



## Mace-heads, Childhood, and the Symbolic Construction of Authority in Neolithic Sudan

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رؤوس الهراوات، والطفولة، والبناء الرمزي للسلطة في السودان في العصر الحجري الحديث

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### Abstract

This paper investigates the presence and symbolic significance of mace-heads in Neolithic children's burials in Sudan, focusing on evidence from the cemeteries of R12, Kadero1, and El-Ghaba. In Neolithic contexts, mace-heads are widely regarded as symbols of authority and power, a meaning that persisted into later periods such as Predynastic and early Dynastic Egypt. In Sudan, these objects appear in several distinct forms conical, pear-shaped, ovoid, and biconical and are found in both settlement and funerary contexts throughout the Nile Valley. The manufacture of mace head from hard stone contrasts with the soft-stone examples of Upper Egypt, suggesting regional differences in technology and symbolic expression. Although mace-heads are typically associated with adult male burials, their appearance in a small number of children's graves is particularly noteworthy. At the R12 cemetery, three children aged between 2 and 11 years were interred with mace-heads made of granite or pumice, each accompanied by exceptionally rich assemblages that included unique beads, ivory bracelets, stone tools, pigments, and symbolic animal parts. These elaborate offerings indicate that these children held an elevated social position within their communities. Comparable patterns are observed at Kadero1 and El-Ghaba, where mace-heads occur only in a limited number of richly furnished graves, though none belong to children.

The inclusion of mace-heads in children's burials raises important questions about inherited status, lineage, and the early development of social hierarchy. By examining these cases, this study explores how power was conceptualized, transmitted, and materially expressed in early Nile Valley societies, and how children could embody social identities that extended beyond their biological age.

**Keywords:** Mace-Head, Neolithic, social structural community, symbolic.

### الملخص

تتناول هذه الورقة البحثية وجود رؤوس الهراوات ودلالاتها الرمزية في مدافن أطفال العصر الحجري الحديث في السودان، مع التركيز على الأدلة المستقاة من مقابر R12 الكدرو1 والغابة. في سياقات العصر الحجري الحديث، تُعتبر رؤوس الهراوات رمزاً للسلطة والنفوذ، وهو معنى استمر حتى فترات لاحقة مثل ما قبل الأسرات وبداية عصر الأسرات في مصر. في السودان، تظهر هذه الرؤوس بأشكال مميزة متعددة مخروطية، وكثيرية الشكل، وبيضاوية، ومخروطية وتوجد في كل من المواقع السكنية والجنائزية في وادي النيل. ويُشير صناعتها من الحجر الصلب إلى تباينها مع نماذج الحجر اللين في صعيد مصر، مما يدل على اختلافات إقليمية في التقنية والتعبير الرمزي. على الرغم من أن رؤوس الهراوات ترتبط عادةً بمدافن الذكور البالغين، إلا أن ظهورها في عدد قليل من قبور الأطفال يُعدّ أمراً جديراً بالملاحظة. في مقبرة R12، دُفن ثلاثة أطفال تتراوح أعمارهم بين سنتين و11 سنة، وُضعت على رؤوسهم هراوات مصنوعة من الجرانيت أو الخفاف، ورافق كل رأس مجموعة قيمة من القرايين، شملت خرزاً نادراً، وأساور عاجية، وأدوات حجرية، وأصابعاً، وأجزاء رمزية من الحيوانات. تشير هذه القرايين المتقنة إلى المكانة الاجتماعية الرفيعة التي كان يتمتع بها هؤلاء الأطفال في مجتمعاتهم.

وتُلاحظ أنماط مماثلة في موقعي الكدرو 1 والغابة، حيث وُجدت رؤوس الهراوات في عدد محدود من القبور المزينة بزخارف فاخرة، مع العلم أنه لا يوجد أي منها في مدفن لطفل.

يثير وجود رؤوس الهراوات في قبور الأطفال تساؤلات مهمة حول المكانة الموروثة، والنسب، والتطور المبكر للتسلسل الهرمي الاجتماعي. من خلال دراسة هذه الحالات، تستكشف هذه الدراسة كيفية تصور السلطة، ونقلها، والتعبير عنها ماديًا في مجتمعات وادي النيل القديمة، وكيف استطاع الأطفال تجسيد هويات اجتماعية تتجاوز أعمارهم البيولوجية.

**الكلمات المفتاحية:** رأس الهراوة، العصر الحجري الحديث، المجتمع النيوليوي الاجتماعي، الرمزية.

## Introduction

The presence of mace-heads in Neolithic contexts across Sudan and Egypt has long attracted scholarly attention, particularly because of their recurrent association with authority, leadership, and ritual symbolism. The occurrence of mace-head was in many Neolithic sites in Sudan and predynastic culture of Egypt. The mace heads appear in both settlement debris and funerary contexts (Figure 1), suggesting that their significance extended beyond functional use into the social identity and symbolic expression. The distribution of mace head across the Nile Valley from Upper Egypt to Central and Northern Sudan indicates a shared cultural value in which mace-heads served as potent markers of status, power, or social authority.

In Sudan, mace-heads occur in a variety of morphological types, including conical, pear-shaped, ovoid, and biconical forms. The mace-heads are presented in variable shapes, conical mace head and conical pear-shaped mace head and some differences in finishing and raw material. These variations probably reflect both chronological developments and regional preferences, as well as differences in symbolic meaning in the Neolithic communities in Sudan. Most examples from Sudan were made of hard stone such as granite, quartzite, or pumice contrasting with the soft-stone calcite mace-heads characteristic of the Egyptian Amratian tradition (Ciałowicz, 1989, pp. 261-266) (Leeman, 2019, pp. 1-25). This technological distinction may point to different production systems, resource availability, or cultural choices regarding durability and visual appearance (Ciałowicz, 2011, pp. 325-335).

Archaeological discoveries from several key Sudanese Neolithic sites attest to the widespread presence of mace-heads. At Kadruka 1, multiple examples were documented in both settlement and cemetery contexts (Reinold, 1996, pp. 24-35). At Al-Multaga, mace-heads were also recorded (Geus & Lecoite, 2003b, pp. 33-39) (Welsby, 2000, pp. 51-57), while at Kadero1 (Chłodnicki, 2011, pp. 53-56) (Ciałowicz, 2011, pp. 325-333), a group of 6 mace-head were in the cemetery while 11 was in the settlement debris. El-Ghaba yielded a single mace-head in Grave 176 (Usai, 2015, p. 81), and R12 produced several examples, including those found in children's burials, which form the core of this study (Usai, 2008, pp. 53-58). Additional isolated finds from Qala'at Shanan (Nassr, 2015, p. 163) (Nassr, 2013) and later third-millennium settlements such as Jebel Tomat and Shabona (Clark, et al., 1973, pp. 57-61) further demonstrate the long-lasting symbolic relevance of mace-heads in the region (Salvatori, 2008, p. 135).

The consistent association of mace-heads with high-status individuals or dead with well-furnished burials led many scholars to interpret them as symbols of authority. The significance of mace-head in early late Neolithic sites is that the scholars have strongly suggested the relation between mace-head and the power and authority (Ciałowicz, 2011, pp. 325-335). This interpretation is become more acceptable by the selective distribution of mace heads: which appear only in a small number of graves through the Neolithic cemeteries in Sudan, often accompanied by rich assemblages of unique materials, prestige goods, and ritual paraphernalia. The presence of mace head in funerary contexts suggests that they were not merely utilitarian tools, but objects imbued with social meaning, possibly representing leadership roles, lineage identity, or ritual responsibilities.

The appearance of mace-heads in children's burials is particularly significant. While adult male graves at sites such as Kadero1 and R12 contain mace-heads, in the research we emphasize that the children were also have it in their graves in the Neolithic sites of R12 cemetery in Sudan, while other cemeteries such as Kadero1 and El-Ghaba doesn't shows clear association of mace head with children. This raises important questions about the nature of social status in Neolithic Sudanese communities. If mace-heads symbolized authority, why were they placed with individuals too young to wield power in life?

The R12 cemetery in the North Dongola Reach provides particularly rich evidence for exploring these questions. Dating to around 6000 BCE, R12 contains 166 excavated graves, of which 44 belong to children. Despite poor preservation, the site offers a detailed picture of burial practices, grave architecture, and material culture. The child burials from the R12 cemetery where about 44 child graves represent 26.5% of total 166 excavated graves most of the children burial in this cemetery were elliptical shape (Krzyżaniak, 2011). The consistent use of contracted body positions and the presence of grave goods including beads, pottery, pigments, and tools indicate a structured ritual system (Sadig, 2012, pp. 58 - 93).

Within this broader mortuary landscape, three children's graves at R12 G81, G83, and G142 stand out for containing mace-heads. These burials of mace head are among the richest in the cemetery, containing unique materials such as amazonite, carnelian, ivory, malachite, and symbolic animal parts. Their elaborate assemblages



## Mace head in Neolithic Sites of Sudan

Mace heads specially the Biconical shapes in Sudan were recorded in several sites, at Kadruka 1 Reinold mentioned (Reinold, 1996, p. 33) (Reinold, 2000, p. 58) (Reinold, 2004 a, p. 29). Also, it has been mentioned at El-Multaga by (Geus & Lecointe, 2003b, p. colour palet XXI) and Kadero1 in several adult graves (Ciałowicz, 2011, pp. 325-335) (Krzyżaniak, 2011) (Peressinotto, et al., 2004, pp. 106-112) (Figure 5). Only one mace head were recorded in El-Ghaba in Grave 176 (Figure 4) (Salvatori & Lecointe, 2015, p. 81) El-Kadada (Reinold, 2007) and Qala'at Shanab (Nassr, 2015, pp. 159-176) and Kadero1 (Ciałowicz, 2011, pp. 325-335) Arkell indicates to some mace head in Esh-Shaheinab (Arkell, 1953, p. 49) in R 12 there are a beautiful collection from several graves consist of three mace heads from child burials which are the core of this study (Salvatori & Usai, 2008 a, pp. 53-58). The symbolism of power of mace head has been mentioned in Kadero1 book by (Ciałowicz, 2011, pp. 325-335) (Chłodnicki, 2011, pp. 53-56).

## Mace-head types

The primary categories of mace heads in the Nile Valley have been documented in numerous studies of Neolithic sites, encompassing both settlements and cemeteries. The artifacts in question were unearthed in Egypt during excavations of the sites known as Nagada I and II, as well as in the Fayum region. In Sudan, the artifacts were documented in several neolithic sites such as the Esh-Shaheinab, Kadero1, R12, El-Kadada, and Qala'at Shanab sites. (Nassr, 2015, pp. 106-112) (Nassr, 2012, pp. 8-12) El-Ghaba (Ciałowicz, 1989, p. 261) and Al-Multaga (Geus & Lecointe, 2003b). The following classification system is proposed for the principal types of mace heads:

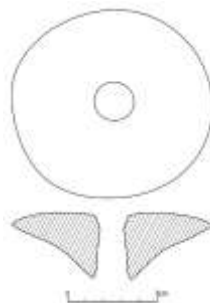
1. Conical Mace-heads.
2. Conical pear-shaped Mace-heads.
3. Ovoid Mace-head.
4. Biconical Punched Mace-head.
5. Desk Shape Mace-head.

A substantial proportion of the mace-heads from Sudan were crafted from hard stone, a notable departure from the methods employed in upper Egypt, where soft stone varieties such as calcite were more prevalent. At Kadero1, four conical specimens are represented, all of which are crafted from hard stone, including porphyry, diorite, and granite. The heads in question are distinguished by a convex upper surface and a sharp edge that is formed at a point between one-half and two-thirds of the way up the body. This is in contrast to Amratian Egyptian forms, which exhibit a bulge only at the top. A close analysis of the Kadero1 specimens reveals a strong resemblance to those from Esh-Shaheinab. (Arkell, 1953) and El-Kadada (Reinold, 2007), reinforcing a Sudanese technological tradition. Their materials and workmanship contrast with the softer calcite mace-heads typical of the Egyptian Amratian culture. They are similar forms appear in Lower Egypt (Fayum and Maadi), suggesting possible long-distance cultural links, potentially mediated through Saharan routes such as Tibesti (Ciałowicz, 2011, pp. 325-335).

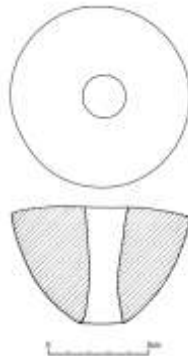
The conical pear-shaped type is more prevalent at Kadero1, with four complete specimens and eleven fragments documented. This type is uncommon in the Nile Valley, but it is well represented at Esh-Shaheinab, where fifteen examples were found. The Kadero1 pear-shaped heads, which are predominantly porphyry, exhibit the characteristic features of a moderately convex upper portion and a diameter that exceeds the height. A preliminary analysis of the fragments reveals the presence of unfinished shaft holes, suggesting that the production at Kadero1 was local rather than imported. The fabrication of mace-heads is exclusively from soft stone, thereby underscoring the preeminence of hard-stone craftsmanship. These mace-heads are situated within broader technological and cultural patterns. The Early Khartoum and Esh-Shaheinab communities utilized bows with great frequency and produced sandstone rings. These rings were previously believed to be mace-head prototypes; however, this hypothesis is rejected in this analysis due to the absence of the requisite sharp edge and durability for impact weapons. (Ciałowicz, 2011, pp. 325-335)

Another notable assemblage of mace heads from Cemetery R12 comprises three morphologically distinct forms: ovoid, biconical, and disc shaped. These forms contribute differently to the technological and symbolic repertoire of the Neolithic Sudan. The single ovoid specimen recovered from Cemetery 81 merits particular consideration on account of its distinctive characteristics, which include the absence of any comparable specimens in both Sudanese Nubia and Central Sudan. This finding indicates that the specimen is unique within the broader archaeological record of the region. The presence of the specimen in question suggests two possible interpretations. Firstly, it could indicate the localized experimentation with novel forms of burial practices. Secondly, it could be the result of the selective acquisition of an unusual prestige object through long-distance exchange. In contrast, the six biconical mace-heads represent the dominant type at R12 and are closely related to well-established Middle Nile tradition documented at Kadruka, Al-Multaga, and Kadero1. This suggests the presence of a shared technological vocabulary and a shared symbolic grammar across Neolithic communities. These biconical specimens, crafted from granite and pumice, exemplify a duality: adherence to a conventional

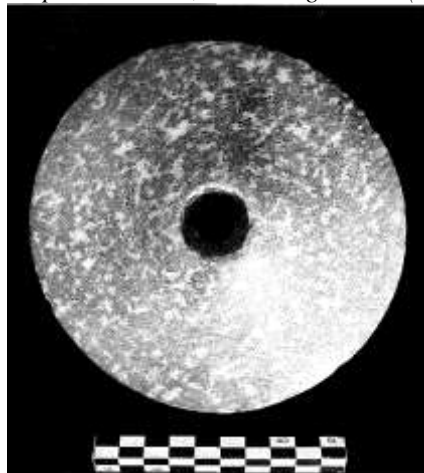
form and adaptability in raw-material selection. This suggests a well-established craft tradition that demonstrates resilience in adapting to the availability of local resources. The mace-head, characterized by its disk-shaped form and the presence of "slightly rising edges around the central hole," finds its closest parallels not at Kadero1 but in Central Sudanese sites such as El-Ghaba, El-Kadada, and Geili. However, the R12 example exhibits more subdued edge relief, suggesting either a localized variant or a conservative reinterpretation of a broader Central Sudanese form. The presence of all three types of blades in the graves of adult males and socially prominent children serves to reinforce their role as markers of authority, inherited status, or ritual identity, rather than as functional weapons. The diversity of forms at R12, ranging from the regionally normative biconical type to the rare disk-shaped variant and the singular ovoid example, highlights the cemetery's participation in both local craft traditions and wider networks of symbolic exchange. This position R12 is an important node for understanding technological innovation, social differentiation, and interregional connectivity in the Neolithic Nile Valley. The distribution of mace head types in Neolithic Sudan, which are uncommon in Upper Egypt but present in Lower Egypt, lends support to the hypothesis of south-to-north cultural diffusion during the late Neolithic and early Predynastic period. The Sudan Neolithic sites assemblage offers substantial evidence for understanding technological innovation, interregional contact, and symbolic weaponry in the prehistoric Nile Valley.



*Figure 2 conical mace-head, Kadero1, grave 130 after (Ciałowicz, 2011, p. 329)*



*Figure 3 conical Pear shape mace-head, Kadero1 grave 66 (Ciałowicz, 2011, p. 333)*



*Figure 4 Example of Conical Mace Head in EL-Ghaba Grave 176 (Salvatori & Lecoite, 2015, p. 81)*



**Figure 5** Example of conical Pear shape Mace Head in Kadero1 - Grave 60 (Krzyżaniak, 2011, p. 99)  
Child burials in R 12 Neolithic Cemetery (North Dongola Reach)

R12 Neolithic Cemetery located in north Sudan to the east of the modern city of Dongola, dates to around 6000 BCE. The cemetery provides valuable insights into the funerary practices and beliefs of the people who lived in the region during the Neolithic period (Welsby, 2000) (Salvatori & Usai, 2008 a). The erosion had a deep effect on the osteological material in the graveyard of the site which makes it relatively difficult to find out the gender of a considerable number of the skeletons of the children buried on the site (Salvatori & Usai, 2008). The state of preservation of the burials was very bad, and the children's burials are even worse than adult ones. Although the varied preservation conditions on the site, the revealed evidence allowed us to reconstruct a general image of the burial practices and the cultural materials of the Neolithic group that occupied the site (Salvatori & Usai, 2008 a).

The child burials from the R12 cemetery were about 44 child graves represents 26.5% of total 166 excavated graves in the site, their graves were simple pit in different shapes, most of the children burial in this cemetery were elliptical shape The dominant shape of the outer pit of the children's graves was the elliptical shape, 22 individuals, which represents over 64% of the total number of graves of the R12 cemetery. (Salvatori & Usai, 2008 a). The burials were found in a different position mainly dominated by the contracted position, which is a frequent practice in the Neolithic period. The amount of the grave goods and deposits indicates that the society of the people who occupied the sites were following a specific ritual pattern. (Salvatori & Usai, 2008 a).

### **Mace head in child's burials**

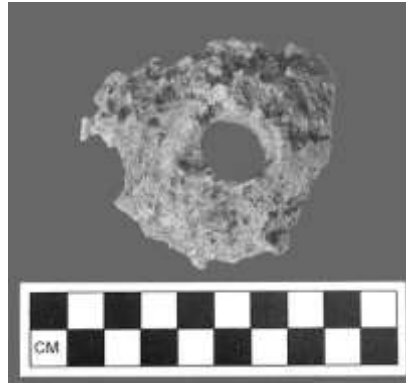
The issue of mace heads in child burials in Sudan Neolithic can be addressed through the lens of the data recorded in very limited cases at cemetery R12 in graves 81, 83, and 142. (Table 1) Four mace-heads were also recorded in R12, in addition to a grave containing children under the age of 10. The fourth mace-head was found in a grave of an adult male. (Figure 6) (Salvatori, et al., 2008, pp. 161-281) The presence of mace heads in children's graves indicates a heightened emphasis on family relations and lineage status. According to R12 Cemetery, individuals between the ages of 18 and 25 possess a limited number of grave goods, while those over 25 possess more valuable ones. This suggests a progressive increase in the value of grave goods and a system explicitly oriented towards the individual. The presence of mace heads in children's graves suggests that they were raised to assume a position of authority in the future.

### **R12 – Grave G81**

A grave of a child aged 7.5–11.5 years (infant 2) (Table 1) and is one of the richest graves in the R12 cemetery. The grave contained an ovoid granite mace head, as: ovoid mace granite. The child was buried in a sub-circular simple pit, oriented E–W, in a right-flexed position. The assemblage is exceptionally contain bowls and a cup, 34 amazonite beads, 28 carnelian beads, 6 additional beads, ivory bracelets, and three finger rings (Salvatori & Usai, 2008, pp. 217-218).

### **R12 – Grave G83**

This grave contains a 7–11-year-old child (infant 2) (Table 1) and is one of the most tool-rich burials which contain 2 axe, 1 hummer, 2 grinding stone, 1 flake, 1 conical mace head. The mace head here is conical, made of pumice (Figure 6), and appears alongside a full toolkit of stone implements. The burial is in an elliptical/oval simple pit, oriented SE–NW, with the child in a left-flexed position. The Grave goods were including a bowl, a necklace of 26 amazonite, 3 carnelians, and 127 white stone beads. Also, ivory bracelets and animal bone splinters (Salvatori & Usai, 2008, pp. 219-220).



**Figure 6** Pumice Mace Head from R12 Cemetery grave 83 (Salvatori & Usai, 2008, p. Plate 16.46)

### R12 – Grave G142

The grave belongs to a 2–2.5-year-old child (infant 1b) (Table 1) and contains a biconical pumice mace head, listed as: 1 Biconical pumice mace head. The burial is a sub-circular simple pit, oriented N–S, with the child in a left-flexed position. The grave goods are exceptionally abundant: a granite pestle, malachite splinters, red ochre, quartz and agate pebbles, bowls, a caliciform beaker, 140 carnelian beads, fragments of ivory bracelets, hippopotamus and cattle teeth, an ivory ring, and goat horns (Salvatori & Usai, 2008, pp. 271-274). The combination of pigments, unique materials, and symbolic animal parts indicates a highly ritualized burial, despite the very young age of the child. Especially the existence of bucrania which it considered as symbolic social statue (Figure 7).



**Figure 7** example of well-furnished child burial with mace head -R12 G 142 (Salvatori & Usai, 2008, p. 271)

**Table 1** Child burials with Mace Head R12 Neolithic cemetery

Site	Grave	Age Category	Mace-Head Type	Material	type
R12	G81	infant 2 (7.5–11.5 yrs)	Ovoid mace	Granite	Ovoid
R12	G83	infant 2 (7–11 yrs)	Conical mace head	Pumice	Pumice
R12	G142	infant 1b (2–2.5 yrs)	Biconical Mace head	Pumice	Pumice

### Results and discussion

#### Results

- Mace-heads in children’s burials are extremely rare and highly selective.
- Children with mace-heads had exceptionally rich funerary assemblages.
- Mace-heads could symbolize inherited authority too, not only achieved power.
- The children’s burials challenge the idea that mace-heads were exclusively male symbols
- Mace-heads in children’s graves reflect early social stratification in Neolithic Sudan.

## Discussion

The presence of mace-heads in a very limited number of Neolithic children's burials in Sudan offers a compelling window into early social differentiation and the symbolic object of authority. A few pieces of mace-head were found in four male graves, and three in children's graves. This rarity alone signals that mace-heads were not ordinary grave goods but highly selective markers of identity. Their distribution across Kadero1, R12, and El-Ghaba suggests that they were reserved for individuals occupying exceptional social positions, whether achieved or inherited. A central issue raised in the text is the question of gender and exclusivity. Traditionally, mace-heads in both Sudanese and Egyptian Neolithic contexts have been interpreted as symbols associated with adult males, often linked to leadership, ritual authority, or martial identity (Cialowicz, 1989, pp. 261-266). The remains of children from the site cannot be sexed, unless the hypothesis of Mace-Head was exclusively for men was right (Salvatori & Usai, 2008, pp. 55-57). The mace-heads in children's graves therefore challenges the assumption that these objects were tied solely to adult male roles. Instead, the mace heads inclusion with young individuals some as young as two years old suggests that the symbolism of authority was not limited to biological capability but could be transmitted onto children through lineage, inheritance, or anticipated future roles. In Kadero1, for example, the quantity and quality of funerary objects deposited clearly indicate social stratification (Chłodnicki, 2011, pp. 53-56) (Bobrowski, et al., 2011, pp. 335-347). This pattern is presented at R12, where the three children's graves containing mace-heads G81, G83, and G142 are among the richest in the cemetery (Salvatori & Usai, 2008, pp. 217-274). These burials include unique beads, ivory bracelets, pigments, stone tools, and symbolic animal parts, demonstrating that the children were embedded within a social framework that recognized and materially expressed differential status. In R12, individuals aged 18–25 had very restricted number of grave goods, while those over 25 had more elaborate assemblages, indicating a progressive increase in the value of grave goods and a system explicitly oriented to the individual. Against this backdrop, the richly furnished graves of very young children stand out even more sharply. The exceptional treatment of children in these graves from R12 suggests that their status was not earned but inherited, pointing toward the existence of lineage-based authority or hereditary leadership roles within Neolithic Sudanese communities.

The symbolic significance of mace-heads in this context becomes clearer when considering the broader cultural associations of the children in this case study. Across the Nile Valley, mace-heads have long been linked to power, ritual authority, and elite identity (Cialowicz, 1989, pp. 261-266). The mace head emerged in Predynastic Egypt as both a practical weapon and a potent ideological symbol. Early examples from Merimde (c. 5500–5000 BCE) show simple rounded or oval stone forms (Leeman, 2019, p. 1), but by Naqada I–II the mace head had diversified into conical, pear-shaped, and double-pointed types. Maces were early considered to be symbolic of kingly power and became embedded in the visual language of rulership. During the late Predynastic period, mace heads were integral to the emerging royal regalia. Some examples from Hierakonpolis, including those of Kings Narmer and Scorpion, depict scenes of ritual, conquest, and kingship (Leeman, 2019, pp. 1-25). This image continued to be depicted on temple walls until the Roman period. Mace heads evolved from utilitarian weapons into powerful visual statements of authority, ritual legitimacy, and the unification of Egypt (Leeman, 2019, pp. 1-25). Their presence in children's graves therefore implies that these young individuals were perceived as bearers of social roles that transcended age. The children probably have been raised to fill the position of the authority in the future. This interpretation aligns with cross-cultural anthropological patterns in which children of elite lineages are symbolically marked from birth as future leaders, ritual specialists, or inheritors of social privilege. The consistent richness of the children's graves containing mace-heads reinforces the argument that these objects functioned as emblems of inherited status. None of the graves of child burials with mace-heads were in poor situation of furnishing. This uniformity suggests a deliberate and socially recognized practice rather than isolated or idiosyncratic behaviour. In sum, the discussion highlights that mace-heads in children's burials represent a powerful indicator of early social complexity in Neolithic Sudan. Their selective distribution, association with richly furnished graves, and symbolic ties to authority all point toward the existence of hereditary status systems in which children could embody social identities far beyond their biological age.

## Conclusion

The rarity and selective distribution of mace heads in Neolithic Sudanese burials especially those of children provides strong evidence for early forms of social hierarchy and inherited authority. Although traditionally interpreted as symbols associated with adult male power, their presence in a very small number of children's graves challenges this assumption and demonstrates that these objects carried meanings that extended beyond gender or biological maturity. The richly furnished child burials at R12, which include unique ornaments, pigments, stone tools, and symbolic animal parts alongside mace heads, indicate that these young individuals occupied socially elevated positions that were unlikely to have been achieved through personal accomplishment. Instead, the pattern strongly suggests inherited status or lineage-based authority.

Comparative evidence from Kadero1 and El-Ghaba reinforces this interpretation, as mace heads appear only in a limited number of high-status graves, further emphasizing their role as elite markers. When viewed within the broader Nile Valley tradition where mace heads symbolized leadership, ritual authority, and emerging political

power their inclusion in children's burials implies that these individuals were recognized as future leaders or inheritors of privileged roles. Overall, the evidence points to the existence of hereditary social structures in Neolithic Sudan, where children could embody and express identities far beyond their age.

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### Compliance with ethical standards

#### Disclosure of conflict of interest

The authors declare that they have no conflict of interest.

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