doi 10.4436/jass.97010

JASs Historical Corner
Journal of Anthropological Sciences
Vol. 97 (2019), pp. 135-138

The circle of Gánovce: natural history of an endocast

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The natural endocranial cast of Gánovce was found in Slovakia in 1926, and then stored in the National Museum (Národní Muzeum) of Prague. The endocast was extensively studied by Emanuel Vlček (1925-2006), mostly during the 50s and 60s of the past century (e.g., Vlček, 1949, 1953, 1955, 1969), with a large set of analytical tools including radiographic and biochemical surveys, and outline shape analysis. He recognized the Neanderthal morphology of the cast, which was dated to 105 ka and which has an estimated volume of 1320cc. In particular, Vlček noticed a similarity with specimens such as Krapina 3, Gibraltar 1 and Saccopastore 1. In fact, these three specimens all display a similar overall cranial anatomy, being possibly representatives of an "early and small-brained" Neanderthal morphotype (Bruner & Manzi, 2006, 2008).

Probably because of this similarity, during the anthropological congress of Paris in 1960, Emanuel Vlček gave a replica of Gánovce to Sergio Sergi (1878-1972), who held the chair of Anthropology at the University of Rome between 1916 and 1948, and was directly involved in the preservation and study of the Neanderthal crania from Saccopastore (e.g., Sergi, 1929, 1948). Vlček reputed Sergi as a "friend and mentor" (Vlček, 1995). At that time, Sergi was 82, and the cast was deposited in the Museum of Anthropology of the university, adding a new specimen to the endocranial collection of the institute. Figure 1 shows the natural cast of Gánovce compared to the mould donated to Sergi. Figure 2 shows Emanuel Vlček with the committee in charge of the evaluation of the Gánovce endocast. Figure 3 shows Sergio Sergi with the Saccopastore 1 skull. We enter this story in the next step.

The endocast collection in Rome was reordered in the mid-80s by Giorgio Manzi who, ten years later, was the tutor of the PhD thesis of Emiliano Bruner. The thesis was a comprehensive paleoneurological survey of the genus *Homo*, which employed computed methods recently developed at that time, including digital anatomy and geometric morphometrics (Bruner *et al.*, 2003). However, the endocast of Gánovce was very difficult to interpret (the original cast is almost complete, but the surface is irregular and heavily damaged, and the literature was hard to find or to translate). Thus, unfortunately, it was the only cast excluded from the study.

However, by chance, fifteen years later, Bruner began a collaboration with Stanislava Eisová and Hana Píšová at the Department of Anthropology of the National Museum in Prague, where Petr Velemínský is the successor of Vlček. Velemínský showed the original Gánovce endocast to Bruner, and they decided to work on a revision of the specimen, which, mostly due to language barrier, is still largely unknown to the international scientific community. The report has been now published in this current issue of the Journal of Anthropological Sciences (Eisová *et al.*, 2019), a journal that – incidentally – was founded by Giuseppe Sergi, the father of Sergio.

To sum up this strange circle of events, the story was as follows: Emanuel Vlček studied Gánovce and gave a cast to Sergio Sergi, who brought it to Rome in order to include it in an endocast collection that was subsequently

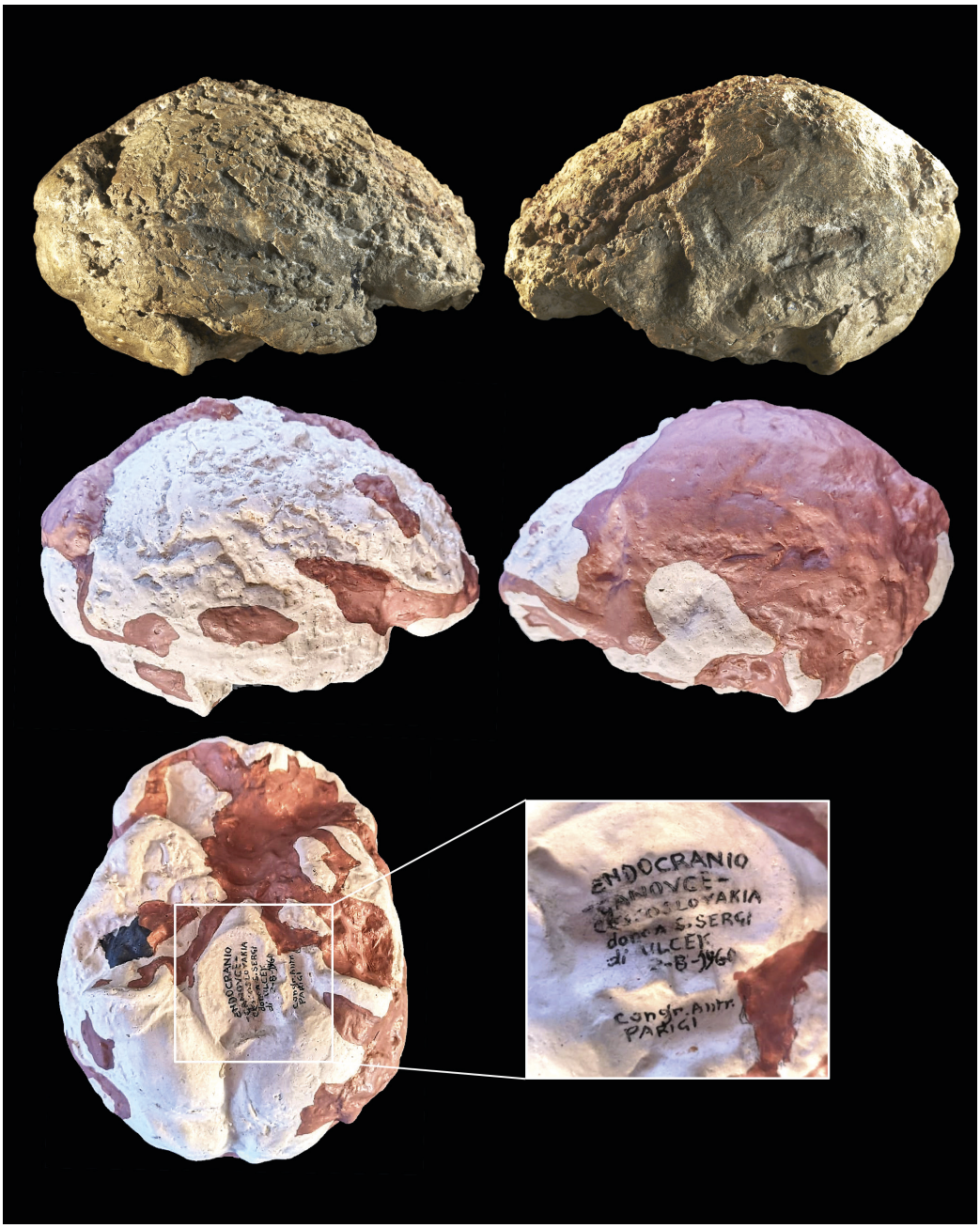

Fig. 1 - The original endocranial cast from Gánovce (top) and the cast donated by Vlček to Sergi. The parts coloured in pink roughly show the surface with mineralized cranial bones. On the foramen magnum, there is an inscription (in Italian): Endocranium – Gánovce – Czechoslovakia. Gift to S. Sergi from Vlcek. 2-8-1960. Congr. Anthr. Paris. The colour version of this figure is available at the JASs website.

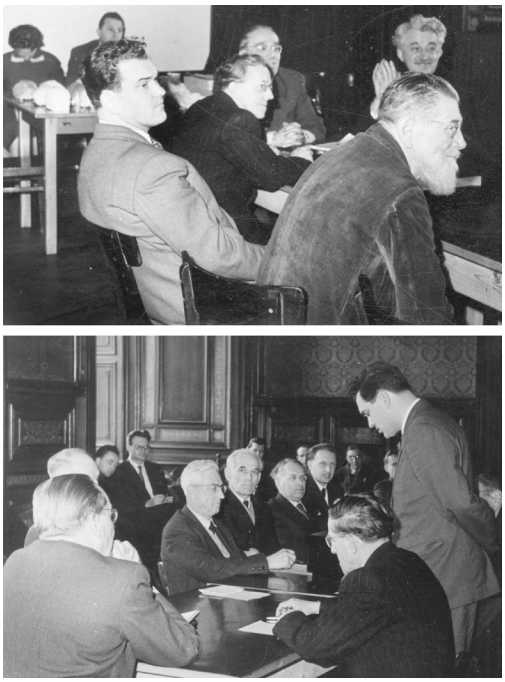

Fig. 2 - The international committee which confirmed the Vlček conclusions that the endocast belongs to a Neanderthal (June 17th-23th, 1958, National Museum, Prague). In the image above, Vlček is on the left, while the man on the right was Jaroslav Petrbok, the Czech amateur naturalist who collected the cast of Gánovce from the site. In the image below, Vlček is standing in front of the committee. Images courtesy of Petr Velemínský, Archives of the Department of Anthropology, National Museum, Prague.

Fig. 3 - Sergio Sergi, with the Neanderthal cranium Saccopastore 1.

managed by Giorgio Manzi, and then studied by Emiliano Bruner, with the specific exclusion of the Gánovce mould. Nonetheless, Bruner accidentally met the original specimen many years later, and collaborated with the successor of Emanuel Vlček, Petr Velemínský, in order to publish a study of the cast in the journal founded by the father of Sergio Sergi, and directed by Sergio Sergi himself for decades. A curious circle, indeed, that has finally been closed after half a century.

Paleoanthropology has a feature that is absent in most scientific disciplines, being instead more common in arts and humanities: every part of its history is firmly tied to a specific item, namely it moves together with a particular fossil. Research, personal occurrences, and other social factors (including funding and publications) are thus intimately associated with a physical object, which bears witness to a long historical trajectory. Taking into account the average life expectancy of a person (a few decades), and the average life of a fossil (hundreds of thousands of years or even more), we are but momentary keepers of these mineralized specimens. They move from hand to hand, through centuries and institutions, loaded with a long historical burden. Sometimes all these stories criss-cross one another strangely, generating bridges between people who lived in different places, and in different epochs. Which is, in fact, the ultimate aim of paleontology: going back and forth through time and space to link the past with the present, and descendants with their ancestors. In many cases, like this one, it is a privilege – and a pleasure – to be part of this progression.

Acknowledgements

This paper is supported by the Italian Institute of Anthropology and under the patronage of the Museo di Antropologia "Giuseppe Sergi" of the Sapienza University of Rome. We would like to thank Stanislava Eisová, Petr Velemínský and the Národní Muzeum for their collaboration and friendship. This article is dedicated to Sergio Sergi, to Emanuel Vlček, and to an unknown Neanderthal who lived one hundred thousand years ago.

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Editor, Giovanni Destro Bisol