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VIRTUAL AUTOPSY OF A FUNERAL *MUZIDI BEMBE* DOLL : INTEREST OF IMAGING FOR ANALYSIS OF PRIMITIVE ART OBJECT

AUTOPSIE VIRTUELLE D'UNE POUPÉE FUNÉRAIRE MUZIDI BEMBE : INTÉRÊT DE L'IMAGERIE MÉDICALE POUR L'ÉTUDE DES OBJETS D'ART PREMIER

Abstract

The aim of our study was to carry out the radiographic examination of a funeral doll from the Democratic Republic of Congo named *Muzidi*. The goal is to improve our knowledge of magical-religious rituals of Central Africa. Radiological examination was performed on this ethnographic object through X-Ray using a flat panel detector Primax Clisis©. All X-ray images have been read on plain film and on a diagnostic workstation by both a medical anthropologist and a radiologist. These radiographic and macroscopic studies bring to light many undetermined objects inserted into *Muzidi* and some surface modifications. The symbolism of the studied *Muzidi* makes us ask questions about the origin of this practice, and of the doll itself, by linking such discoveries with the ethnographic data to understand the use, purpose, and fabrication process of this artifact and the potential connection between ethnic groups. Medical imaging is essential for the understanding and interpretation of these rituals, and allows us to distinguish potential commercial and traditional links between ethnical groups.

Résumé

L'objectif de notre étude était de réaliser l'examen radiographique d'une poupée funéraire de la République démocratique du Congo, nommée *Muzidi*, afin d'améliorer notre connaissance des rituels magique-religieux de l'Afrique centrale. Un examen radiologique a été effectué sur cet objet ethnographique à l'aide des rayons X du détecteur Primax Clisis©. Toutes les images de rayons X ont été lues et diagnostiquées par un anthropologue médical et un radiologue. Ces études radiographiques et macroscopiques mettent en lumière de

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nombreux objets indéterminés insérés dans la poupée *Muzidi* ainsi que certaines modifications de surface. La symbolique de la *Muzidi* étudiée nous amène à remettre en question l'origine de cette pratique et de la poupée elle-même, en reliant ces découvertes aux données ethnographiques pour comprendre l'utilisation, le but et le processus de fabrication de cet artefact et le lien potentiel entre les groupes ethniques. Ainsi, l'imagerie médicale est essentielle pour la compréhension et l'interprétation de ces rituels et nous permet de distinguer les liens commerciaux et traditionnels potentiels entre les groupes ethniques.

Introduction

Central Africa, specifically countries like Cameroon, the Democratic Republic of Congo, Nigeria, and Chad, is characterized by the ethnical multiplicity spread in groups or subgroups which have many animistic traditions represented by a large collection of deities. However, when we look at some practices, and especially funerary practices, we observe that a common nucleus related to the ancestral cult link these communities. Traditional myths say that the first human being, named *Mahungu*, was a complete being with both genders and was a duplicate of God possessing all of the deity's knowledge. *Mahungu* "proved to be irresponsible, god withdrew and allowed human beings to suffer without his constant attention and care", but with pity, God granted them death so they could return and become a God (1). The ones who succeeded, by effort and will, became a new *Mahungu*. Owing to their supposed closeness to God, the deceased must be honored.

To honor a powerful decedent, but also to assure protection and prosperity of the community, the *Bwendé* group makes *Niombos*. *Niombos* are big funeral figures created by wrapping the full body of the deceased, previously dried, in several layers of tissue until it is upwards of three meters high. This practice is also made in a medium model (1). So, among *Bembé*, people from the Democratic Republic of Congo qualified, according to the ethnical maps, as a group or subgroup of the Kongo group (2). To these people, it is important to honor the ancestors, which hold an important place in *Bembé* traditions (3), by using funeral dolls called *Muzidi* (*Muziri* or *Mudziri*). These artifacts are anthropomorphic reliquaries of textile which provide protection, as well as unity of family or community members around an old spirit in cases of need, by the conservation and preservation of relics, such as nails, hair, and skin, of a decedent deemed powerful, like a respected chief, a wise sage, or a fruitful woman. These effigies must be able to move because its movements are interpreted as an answer to a question asked. The procurement of the relics is performed by a diviner-healer named *nganga*, after the burial, during the *Kitu* ceremony where the body is exhumed. The time between the burial and the exhumation can vary from a few days to one year.

These *Bembé* reliquaries are brought to the *nganga* and can be made in advance and sold, or made at the request of the family or of the deceased himself. The *Bembé Muzidi* are decorated with pearls and adorned with necklaces and made with red or blue fabric of European origin. The use of imported materials supposedly adds

some prestige to the *Muzidi*, which is a way to further honor the deceased, but also to assure the protection of the familial lineage or community. The importation of materials from other African areas, like the *Kasai* velour, is also honorific for the deceased and used for *Muzidi* fabrication (4). Apart from their general position which is seated with the torsos and the limbs extended (5), the choice of the colors, and the type of relics used, little is known about the exact fabrication process of the *Muzidi* remains and little is written in the ethnographic data. We will try to obtain this knowledge through biomedical tools, like radiography, as was done for Voodoo dolls (6).

The ethnical artifact and the medical tool



Fig. 1 to 4 :
*The Muzidi
Bembé doll.*



The *Muzidi Bembé* (Fig. 1 to 4), composing the corpus of our study, come from a private collection, and have been examined by CT-Scan and radiography using a flat panel detector Primax Clisis©. An a.p. X-ray image was obtained at 50 kv. All X-ray images have been read on plain film and on a diagnostic console by both a medical anthropologist and a radiologist. The studied *Muzidi*, 32 centimeters tall, is presented in seated position with the head oriented downward, upper and lower limbs stretched and joined at the ends. The *Muzidi* is made of brown fabric. However, a dark ocher was used for the head and for two coverings on the left arm and the back of the *Muzidi*. The different parts representing the arms, the torso, and the legs are sewn to each other. Only a necklace of woven straw, resembling a rope, is affixed as ornamentation. The mouth and ears are represented by a wrap fabric sewn onto the head surface. Some depictions resembling sexual attributes are observed at the chest and the crotch.

The CT-Scan images show a rigid vegetal filling and the presence of items within the filling. The first item (6.6 mm X 5.6 mm and 2.9 mm thick) located at the cephalic end (Fig. 5) present an arched shape. Although weak, its density is evaluated around 338 UH. The second item (2.6 mm thick and 5.3 mm long) seems fragmented (Fig. 6) and is located in the left arm of the *Muzidi* with a density around 341 UH. Although the reduced dimensions prevent a 3D reconstitution, the weak density and the morphology of these deposits in the filling exclude the hypothesis of bone or metallic items. However, it could be nails or little items belonging to the decedent. Furthermore, although the potential presence of hair cannot be distinguished, it cannot, however, be excluded. *Muzidis* are generally composed of a wooden armature and a filling made from banana tree leaves, fibers, and liana vines. The firmness of the *Muzidi* and the morphology of the filling observed during the CT-Scan show us that it cannot be a cotton filling, but the rigidity and its fibrous appearance confirm the potential presence of leaves and lianas. At last, the CT-Scan images have shown no wooden armature.

From the virtual autopsy to the ethno-anthropological proofreading

The sexual diagnosis is not evident considering the frequent absence of sexual features and the occasional anthropo-zoomorphic aspect of some *Muzidis*. The fabric used doesn't seem to be a piece of cloth belonging to the deceased and doesn't take part of the strict identification process (5), but does seem to allow a sexual distinction thanks to the usage of dark blue which is the traditional color of *Bembé* men (7).

In the context of the studied *Muzidi*, the sex determination is complex; the little protrusions present on the chest seems to be similar to a young chest that has not breastfed, but the presence of a potential phallus on the lower abdomen can however lead to the interpretation of a hermaphrodite case. Indeed, in the *Kongo* mythology, the distinction between man and woman was done after the split of

Mahungu, the first human being who was unique, complete, the equal of God with both genders (8). The *Muzidi* can be a tribute to the punishment of *Mahungu*. However, it's important not to draw hasty conclusions: a possible hypothesis regarding the association of two opposite sexual features would be that the *Muzidi* was made for a person with an umbilical hernia, which could justify the lower abdomen outgrowth. In the case where it would be a man, the chest lumps could represent, by their small size, a male chest.

The position and the color of the *Muzidi* also pose some questions because, like their neighbors, the *Bwendé*, these funeral dolls are in a rather cheerful posture, standing (sometimes seated) with the right arm up to the sky, the other arm pointing to the earth and made from bright colored fabric. The studied *Muzidi* stands out because of the sober fabric used and by its position, which shows a state of muscle weakness. As previously said, the *Muzidi* must not be static because it should be able to move when used in cases of consultation. The peculiarity of the studied *Muzidi* is the union of the upper and lower limbs which prevent mobility. The association of the position, the absence of ornamentation, and the presence of a rope around the neck can suggest an enslavement or detention posture, like the execration statues.

These questions about the position and the fabric color of the *Muzidi* could be answered by referring to the funeral dolls of the *Fali*, who are a North-Cameroon people belonging to the big *Kirdi* group. Several similarities link both traditions: the use of drab fabrics and the absence of ornamentation, with the exception of some cowries to form the face or the headdress. The position of the *Muzidi* is also reminiscent of the deceased posture of *Fali* entombments, named *gébus* (9). The bodies were wrapped with cotton and beef bands, and put in tombs with tronconic form in seated posture, forward extended legs and arms, and with the head in goat remains. These similarities can allude to the possibility of commercial exchanges between *Fali* and *Bembé* groups, perhaps with the purchase and reuse of a *Fali* doll by a *nganga Bembé*. This hypothesis of commercial exchanges is confirmed more by the presence of dark ocher fabric at the exact same places than the presence of items in the filling. So, the *nganga Bembé* could buy a funeral doll from the *Fali* people, perhaps making some cavities in the fabric or changing the head to insert relics from the deceased inside the filling. Considering the absence of items at the back where a covering is present, we can imagine that the purpose of this opening is to insert hair or some relics not visible by the CT-Scan, or to change out part of the filling. The cavities were closed by this new dark ocher fabric.

Conclusion

The use of biomechanical tools, and in this case, the radiographic and CT-scan examinations, was necessary to understand these kinds of ethnological artifacts. Indeed, this virtual "autopsy" allows us not only to preserve the integrity of the

doll, but also to create a new questions field, particularly about the origin of the artifact. By the macroscopic and radioscopic studies of the *Muzidi*, we were able to distinguish commercial exchanges between two groups geographically distant but traditionally close.

References

1. Bookie S, *Death and the Invisible Powers : The World of Kongo Belief*. Indiana University press, Bloomington, 1993.
2. Kitsimbou X. *La démocratie et les réalités ethniques au Congo*. Political science. Université Nancy II, 2006.
3. Vogel S (ed.). *For Spirits and Kings : African Art from Paul and Ruth Tishman Collection*. The Metropolitan Museum of Art, New York, 1981.
4. Aurélien Gaborit, *Muziri, mannequin funéraire Bembé, Congo*, Conférence du 09/01/11 au Salon de lecture Jacques Kerchache au Musée du Quai Branly.
5. LaGamma A, *Eternal Ancestors : The Art of the Central African Reliquary*. The Metropolitan Museum of Art, 2007.
6. Augias A, Benmoussa N, Jacqueline S, Nogel Jaeger J, Muller AL, Charlier P. Haitian voodoo dolls revealed by X-ray : From radiology to medical anthropology. *Journal of Forensic Radiology and Imaging* 2015 ;3 : 221–225.
7. Kuyk B.M, *African Voices in the African American Heritage*. Indiana University press, Bloomington and Indianapolis, 2003.
8. Kabasele Lumbala F, *Renouer avec ses racines : chemins d'inculturation*, Karthala Editions, Paris, 2005.
9. Gauthier J-G, Organisation des nécropoles et tradition orale : l'exemple du pays Fali Nord-Cameroun, *Bulletin et mémoires de la société d'anthropologie de Paris* 1990 ;2(3) : 201-207.

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Fig. 5 : CT-Scan of the Muzidi Bembé doll showing the item located at the cephalic end.

Fig. 6 : CT-Scan of the Muzidi Bembé doll showing the item located in the left arm.

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