

TECHNOLOGY HAS CHANGED EVERYTHING

Or
Covering Human
Mayhem from
Spears to Nuclear
Weapons

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CHAPTER 1

THE LONG PATH TO MODERN TIMES



In May 1946, Albert Einstein, one of the *Bulletin's* first sponsors, wrote in a fund-raising letter,

"The unleashed power of the atom has changed everything save our modes of thinking and thus we drift toward unparalleled catastrophe."

<http://www.paradigmresearchgroup.org/BAShistory.html>

**If nuclear weapons represented such a big change,
then they must have changed things FROM
something....**

**And that must have changed things from
something else....**

**And THAT must have been a change from
something else....**

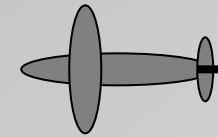
And so on.

From nuclear weapons



To conventional weapons

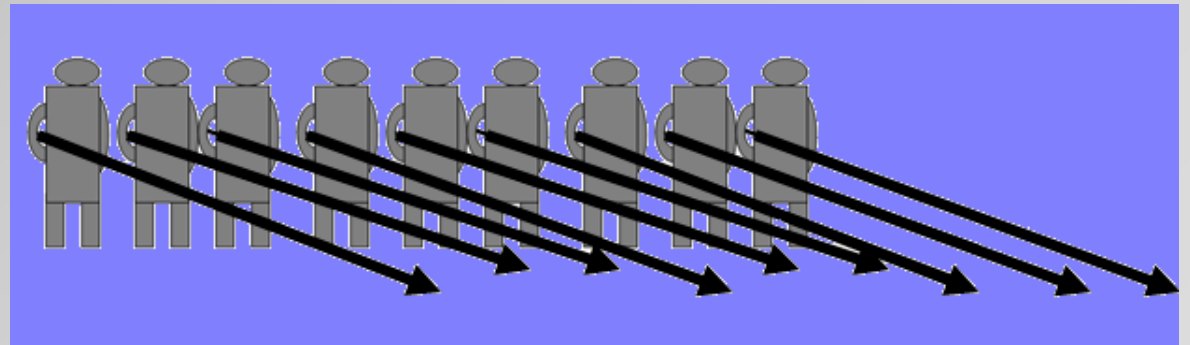
- bombers
- machine guns
- other rapid fire
- Rifles (including muzzle loading)



...and back through much history to...

The Phalanx

**Invention of
War**



Many ancestors of the present-day humans (us) have lived on the planet for at least five million years without leaving behind any traces of organized battles (until sometime in the last 12,000 years or so). No one knows everything they did, and they may well have fought one another occasionally. But warfare as we know it is organized activity in which at least two groups commit mayhem against one another.

That leaves traces.

The traces are important. Whenever I try to read something about prehistoric war, it seems to me that ideology often drives the thinking about this subject. It seems better to me to stick to sources which tell me something about the actual evidence. In other words about the traces left behind.

Traces such as...

...bodies – often in mass graves with evidence of wounds.

This one (left) is at the Little Big Horn Battlefield site in Montana.

The one below is at Wounded Knee, SD.



(My pictures)



**...or records
produced by people.
That would be written
records after writing
was invented and
rock art before that.**

**This example of rock art from Vantage, WA appears to show hunting
rather than conflict between humans.**

(My picture)



This one is along the Snake River near Hells Canyon on the Idaho side.

It looks to me like a picture of a group of people (bottom) driving a group of animals (top) before them.

There is also some guy next to a bighorn sheep at the right center.

(Maybe they are driving the animals over a cliff. That is a hunting method that primitive people used to use.)

(My picture)

The people who drew these were pretty good at showing us what they were doing – at least regarding hunting. There is a lot of such art that shows people-like figures, but doing nothing recognizable. But it doesn't look like they were fighting. Here are some examples I saw in Nevada.



ALONG US HWY 50 IN NEVADA

“The loneliest road in America”

(My pictures)

Frequently the pictures are very hard to figure out, although people who study them generally think they were part of religious ceremonies to bring blessings onto the hunt. That would have been important at least as seen by anyone who needs to eat.



**ALONG US HWY 50 IN NEVADA
“The loneliest road in America”**

(My pictures)

MORE EXAMPLES IN THE SIDEBAR ON CAVE ART.

There is a gradual evolution of such artwork into violent images and then into very violent images depicting fighting among people, deaths from such fighting, and many injuries. Some of these violent images are shown in the book *The Origins of War: From the Stone Age to Alexander the Great* By Arther Ferrill. It is available on Google Books. An image depicting “The army of four against the army of three” is on page 22. You can find it at this link:

<http://tinyurl.com/245gz3e>

(The actual link to Google is 371 characters long, but I made this small one at the TinyURL site, which is at <http://tinyurl.com/>.)

Try it and have a look. Then scroll back to page 21 for a scene depicting an execution.

There are virtually no such violent images older than about 12,000 years anywhere in the world, although the time frame of the evolution toward violent images varies from place to place.

In general, such examples by themselves do not prove anything, but summaries of this type of evidence say that:

- 1. Very few burials show evidence of violence (spears in the ribs, or some such thing) before 12,000 BC and none before about 30,000 BC.**
- 2. After about 12,000 BC several burial sites contain such evidence. This includes some mass burial sites where many people appear to have been deliberately killed.**
- 3. The number of such sites increases dramatically especially after around 4000 BC and by the time writing was invented (around 3500 BC) violent deaths were very common.**
- 4. Cave art depictions of violence escalates in the same pattern, as do traces of the equipment of war such as fortifications.**

You can find many of the sources that told me about evidence elsewhere on this web site. Look at the bibliography at

<http://www.gibbworld.com/war/bibliography.html>

Summary

35,000 BC

Late

No mass graves or clear evidence for violent deaths – at least early in the period

30,000 BC

Paleolithic

Cave paintings with generally peaceful scenes

12,000 to 10,000 BC

Pre-History
(Neolithic)

Fortifications
Mass graves clearly showing violence

Around 3500 BC

Historical
Period

Violent cave art

Lots of writing about warfare

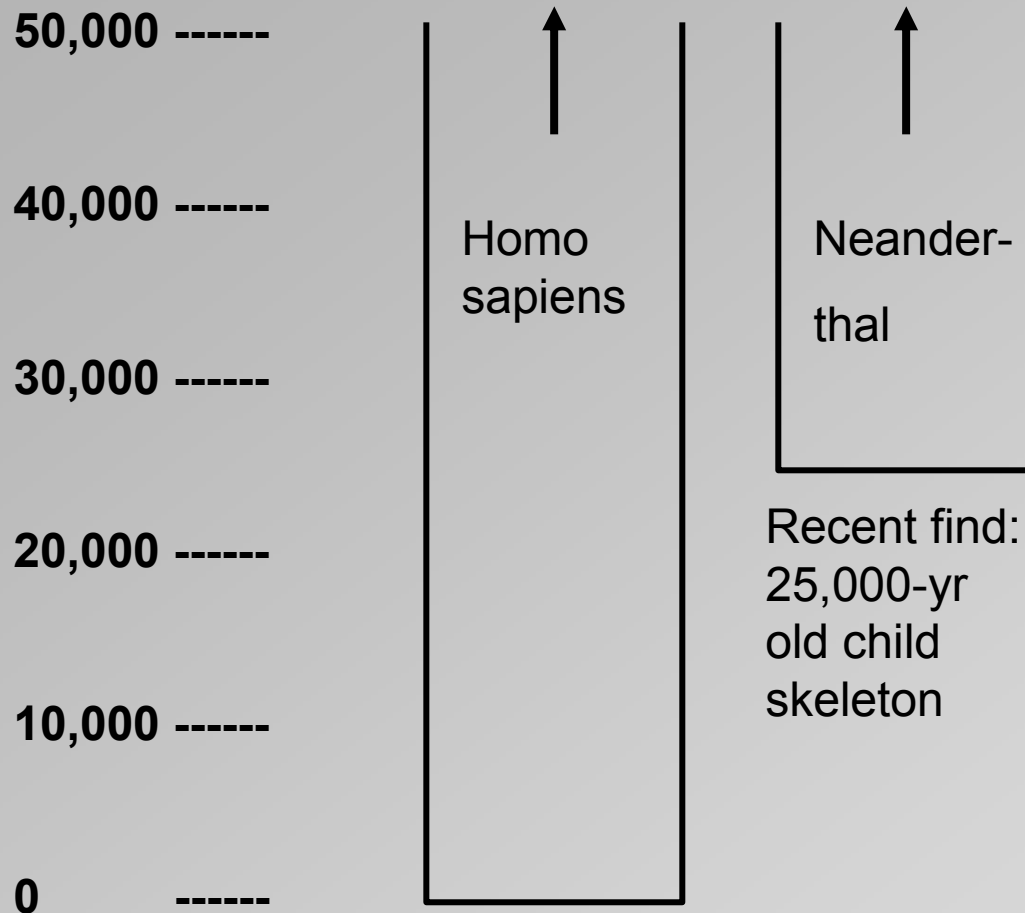
NOW

Military cemeteries

Just read the newspaper

Summary

LAST 50,000 YEARS



No evidence of battles where they lived together. Neanderthals generally dominated cold climates and sapiens dominated warmer climates until sapiens started making better tools.

Then sapiens dominated Europe and Neanderthals died out – but still no evidence of battles.

Sapiens probably dominated the habitat and reproduced faster.

Turney, Chris, *Bones, Rocks, and Stars-The Science of When Things Happened*, MacMillan, 2006

Appearance of new weapons

35,000 BC	Late	No mass graves or clear evidence for violent deaths – at least early in the period
30,000 BC	Paleolithic	Cave paintings with generally peaceful scenes
12,000 to 10,000 BC	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Bow, Sling, some other new weapons appear at about this point in history</div>	
	Pre-History	Fortifications Mass graves clearly showing violence Violent cave art
Around 3500 BC	Historical	
	Period	Lots of writing about warfare Military cemeteries
NOW		Just read the newspaper

War tends to motivate research on better weapons.

For example, there was World War II, when a crash research program developed the atomic bomb.

That was probably true on the bow and arrow era.

In other words, they didn't just invent war because they had new weapons.

It is more likely that they developed new weapons because they found themselves fighting about something.

WHAT HAPPENED?

Is there any good reason why warfare started to increase as it seems to have done?

It is hard to know for sure, but some clues might be available from some peoples for whom warfare came later – late enough so that there is some memory of it.



For example, here is a civilization that seemed to pass from a relatively peaceful existence to a somewhat more violent one...

A few centuries before Columbus, groups of people in what is now central California found that they could make flour from parts of acorns.

The acorns were so plentiful, that there was no need for agriculture.

The “(Central) Californian” of 5000 BC described as

- **being in a stable way of life for several thousand years**
- **seed gatherers with a little supplemental hunting**
- **leaving “practically no evidence of warfare” in spite of other peoples entering the region from time to time.**

Josephy, Alvin M. Jr., *The Indian Heritage of America*, Houghton Mifflin Co., Boston, 1968.

The “(Central) Californian” of 1300 AD described as

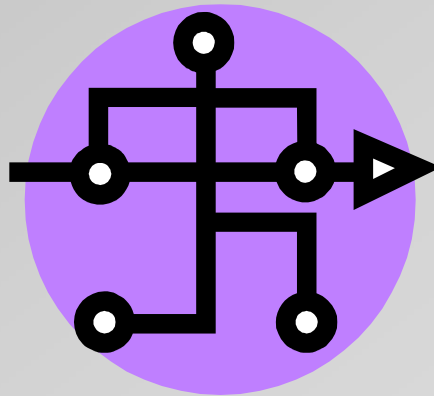
- Having latched onto acorns as a basic food which (with supplemental hunting and gathering) provided more abundant food than early agriculture could have done.
- Increased population
- Divided into separate independent groups (“tribelets”) with recognized boundaries and slightly different local cultures
- Not being quite warlike but “quick to defend the territories they owned in rare cases of intrusion by others”.
- (Note that there were so many of them that they now needed all the land they could get to survive. It became valuable.)

Josephy, Alvin M. Jr., *The Indian Heritage of America*, Houghton Mifflin Co., Boston, 1968.

People developed at different rates in different parts of the world.

There was generally a long period when people passed from simple hunting and gathering to more complex food gathering ending ultimately in agriculture. This could be thousands of years long.

The level of violence as depicted in cave art and other types of evidence escalated as this period of change developed.



I often see a book or an article that says something like this...

“Contrary to what they would have you believe, prehistoric warfare among primitive peoples was widespread and severe. Etc.”

When I see this, I check to see what dates they cite as containing evidence of warfare. They always seem to cite dates such as 3000 BC, 4000 BC, 8000 BC, or something else in this range. There is an occasional bit of evidence of violence from 12,000 BC or a little earlier. The great bulk of this evidence (in the form of the condition of the skeletal remains and the content of rock art) comes from 12,000 BC or later with only isolated bits of evidence from the 10,000 BC to 30,000 BC era.

I have never seen any of these sources claim evidence for any kind of “widespread, severe warfare” before about 10,000 BC although they sometimes assume it.

The following is an example of such an article It is by Arther Ferrill, the author of the *Origins of War* book on slide 13:

<http://historicaltextarchive.com/sections.php/sections.php?artid=167&op=viewarticle>

Ferrill makes it very clear that primitive and prehistoric war has been common. (Primitive war among present-day people probably has little to do with war among prehistoric peoples. They have vastly different histories.)

However, “prehistory” came to an end at around 3500 BC at the earliest and later most places in the world. That is when people settled down in “civilizations” and invented writing. And evidence of warfare goes back to 12,000 BC and maybe just a little of it as far as 30,000 BC.

Our species goes back to over 100,000 years ago, and other hominids go back over 5 million years ago. So there still appears to have been an invention of warfare. But it was invented by prehistoric people.

From the same article:

<http://historicaltextarchive.com/sections.php/sections.php?artid=167&op=viewarticle>

Later in the article (eleventh paragraph), the Ferrill addresses the earlier situation:

“There is no evidence for the practice of war before the late Paleolithic Age (35,000 to 12,000 BC)” ...

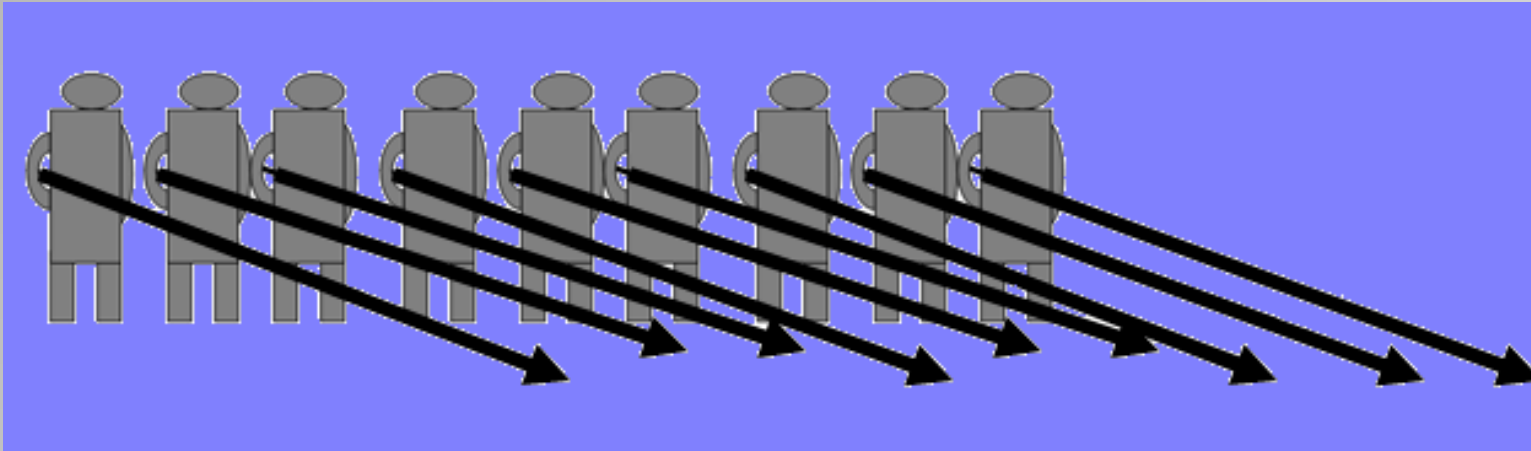
...“The famous Paleolithic cave paintings of France and Spain, dating from the period of 30,000 to 20,000 years ago, show no certain scenes of man killed by man. Mainly they depict animals, several thousand of them. Only about 130 of the figures have been identified as possibly men, and many of them are dubious, simply as men. Even so, the vast majority of the 130 are shown in peaceful scenes. A tiny number appear to be pictures of men dying from wounds inflicted by spears or arrows, but they are so badly drawn that not a single one can be certainly identified as a wounded or dead man”.

Once war became a reality, various peoples invented many efficient, ingenious weapons and tactics. Here is one of the best of the early ones....

The Greek Phalanx



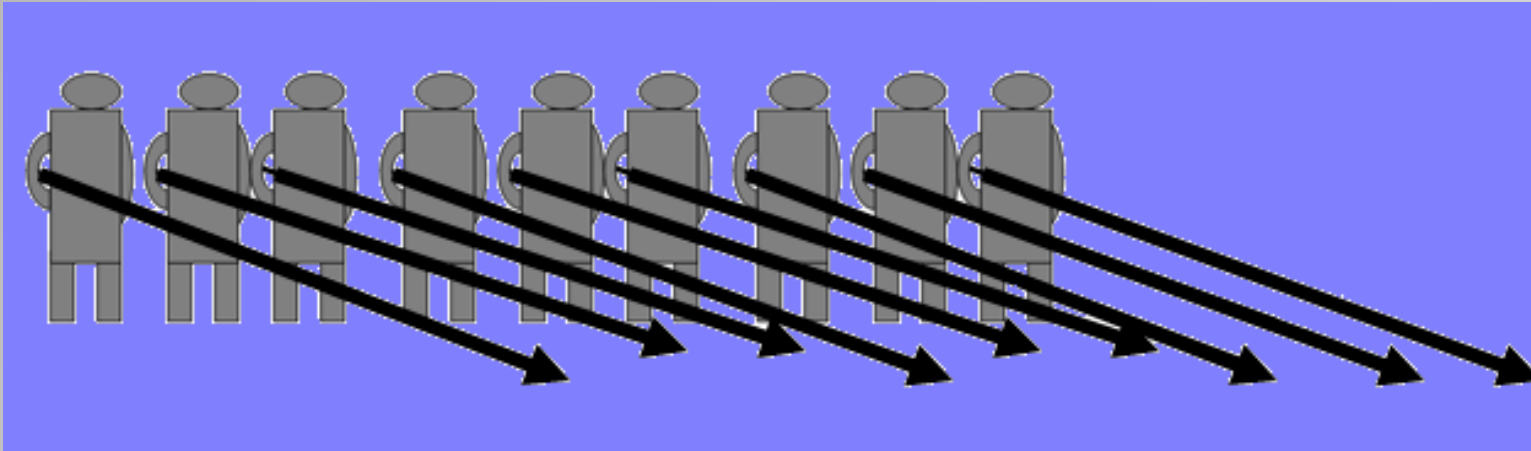
Phalanx warfare (developed by ancient Greeks – especially Sparta) kept the soldiers in firm, organized ranks that were protected by shields. Soldiers in the rear ranks pushed the front line forward into an enemy formation, and they also replenished the front rank when necessary.



Check this article on the Phalanx and Hoplites.

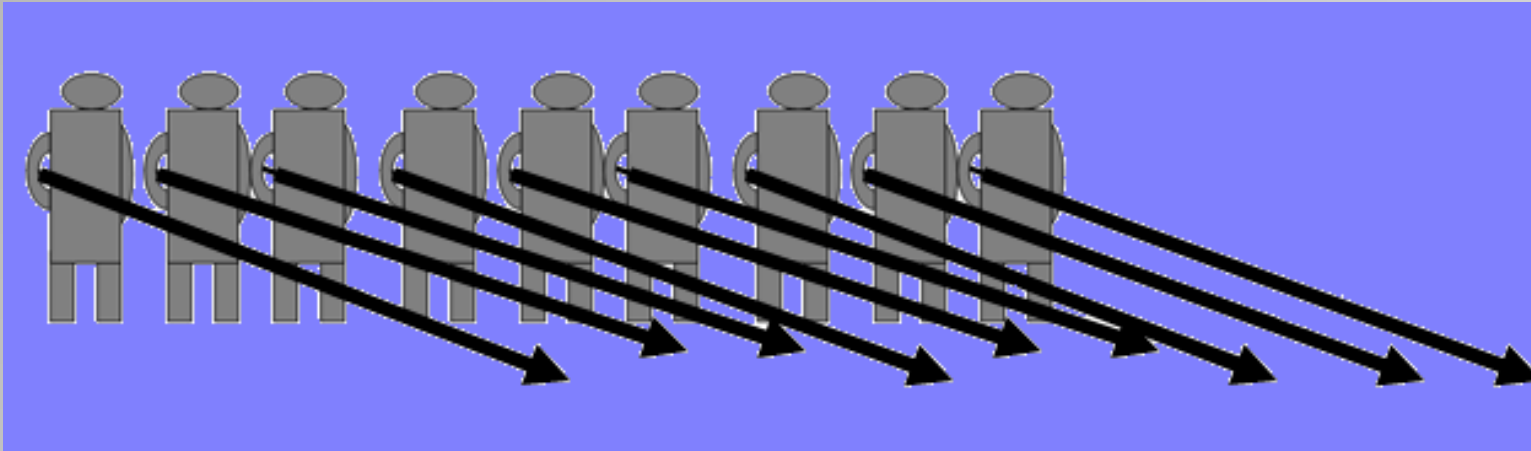
<http://www.livius.org/pha-phd/phalanx/phalanx.html>

Phalanx warfare (developed by ancient Greeks – especially Sparta) kept the soldiers in firm, organized ranks that were protected by shields. Soldiers in the rear ranks pushed the front line forward into an enemy formation, and they also replenished the front rank when necessary.



In its day, it was stronger than any other type of formation – including cavalry since the horses would not impale themselves on the line of spears.

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This was successfully used by the Greeks against the Persian invasions inflicting disproportionate casualties on the Persians.

“The Spartans must have had some idea of the butchery of hoplite* fighting when they wore wooden ‘dog tags’ around their necks to ensure the later identification of mangled corpses.”

**--- *Wars of the Ancient Greeks*, Victor Davis Hanson,
Smithsonian History of warfare**

*** The soldiers in the phalanx were called hoplites, a name derived from names given to their shields and armor.**

Although many types of weapons technology were developed – some more successful and some less – lets cut on through to the development of gunpowder and firearms.

You will find this in the next chapter.

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Please continue and
return to the War
Home Page. Then go on
to Chapter 2.

