O'Odham developed a tactic of advancing in a crouched position that allowed them to protect most of their body with a shield. Because the Akimel O'Odham probably descended from the Hohokam, it is possible both Hohokam and Ancestral Pueblo peoples employed battle tactics during Prehispanic times (e.g. Rice 1998, 2001). Because large shields, clubs, as well as bows and arrows were the main implements of war for several groups across the Southwest, and their use is documented since the Prehispanic era, it is possible the martial units reported by Castañeda de Nájera were separated into archer and club-wielding troops. Perhaps Prehispanic warriors also assembled into units on the basis of weaponry.

My argument for the use of body shields in battle relies heavily on their ability to stop arrows. When massed together on the battlefield, body shields that cannot stop arrows would be pointless, and would only succeed in slowing warriors, limit their range of motion, and make them easier targets. I raise the issue of shield effectiveness because LeBlanc (1999:98) claims arrows fired from a recurved bow could penetrate hide armor but provides no specific evidence for his assertion. Contrary to LeBlanc, several examples from the O'Odham, Apache, Pueblo, and Mohave indicate that hide shields and armor were effective at stopping arrows fired from self- and recurved bows. In the nineteenth century AD, the Indian agent Captain Frederick Grossman reported the untanned, thoroughly dried leather shields of the Akimel O'Odham could stop arrows fired at short distances (Grossman 1873:416). Unfortunately, he did not specify the bow type involved. Spier (1933:132) provides an account of how at a range of 30 m an arrow fired from a self-bow penetrated a deer only to a depth of 1 cm. Russell (1908:39) documented Apache rawhide armor that could stop Akimel O'Odham arrows. The arrows were probably fired from recurved bows because the Akimel O'Odham primarily employed this type of bow for war, whereas the self-bow was used principally for hunting (Rice 2001). Moreover, based on his analysis of impact marks on Pueblo hide shields in the Fred Harvey collection, Wright (1976) observed, in contrast to bullets, arrows did not fully penetrate any of the shields. It is also important to note the Mohave carried hide shields that were effective against arrows fired from Piipaash and Akimel O'Odham recurved bows (Kroeber and Fontana 1986). Because several examples from the Southwest indicate that hide shields and armor could stop arrows fired from self- and recurved bows (e.g. Grossman 1873; Kroeber and Fontana 1986; Rice 2001; Wright 1976), I argue body shields would have been effective at stopping arrows fired from recurved bows. The stopping power of body shields is important because such defenses would have allowed Prehispanic warriors to form units in battle and not be easily cut down by archers armed with the newer, more powerful recurved bow. These shields were probably

a response to the new bow technology or vice versa. The data suggest Ancestral Pueblo peoples employed battle tactics as far back as AD 1300 or possibly as early as AD 1200. During this time span, recurved bows and hide body shields entered the iconographic register of Ancestral Pueblo peoples. The reduction in mobility and, at the very least, the added labor required to wield body shields, was probably influenced by the adoption of recurved bows and other factors in Pueblo III and IV cultural contexts.

### **Why Battles? Martial Flexibility and Vulnerability Tied to Spatial Needs**

Beginning about AD 1200, many Ancestral Pueblo groups began to aggregate into large settlements (some 1,000 rooms or more) that were often surrounded by high and continuous walls (Abbott and Spielman 2014; LeBlanc 1999). Many of the large pueblos were built toward the edges of mesa tops and surrounded by smaller villages (Abbot and Spielmann 2014). Additionally, many of the large communities that were located on the same or nearby mesa tops began to cluster into confederations (Haas and Creamer 1993; Rice and LeBlanc 2001; Riley 2005). According to Abbott and Spielmann (2014:8), “[a] pan-regional process seems to have been at work [that] transformed a relatively continuous distribution of settlements across the Northern Southwest into compact aggregations separated by large tracts of vacant land.” Therefore, around AD 1200, a process of aggregation initiated with many people moving into martially positioned clusters of settlement. Effective fortifications have a force multiplier effect (LeBlanc 1999; Müth et al. 2016). In other words, a small group of combatants within a well-fortified position can hold off a larger opposing force. Accordingly, the aggregation of people into large, well-fortified settlements and clusters of communities probably fostered new forms of martial organization and tactics.

In Solometo’s (2004) analysis of past Zuni populations, she argues that from about AD 1200 and later the logistics were in place in settlement clusters for large battles to occur. Her calculations are based on population estimates derived from Kintigh (1985). For each village in the Zuni region she calculates two people per room and a 65 percent occupancy for a village as a whole. Building from estimates by LeBlanc (1999) and Kelly (1985), she figured that about 25 percent of the total population of any settlement could be assembled as warriors to attack other villages. Although she admits that her calculations require further refinement, Solometo (2004:111) argues

[i]f pitched battles outside the pueblo walls were among the tactics of warfare [from AD 1275–1325 and at 1350], the full contingent of 422 warriors from the largest Zuni village (Archeotekopa II) occupied during the [AD] 1275–1300 interval would have been more than sufficient to overwhelm [3:1 or 5:1 numerical superiority] the total number of warriors in either the Upper Puerco West cluster (destroyed by [AD] 1300) or Newton–Rattail cluster (destroyed by [AD] 1325).

Consequently, around AD 1300, there is a strong demographic case for settlement clusters fostering the conditions for large battles among the Zuni pueblos and by extension other parts of the Southwest.

To understand why Ancestral Pueblo peoples would have engaged in battle, I examine how flexibility in tactics was tied to the need for protection outside the walls of a settlement. In terms of martial flexibility, there is an important pattern in the manner in which native peoples of the North American Southwest fought in battles against Spanish-led forces. Outside of their settlements, Pueblo groups faced Spanish-led forces. When overwhelmed, Pueblo warriors would retreat into their villages and defend their communities. Similar to Mesoamerican warriors and other combatants across the globe, Pueblo groups prepared a layered defense (Hernandez 2017; Hill and Wileman 2002; Lupfer 1981). Returning to the case study of Troy in *The Iliad*, an analogous process occurred as the Trojans attempted to fight off the assaulting Greeks. When victory could not be achieved in battle, the Trojans relied on their walls to continue fighting (Homer 1991). Because the attacking Greeks generally lacked siege technology, the Trojans withstood their siege for many years and were overcome only through a now-famous ruse involving a wooden horse. Aside from probable siege towers among the Terminal Classic Maya (AD 800-1000) in Mesoamerica, in the North American Southwest and most of the Americas there is a general lack of evidence for dedicated siege equipment beyond ropes, ladders, and fire (Hassig 1988, 1992; Keener 1999; Ringle 2009; Starkey 2002). Similar to the Trojans, if victory was not likely in battle, Ancestral Pueblo peoples could retreat and rely on the advantages of a fortified settlement.

Although fortifications can be difficult to overcome via direct assault, human ingenuity and cunning can negate the benefits provided by martial architecture. In the opening quote of this paper, Sunzi (a.k.a. Sun Tzu) highlights how attackers can create situations that force defenders to leave their fortified positions. In the northeastern portion of the US, the Iroquois employed indirect assaults such as attacks on unprotected crops, buildings, and villagers to defeat opponents in fortified positions (Keener 1999). In the North American Southwest, settlements in difficult to access terrain, such as mesas, hilltops, and rock shelters, were more prone to being isolated by having access routes blocked (i.e. siege). Isolation forces the besieged to rely on their immediate surroundings and possible allies for survival. Importantly, attackers can seize resources not protected by the walls of a settlement.

In the planning of a martial encounter or broader campaign, the location(s) of water sources, farms, field houses, and storage areas can be strategically and tactically important (Brady 2012; Clausewitz 1976 [1832]; Lynn 2003; Sunzi 2007; Vegetius 1993). Because of the aridity of the Southwest, control of water sources is crucial (LeBlanc 1999; Rice 1998). When the Spanish laid siege to Pueblo del Cerco, this 50-day engagement concluded when lack of water caused the defenders to surrender (Flint and Flint 2005:561, note 86; Hammond and Rey 1977:228-229, 290). During the 1800s, the Quechan directed their raids into areas with known and reliable water sources (Kroeber and Fontana 1986:68). Hence, water sources outside of a settlement can provide an advantage for attackers. This issue was mitigated by several Prehispanic communities because there are many examples of Ancestral Pueblo villages built around water supplies (LeBlanc 1999). Nevertheless,

residents had to leave their settlements to acquire other necessities such as wood and maize, to visit sacred places, and probably for a myriad of other reasons. The issue of negotiating subsistence, protection, and overall spatial needs would be exacerbated during the process of aggregation into large, albeit dense villages.

The need to exit a fortified settlement left residents vulnerable to attack (Allen and Jones 2014; Kroeber and Fontana 1986; Redmond 1994). Because of the limitations posed by relying solely on fortifications for protection, I argue Pueblo peoples, both Prehispanic and those during early contact times, used battle tactics for martial flexibility. Not everything residents need or choose to protect is guarded by walls, and what is outside can be just as important as what is inside a fortification. Clausewitz (1976 [1832]:245) and Sunzi (2007:97) note that when fortifications are highly successful, attackers will devise strategies to lure occupants out of their strongholds. Therefore, the problem becomes how to counter an enemy that is attempting to lure warriors out of a fortified position and/or lay siege to a settlement.

Battles can prevent and thwart sieges or raids (Lynn 2003; Sunzi 2007; Vegetius 1993). The process of aggregation into settlement clusters and large villages along with the resulting increase in spatial needs provided impetus for the use and perhaps initial development of battle tactics. In many cases, the spaces Ancestral Pueblo peoples had to protect outstripped the area they were able to barricade and station with warriors. It remains possible battle tactics were developed earlier than AD 1200. However, I argue the clearest evidence for a general plan of layered defense, which included battle tactics among Ancestral Pueblo Peoples, dates to AD 1300 and perhaps as early as AD 1200. Ancestral Pueblo peoples barricaded and fortified their settlements. They also created martially positioned settlement clusters to guard themselves and larger areas. However, because of the large spaces and quantities of people that had to be monitored and protected, Ancestral Pueblo groups developed methods for massing and moving warriors as cohesive units outside of a village. These tactics would later be encountered by Coronado and successive Spanish-led incursions into the Southwest.

## Conclusion

Drawing from ethnohistoric, iconographic, ethnographic, and archaeological data, I have argued for the existence of a long-term pattern of battle among Ancestral Pueblo peoples.<sup>2</sup> This pattern of martial practice extends from the time of Spanish contact to about AD 1300 or as early as AD 1200. Future investigations may reveal that earlier evidence of site destruction and large-scale massacres resulted from battle and other martial tactics. I argue that during the Prehispanic period, the tactic of massing for protection was complemented with body shields and recurved bows that altogether led to the development of group cohesion and pitched battle tactics. Battle tactics would have formed part of a layered defense that included the use of fortifications as areas for retreat and continued resistance. My analysis could be strengthened by future research in experimental archaeology, the archaeological recovery of hide body shields, and hopefully the eventual documentation of Prehispanic battlefields (cf. Seymour 2015).<sup>3</sup>

Sunzi (2007) stated the essence of my argument over two millennia ago. Warfare is a form of struggle with people actively trying to out-scheme and out-maneuver one another. If a fortress is strong enough to resist attack, then attackers must devise a way to move opponents and/or get them to attack at a desired location. Conceptualizing martial combat as a reciprocal encounter is vital for understanding the archaeological record. The schemes and movements of warriors are actively involved with objects, ecology, terrain, and human constructions. The schemes and movements of warriors also pose constraints and challenges on opponents. Something as simple as a line on the ground had a martial function for the Hopi and Spanish during the Coronado entrada. The line marked and signified an aspect of Hopi culture and martial practice that the Spanish interpreted as confrontational. For Sunzi, a line could mark the boundary that enemies would not cross and define the plan of battle. Although unknown to each other, Sunzi and Pueblo peoples held similar ideas relating to battle, fortification, attack, and defense. Overall, this examination of martial tactics reveals that researchers cannot assume warfare in the North American Southwest primarily took the form of raiding.

## Acknowledgments

First I must thank the late Lawrence Keeley, whose encouragement made this paper possible. He saw an important idea about battle buried in the mass of facts I called a final paper for his course on the archaeology of warfare. Many thanks also go to Vincent LaMotta, Kristin Landau, Mike LeValley, and Luna for their comments and overall assistance in the preparation of this manuscript. Last but not least, I thank the four anonymous reviewers for their comments and suggestions that improved this manuscript.

## Funding

The completion of the current work was facilitated by funding from a National Science Foundation Postdoctoral Research Fellowship [SPRF# 1715009].

## Disclosure Statement

No potential conflict of interest was reported by the author.

## Data Availability Statement

All data used in this article are published in the cited works.

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## Notes

- 1 I say martially positioned instead of defensively positioned because archaeologists cannot assume all fortifications were primarily designed and used for defense (Hernandez 2017).
- 2 Also, perhaps among the Hohokam and their descendants (Rice 2001; Seymour 2015).
- 3 In terms of experimental archaeology, I repeatedly contacted several institutions to obtain weights and dimensions of Prehispanic and post-Contact period shields but was overall unsuccessful in obtaining such data.

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