

## Interpersonal violence in the Nile Valley during prehistoric times

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### DISCUSSION

**Nicolas Teyssandier:** I just had one question, a point that may be trivial, but if I understood correctly, you say that Jebel Sahaba is a “specialized” cemetery, in the sense that individuals buried there have, for the most part, died a violent death.

**Isabelle Crevecoeur:** I’m not saying that. It’s a hypothesis, but as we find other sites with identical levels of violence, it’s not my favored one.

**N. T.:** So you think they are representative of what happened to the populations of this region during that period.

**I. C.:** I think so.

**François Bon:** To support Isabelle [Crevecoeur]’s point that this may not be the most likely hypothesis, our main challenge was determining which technical tradition these microliths belong to. Because it is indeed not easy to reconstruct a technical repertoire solely from a functional category like this. Moreover, it is a technology that displays a great deal of diversification. The best point of comparison that we have found is the site of Tushka, and more specifically Tushka B. There are also burials there that have roughly the same rate of lesions and, unlike Jebel Sahaba, it is associated with a residential habitat. This residential settlement is the one that, throughout the region, provides the most compatible technology with the projectiles that also massacred the unfortunate buried at the Jebel Sahaba cemetery. So, we have two neighboring sites, both showing very high levels of violence, but only one (because the other does not have an associated residential area, as it has not been found or at least not excavated) has compatible technology. This suggests that they were indeed killed by people who, in principle, had a technology quite similar to their own.

**Christian Jeunesse:** The diversity of industries is therefore noticeable within the Jebel Sahaba series. Is it a real diversity of industries or a diversity of armatures?

**F. B.:** Armatures.

**C. J.:** That’s not quite the same thing.

**I. C.:** There are two aspects. The first is the regional diversity of these industries, meaning they all make microliths but apparently not in the same way. This has led to the different names of industries that I mentioned earlier. As always, they are, let’s say, micro-cultures. And then there is the diversity of the armatures.

**F. B.:** From the perspective of cultural traditions, this is a very complex moment. In a small region and over relatively short periods of time, we find very different industries. This is the case with what you showed us of Wadi Kubbaniya, where we see an industry that is completely different from that of Jebel Sahaba. Technologically, their foundations are not the same. In this case, it is a little older. There are also things that are closer in time and still very different. That is a reality. The other reality is that, in certain industries like the one represented at Jebel Sahaba and Tushka B, people made quite different things in terms of weaponry. Moreover, you are right to mention projectiles, but given the significant differences in the size and weight of the heads, it seems likely that many of them were indeed used as projectiles. Some, moreover, were armed with a lateral armature, with micro-splinters that would be completely indistinguishable if they had not been found in bodies. Without this evidence, we would have no idea that these elements could have been used to make arrows. Then there are some very large items which, in my opinion, are more likely to have been used as pole weapons. I think they were melee or close combat weapons because they are extremely massive, and it is impossible to see what kind of shaft would allow them to function as light projectiles like arrows.

**I. C.:** You’re right, maybe I should have put more emphasis on those spears.

**C. J.:** What do we know about how long the cemetery was used, apart from the fact that it lasted “a certain time” because there are overlaps?

**I. C.:** Of course, we don’t have C14 chronology. For most of the remains, the dating was done on collagen; the rest was based on bioapatite and that gives discrepancies of several thousand years. In my opinion, it is clear that this cemetery was not used over millenia. It’s more a matter of generations, one or two generations. There is such homogeneity in the practices, if we compare it with Mesolithic sites on which I was able to work in central Sudan, where we have a slightly more precise chronology and where we know that the cemetery was used for a thousand years, for example. So, over this millennium, there was an evolution of practices. You can see differences between the oldest and the most recent graves. Here, in Jebel Sahaba, it’s remarkable: I have never seen a cemetery that was so homogeneous in the way the bodies were laid to rest. I can’t imagine that it was a system that worked for hundreds of years.

**Jean-Marc Pétilion:** I had similar concerns about the chronology. I know very little about this historical context. The diversity of at least some of the lithic industries from this period is astonishing. We have already discussed whether this diversity concerns only the armature or the whole lithic industry, and whether there are other proxies, apart from the lithic industry, that show this diversity. The question is to what extent we can say that these are truly different contemporary groups, or a tight micro-chronology with rapid changes. Given the local contexts and dating difficulties, I imagine this is not straightforward. I also had the same question about the length of time the site was used, because in terms of interpreting the place of violence in people’s lives, it’s not quite the same if this site has been filled in 30 years or 300 years. My last question was about the origin of the violence. For the more recent sites, you said that there is not much data, and that in many cases, the violence could be “domestic” or intra-group violence. Potentially, doesn’t this interpretation also apply to some of the traumas at Jebel Sahaba, particularly for anything related to defensive fractures?

**I. C.:** Of course, these fractures, at least in women, are the most common when it comes to domestic violence. But in the existing documents on this subject regarding these types of domestic violence, particularly in Paleo-Indian cases—which I am referring to for comparative purposes—women show a certain number of skull fractures that are associated with these defensive injuries. Yet here, we have very few skull fractures among women. So, obviously, while we cannot rule out the possibility that some of these are cases of domestic violence, the absence of significant differences between men and women in the rest of the skeleton gives me the impression that these injuries are most likely the result of different reactions to close combat, where men tend to sustain more fractures.

**Jessie Cauliez:** To complete the health approach of these populations—it is therefore somewhat separate from the notion of conflict—we estimate that about 36% of the population was buried without any signs of trauma.

Regarding their health status, did the anthropological study go far enough to give an idea of the pathologies or possible causes death?

**I. C.:** No, we don’t have any specific clues. They show very few stress markers. There are a lot of stress markers in the teeth in the Neolithic period, and some in the Mesolithic period. But here, these populations appear to be in good health.

**J. C.:** I had another question out of curiosity. We see that in many individuals, the projectiles remain embedded in the bones, and the wounds healed. This troubles me, because when someone is injured by a foreign object, it is usually extracted to prevent infection. Yet here, these treatments, which consist of leaving these projectiles in, are recurrent; the wounds heal, and people don’t die from them?

**I. C.:** Yes, it is documented. But there are also infections. I showed one case (a coxal bone), where osteolysis was clearly linked to an infection, despite the beginning of scarring.

**Clément Birouste.** I had a question about defensive fractures of the ulna. If they are located on the right side, rather than a distinction between domestic and non domestic violence, do they not reflect whether the person was armed or not? Considering that most people are right-handed, they would be less likely to defend themselves with their right ulna if they were holding a weapon in their right hand.

**I. C.:** In fact, there is no difference in terms of laterality. Injuries occur just as often on the left as on the right.

**Christophe Darmangeat:** I was surprised that many arrows were shot into the legs, if I understood correctly, which doesn’t seem logical at first glance. Another point, on which I’m going to play devil’s advocate a bit, along the lines of: “We have a good explanation, but is it really the right one?” Here, if we compare the two periods, we see a decrease in violence on the skeletons, and we tend to interpret this as resulting from an objective decrease in violence in social reality. So, if we say that Jebel Sabha was not a specific cemetery for people who were victims of violence, couldn’t it be that in the following period, there simply was a change in funeral practices in which people would have started to reserve special places for those who were killed, and who are precisely the people who have not been found? I’m not just saying this to cause trouble! It’s because in Australia, we have this configuration, with in ethnology people killing each other on a sustained level, while in the few cemeteries available, we don’t find the victims of violent deaths. Why? Because these people received specific funeral treatment. So, is the observed decrease in violence due to an actual decrease in violence or could it be the result of new funeral practices?

**I. C.:** As for the first question, I think it’s less about the legs and more about the thighs and abdomen. The marks are often found in the upper femur and the coxal area. As for the type of trauma that these lithic segments could inflict, the idea is that they were meant to cut. For me, it makes perfect sense: they were aimed at the soft tissues. It’s easier: it’s an easily identifiable area to aim at. Plus,

the projectile penetrates and causes bleeding. Perhaps this was a hunting technique: you target these areas, the animal keeps moving, and you track it until it collapses of exhaustion. That's what I imagine happened. And then, these projectiles, at least in my opinion, couldn't pierce the skull. The only pierced skulls we see are those of children. So perhaps it wasn't very effective to aim for the head, and they preferred to target the soft parts of the body. As for the legs, I think some of the shots were accidental, but there are few marks on the tibias, they are concentrated on the top of the femurs, the coxae—so the viscera. Regarding the question of cemeteries, of course, we cannot exclude the hypothesis you mentioned. But when you look at the meticulous inventory of sites in central Sudan, which has been carried out for decades, since the 1940s with A. J. Arkell, it is really an incredible effort of cataloguing archaeological sites. We have habitation sites, hunting sites, raw material procurement sites; the whole range of site types has been documented. This area is extremely well documented for the Mesolithic. Having worked there, having seen and done this type of prospecting with different teams, I find it hard to imagine that we completely missed this practice, if it was so widespread. The cemeteries available include all age groups, men and

women. They seem to represent the whole population. If there were disaster cemeteries or specific cemeteries, I would be very surprised if a single one had not been identified!

**Pierre Lemonnier:** Three brief comments. The first is that the people I work with use wooden arrows. They know perfectly well that this causes infections. That's why they make them. They say, "It breaks, it makes splinters..." So maybe these bone infections are also visible? The second, we shouldn't underestimate domestic accidents. I once read somewhere the rate of farmers' sons who failed the draft board at the end of the 19th century. It's staggering. People were injured everywhere. So, it's due to the machines, plows which may have fallen on them. But it did happen. Third, of course, some societies treat those who have died a violent death in a particular way. Finally, to play the wise old owl, I was just visited by the ghosts of Creswell, M. Godelier and A.-G. Haudricourt, who told me that if you use the word "technology" the way you do, they will come and pull your feet at night. It is a technical system, a material culture, but technology is the science of productive forces.

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