CASE REPORT

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# Portrait of the 'Temple Child', a missing-link in the case of Louis XVII

**Abstract** The corpse of Louis XVII was autopsied in 1795 in order to leave no doubts as to the cause of his death in a troubled revolutionary period. It was searched in 1846 for identification purposes, but the estimated age of the subject unearthed did not fit. However, a forensic facial reconstruction on the skull showed a resemblance with Louis XVII that supports the theory of a substitution plot in 1795.

**Key words** Louis XVII · Facial reconstruction

**Zusammenfassung** 1795 wurde die Leiche des Louis XVII obduziert, um in einer turbulenten revolutionären Epoche keinen Zweifel an seiner Todesursache aufkommen zu lassen. Sie wurde 1846 für Identifizierungszwecke untersucht, aber das geschätzte Alter von dem ausgegrabenen Subjekt paßte nicht. Jedoch zeigte eine forensische Gesichts-Rekonstruktion am Schädel eine Ähnlichkeit mit Louis XVII, dieses unterstützt die Theorie von einem Austausch-Komplott im Jahre 1795.

**Schlüsselwörter** Louis XVII · Gesichts-Rekonstruktion

## Introduction

Facial reproduction has emerged as an increasingly useful tool in forensic anthropology. Coupled with other evidence, the technique can be used to demonstrate that a skull could, or could not, belong to a particular person. This report sums up the history of the forensic case of the titular King of France from 1793 and presents the restorative details for facial reproduction concerning the skull that has been attributed to the King.

The Commune de Paris, an insurrectional organization, selected the Temple to imprison King Louis XVI and his

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family on the 13th August 1792. On the 21th January and the 16th October 1793, Louis XVI and Queen Marie-Antoinette were beheaded, Louis XVII was in the future completely isolated from other family members. On the 8th June 1795, a boy assigned to be Louis XVII died in the Temple prison. Today, the contradictions of the circumstances and of the documents on the death have not yet been solved. The facial reconstruction provides a unique opportunity to compare the skull of the young Temple prisoner and portrait evidence of Louis XVII.

## Historical description

In 1795, Louis XVII was 10 years old but Deputy Bergoeing, President of the General Safety Committee who signed the autopsy order on the day of death [1], has later testified that the boy was then about 13 years old [2]. Furthermore, only 2 doctors out of the persons who authenticated the corpse had had direct acquaintance with the subject, and then only few days before his death. The autopsy was conducted by Drs. Demangin, Pelletan, Lassus and Jeanroy, to acertain the causes of the death but not the identity of the subject. The corpse presented a scrofular constitution and a form of tuberculosis was evidenced by tumoral changes in the elbow, wrist and knee joints, which was consistent with the royal family history of tuberculosis. A disproportion in the limbs accompanied a feeble constitution. The corpse was then buried at Sainte-Marguerite cemetary, where it was searched for identification purposes in 1846 [3]. A diagnosis of autopsy stigmata, and specially the particular skull section, as described by Dr. Pelletan, was crucial for the skeleton assessment. Drs. Milcent and Recamier made an examination of the bones and, in 1894, Drs. De Backer, Bilhaut, Manouvrier and Magitot made an anthropological description that affirmed that the bones belonged to a boy 14–20 years old [4]. The age did not fit the identification of the son of Louis XVI, so new attempts were made in 1979 to find other skeletal remains: the operation was not successful [5].

## Materials and methods

The method of reconstruction was made from a face sketched from the skull. Three-quarters right and left profiles, photographic views and frontal drawings of the skull recorded in 1894 were used to identify anatomical details specific to the candidate (Fig. 1 and Fig. 2). George [6] has described a procedure based on tracing over lat-

**Table 1** The 21 standard features from Harmon I10I, the selected from the skull analysis are underlined

| Hair: | coverage, length, texture, shade |
|---|---|
| Forehead: | shape |
| Eyebrows: | weigh, separation |
| Eyes: | opening, separation, shade |
| Ears: | length, protrusion |
| Cheeks: | shape |
| Nose: | length, tip, profile |
| Mouth | upper lip, lower lip, lip overlap, width |
| Chin: | profile |

**Table 2** Estimated dimensions of the skull in mm

| Glabello-occipital length | 160 |
|---|---|
| Maximum cranial breadth | 136 |
| Cranial indice | 85 |
| Bizygomatic breadth | 115 |
| Maximum frontal breadth | 110 |
| Minimum frontal breadth | 80.5 |
| Biorbital breadth | 90 |
| Bipupilar breadth | 51.8 |
| Maximum canine breadth | 40 |
| Interorbital breadth | 17 |
| Orbit breadth | 38.5 |
| Orbit height | 29 |
| Orbital index | 75 |
| Nasion-gnathion | 106 |
| Nasion-prosthion height | 62 |
| Total facial index | 92 |
| Lower jaw | |
| Total length | 101 |
| Bicondylar breadth | 120 |
| Bicondylar intern breadth | 83 |
| Bigonial breadth | 102 |
| Symphyseal height | 25.5 |



**Fig. 1** A three-quarters right profile photographic view recorded in 1894



**Fig. 2** Frontal view of the skull showing the selected points and lines of reference



**Fig. 3** Louis XVII in 1793 by Joseph-Marie Vien

eral craniographs. We have used the method in the elaboration of the facial profile. Data was collected by comparing photographs and drawings for each feature. Analysis of the facial features were first made by locating the appropriate facial landmarks on the skull representations according to Howells [7], and measuring the distances between landmarks. Points and lines of references of the skull were traced to 'flesh out' the facial profile using cutaneous segments as indicated by Fenart et al. [8]. Measurements of facial tissue thicknesses are from caucasoid children made by Dumont [9]. Indices were calculated to avoid the problem of differences in facial angle seen in each representation. The purpose was to extract enough typical facial characteristics to make comparisons possible, the drawing reconstruction only intends to delineate cephalic and facial details.

Out of 21 standard features selected by Harmon to identify faces by features description [10], 15 could be 'extracted' from skull analysis (Table 1). Face reproduction is a search for a 'target' face and experimentation has proved that the procedure of recognition of faces by the computer binary sorting process requires no more then 10 steps out of the 21. Further steps are not useful to make the distinction between two faces – the purpose of the present work [10]. Using the component drawing approach, we shaped the face corresponding to the skull as described by Gatliff [11] and Rogers [12]. The components were brought together in the appropriate locations and estimated dimensions (Table 2) to produce the two-dimensional drawing [13].

A careful historical research by Laurentie in multiple portraits of Louis XVII and their comparison gave identity factors [14]. A painting made by Joseph-Marie Vien in 1793, that belongs to the Museum Carnavalet in Paris, is of special value because of the near date with death and the paint quality (Fig. 3).

## Results and conclusions

The head was narrow, total facial index 92, with a high occiput. The occipito-frontal proportions were also very short and the face comparatively well developed. The forehead was receding with a rounded upper part, the cheekbone and orbital regions were rather remarkable because of the low frontal breadth. Skull photograph analysis suggested that due to a maxillary deficiency growth, the base of the nose and the mouth were erected in a narrow cylindrical form and the lower protruding jaw had a juvenile front triangular form. In addition the forward tilt of the central incisors and the protruding chin, completed a distribution of the skull features which made the general identity of the candidate possible (Table 3).

Fortunately for the facial reconstruction, the central incisors were prominent, and the 2 lateral and canine teeth were compressed in such a manner that the breadth of the front teeth was reduced. Due to the importance of the front dentition in the control of the shape of the mouth, we can infer that the lips were bowshaped because of the great front teeth curve. If we consider the canine position compared to the bipupil distance, the mouth is short. With an index of 44, the nose, that has a medium projection, is narrow and long governing the facial expression and a prominent upper lip (Fig. 4).

Since tooth development is more closely associated with chronological age than the development of most other skeletal parts, eruption of the teeth are used extensively in ageing. The following information of odontological characteristics from the identification attempts in 1846 and 1894 [3] are diagnostic: the third molars of the

**Table 3** Chart of the shared features by the 'Temple Child' and Louis XVII

| | |
|---|---|
| Hair coverage: | rounded upper frontal |
| Forehead: | receding, medial bulging |
| Eybrows: | high, separated |
| Eyes: | wide separation, large contour |
| Cheekbones: | prominent |
| Nose: | narrow, long, without root depression |
| Mouth: | small, bow shaped |
| Chin: | protruding, depressed junction lip/chin |
| Gonial angle: | juvenile, eversed |



**Fig. 4** The reconstructed portrait of the 'Temple Child' assigned to be Louis XVII in 1795 – database 'Mozart' by Greuze Leresche Nussbaum C. G.

skull had not yet erupted and had incomplete root formation. If we consider the marked masculine traits, such as the orbital index of 75 and the mandible size (length 101 mm, bigonial breadth 102 mm), the weak dimensions of the cranium (glabello-occipital 160 mm, breadth 136 mm) this is a juvenile aspect that fits with an age range of 13–16 years. Table 3 summarizes the anthropological traits shown in the forensic portrait that forms an identifiable silhouette that we compared to the facial traits of Louis XVII. The resemblance of the traits render a possible hypothesis that Louis XVII was not dead in 1795 but was replaced by another who died on June 8, 1795. A position that raises the question: what happened to Louis XVII?

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