

Tenchini's legacy as a starting point for the reconstruction of the history of a criminal in the 19th century

L'eredità del Tenchini come punto di partenza per la ricostruzione della storia di un criminale del XIX secolo

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OPEN ACCESS

Double blind peer review

How to cite this article: Lusetti A. et al. (2022). Tenchini's legacy as a starting point for the reconstruction of the history of a criminal in the 19th century. *Rassegna Italiana di Criminologia*, XVI, 1, 06-11.
<https://doi10.7347/RIC-012022-p06>

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Received: 11.03.2021
Accepted: 22.06.2021
Published: 31.03.2022

Pensa MultiMedia
ISSN 1121-1717 (print)
ISSN 2240-8053 (on line)
doi10.7347/RIC-012022-p06

Abstract

Late in the 19th century, physician Lorenzo Tenchini undertook a study of criminal subjects and psychiatric patients. One of these was B.A., a 22-year-old soldier who committed suicide after attempting to kill his lover, a prostitute named G.I. The starting points of this study were the analysis of the subject's biography – data which resulted from the autopsy – and several observations on his brain and skull in accordance with the phrenological doctrine of that time. The goal of this work was to shed new light on an Italian criminal of the late 19th century and on Tenchini's work, combining the material collected by the doctor himself with sources of the period and modern medical knowledge.

Keywords: criminology, medical history, tenchini's mask, forensic pathology, phrenology.

Riassunto

Alla fine del XIX secolo, il Dottor Lorenzo Tenchini intraprese uno studio su soggetti criminali e pazienti psichiatrici. Uno dei soggetti analizzati era B.A., un soldato di 22 anni che morì dopo aver tentato di uccidere la sua amante, una prostituta di nome G.I. I punti di partenza di questo studio sono stati l'analisi della biografia del soggetto, i dati emersi dall'autopsia e diverse osservazioni riguardanti il suo cervello e il cranio compiute secondo la dottrina frenologica dell'epoca. L'obiettivo di questo studio era di gettare nuova luce su un criminale italiano di fine '800 e sull'opera del Dottor Tenchini, unendo il materiale raccolto dal medico, con fonti dell'epoca e le moderne conoscenze mediche.

Parole chiave: criminologia, storia della medicina, maschere del Tenchini, patologia forense, frenologia.

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Introduction

In the second half of the 19th century, the process of industrialization of Western society led to the rise of various social issues such as the exploitation of workers, homelessness, increased social inequality, and criminality. In accordance with the positivist philosophy of that time, science stepped in by analyzing the causes and origins of these phenomena. The birth of the phrenological doctrine by the German scholar Gall and his disciple Spurzheim was part of this context (Simpson, 2005). They assumed that mental functions (such as wisdom, kindness, courage, pride, prudence, memory, skill in the arts, and inclination to commit crimes) were located in specific portions of the brain, which they called “organs”. They also believed that the development of such brain organs impacted their dimensions and that a well-developed organ would cause a bulge in the overlying skull. Thus, the analysis of the protuberances of the skull and the conformation of certain regions of the brain became a mean of assessing the innate personality of an individual (Fig. 1).

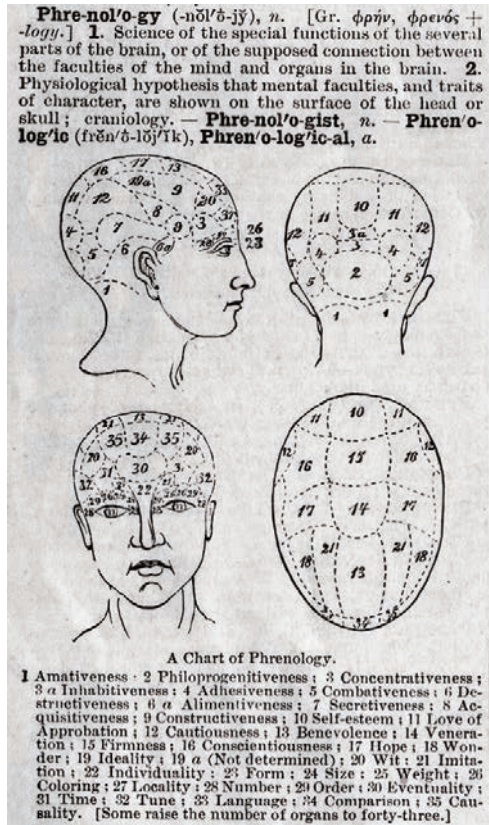


Fig. 1: A definition of phrenology with chart from Webster's Academic Dictionary, 1910

Following the spread of this theory throughout Europe, famous scholars such as the Italian Cesare Lombroso (Gibson, 2002, 2008), the German Franz von Liszt, the French Alexandre Lacassagne and Gabriel Tarde wondered what led a man to commit a crime and what role the environment and the innate predisposition played. The answers to these questions were sought through the study of the lives, crimes and anatomy of numerous subjects. The experience of doctor Lorenzo Tenchini fits into this context (Toni, Bassi, Montaldo, & Porro, 2016). Born in Brescia in 1852 and graduated in medicine in Pavia in 1876, Tenchini was during his years of study a pupil of the more famous Cesare Lombroso, with whom he supported the correlation between cranial-cerebral dysmorphism and behaviors. His thought flowed into his *magnum opus* “*Cervelli di delinquenti*”, where he describes the brains of various criminals (Tenchini, 1891). However, his greatest work is the study carried out in Parma (where he obtained the chair of anatomy in 1881) on more than a hundred subjects, including criminals and inmates of the nearby asylum of Colorno. For most of them, Tenchini kept the skull, the brain and a funerary mask, made according to a unique technique developed by himself, which involved the use of the skin of the deceased as an intermediate layer between an internal cast of the skull in plaster and the external wax-modeled layer. Unfortunately, out of this extraordinary collection, only 33 brains have survived, conserved at the Institute of Anatomy of University of Parma, and 76 masks, divided between that university and the museum of Cesare Lombroso in Turin. The masks and / or brains were accompanied by handwritten technical files that reported biographical, autoptic and anatomical notations concerning the individual, which are very well conserved at the Institute of Anatomy of the University of Parma. The aim of this study was to investigate the case of one of the subjects analyzed by Tenchini, B.A. In particular, we aim to shed new light on the subject's biographical, clinical and criminal history, by crossing the material collected at the time by Tenchini (skull, mask, clinical and autopsy files) with documentary sources from the same period and modern knowledge in the medical field.

Medical and biographical history of the subject

In order to reconstruct B.A.'s story, we started from Tenchini's writings, i.e. the manuscript record associated with B.A.'s skull and mask (Fig. 2) and the information on this subject found in the book “*Cervelli di delinquenti*” (Tenchini, 1891).

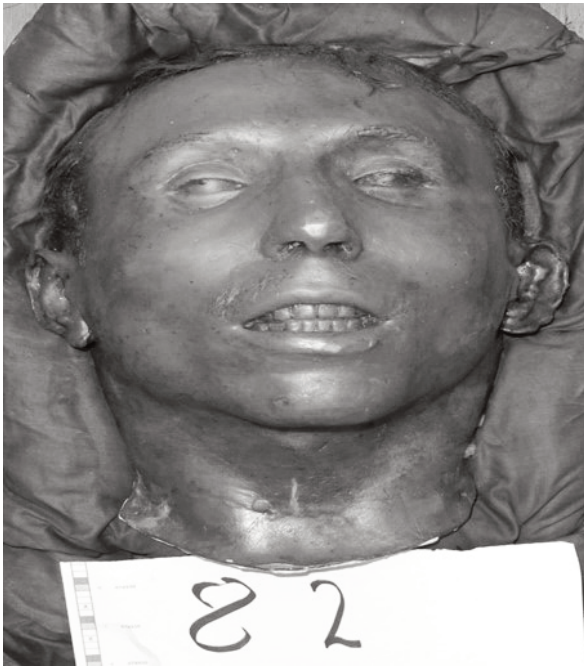


Fig. 2: frontal view of Tenchini's mask of B.A. (Toni, Bassi, Montaldo, Porro, 2006)

The manuscript record associated with B.A states the following (translated from the original Italian version):

“Criminal Anthropology. No. 82 Prof. L. Tenchini. Brain of Murder-Suicide [...] (Autopsy performed in the Military Hospital of Parma on 4 March 1887). B [...] A [...], aged 22, from Bologna, illegitimate son adopted by a gentleman from Bologna. A corporal in the 19th “Cavalleri Guide”, Cavalry Regiment, he was assigned to the regimental office because his superiors thought well of him. He was a volunteer soldier for about a year and a half and never gave any reason for complain: he was intelligent and reasonably educated. He developed a mad passion for a certain G [...] I [...], a fallen woman aged 21 and was jealous. On the evening of 3 March, he was seen entering and leaving the brothel several times. At about 9 o'clock he locked himself in one of the rooms with his lover and tried to kill her with a pistol shot, but she threw herself out of the window; then he pointed the weapon at his heart and killed himself. The autopsy revealed tuberculosis on the left lung, despite the fact that the man seemed sturdy, muscular and of strong build. He had attempted to commit suicide at the age of 15 by taking poison and was saved with considerable difficulty. The brain weighed 1455 grams upon extraction. The macerated cranium is conserved in the museum of Human Anatomy of Parma [...]” (reported in Toni, Bassi, Montaldo & Porro, 2016, p.102).

Several observations were also noted by the anatomist Tenchini regarding the subject's brain and skull in the book “*Cervelli di delinquenti*” (Tenchini, 1891). An encephalic weight of 1455 grams and the presence in the

right hemisphere of the brain of an anomalous M-shaped of the praecuneus were noticed. In the left hemisphere the focus was placed on the internal frontal gyrus, intended by Tenchini as (translated from the original Italian version): “[...] That part of the cerebral cortex that overlaps the anterior two thirds of the convolution of the corpus callosum and extends on the inner face of the brain until it reaches the quadrilateral lobe” (Tenchini, 1891, p. 13).

The internal frontal gyrus of B.A. was found double for the first 7 cm and superficial on the level of the fourth fold of frontal callous passage. About the skull, Tenchini reported a weight of 816 grams, a cephalic index of 79-78 cm and the presence of highly developed frontal sinuses and protrudinginion and occipital crest (Tenchini, 1891).

Military service of b.a

In the reconstruction of the subject's state of health, an important anamnestic event was highlighted: his military service. As reported by Tenchini, B.A. served as a volunteer soldier in the 19 Guide cavalry regiment for a year and a half before his death in 1887. During his service he achieved the rank of corporal and he was assigned to “*ufficio di maggioranza*” (“the regimental office”).

This regiment of light cavalry was founded on April 7th, 1859 by the royal Sardinian army and it was assigned the task to relay messages between Army headquarters and divisions. This regiment was based in Parma from 1833 to 1887 (www.esercito.difesa.it). Based on this information, the general legislation on military health matters of the time, contained in the Official Journal of the Kingdom of Italy on December 15th 1885 (number 303), was recovered. Starting from the law, which is extremely detailed, that reported: “[...] *in order to avoid to accept candidates who do not have all the physical conditions necessary for a useful and effective military service*” (translated from the original Italian version in the Official Journal of the Kingdom of Italy on December 15th 1885 (issue number 303), it was possible to obtain various information regarding B.A.'s state of health. First of all, the subject was tall between 1.60-1.63 (Fig. 3), given the required criteria to serve in light cavalry included in the article 207 of the Official Journal of the Kingdom of Italy on December 15th 1885 (issue number 303), with a thoracic diameter of at least 80 cm, as reported in the article 1-bis at pages 54-55 of that journal.

§ 205. — Il Consiglio d'amministrazione, sentito il parere degli ufficiali medici, esaminati i documenti e gli attestati prodotti, ed accertato che il giovane sappia leggere e scrivere copiando lo stampato, abbia la statura prescritta per l'arma, e tutti i requisiti voluti dall'articolo 111 della legge, lo ammette all'arruolamento in virtù della facoltà attribuitagli dal successivo art. 113.

§ 206. — Per ciò che riguarda la statura servirà la seguente tabella:

	Minimum	Maximum	
Carabinieri Reali	1,66	illimitato	
Artiglieria di campagna	1,64	1,75	
Id. da fortezza	1,67	1,82	
Id. da montagna	1,72	illimitato	
Cavalleria lancieri	1,64	1,72	
Id. cavalleggeri	1,60	1,63	
Reggimenti del genio	zappatori	1,60	1,78
	pontieri	1,66	illimitato
Bersaglieri	1,62	1,75	
Squadrone palafrenieri	1,60	1,72	
Depositi cavalli stalloni	1,64	illimitato	
Granatieri	1,76	illimitato	
Fanteria di linea e reggimenti alpini	1,55	illimitato	

Fig. 3 Heights required for the various corps of the Italian army (Official Journal of the Kingdom of Italy on December 15th 1885 (issue number 303))

Considering the pathologies that would have caused the subject's rejection from the army, some considerations can be made about his medical condition, utilising information which, along with other sources, has been widely gathered thanks to the Official Journal of the Kingdom of Italy articles published on December 15th 1885 (issue number 303). First of all, his constitution was good, and he did not suffer from obesity or cachexia (articles 2 and 3 p.55). Moreover, the subject was not affected by either visual deficits (article 41 p. 56), nor hearing deficits (article 46 p.57). Finally, with regard to the osteoarticular apparatus, B.A. did not suffer from alterations capable of interfering with military activities such as the use of weapons or marching (article 25 p. 56).

Although ascertainable with the available means, he also had adequate cardio-respiratory functions, since he did not suffer from the so-called "cardiac neurosis" (article 64 p.57), hydrothorax (article 63 p.57), asthma (article 63 p.57), incipient tuberculosis (article 63 p.57), or haemoptysis (article 63 p.57). In general, the picture obtained from these data is that of a healthy subject with a robust constitution, as confirmed by Tenchini's autopsy report.

Tuberculosis

The discovery of tuberculosis (TBC) during B.A.'s autopsy (in the left lung) is very interesting as the diagnosis of this pathology when alive would have led to his expulsion from the army. It is important to place tuberculosis within the context of the time, and to consider the current knowledge of the disease. The 19th century can be considered as the "century of tuberculosis". On the one hand, the economic and social transformations linked to the in-

dustrial revolution led to an unprecedented spread of the disease; on the other hand, the findings of scientists such as Laennec, Bayle, and Koch led to important knowledge concerning the anatomopathological characteristics of the disease, the tubercle, and the causative agent, *Mycobacterium tuberculosis* (Nuland, 1994). In spite of this, at the time of the subject, essential diagnostic tools such as the Mantoux test or X-rays were not available. The diagnosis of this disease was, therefore, based exclusively on physical examination and clinical observation, allowing to identify the most violent and symptomatic cases, but ignoring the latent and paucisymptomatic ones. However, the tubercle was well known for centuries, allowing easy identification of this disease during the autoptic activity. Considering these premises, it is possible to state that until the time of death of B.A., his actual health situation was not completely known, since its diagnosis would have required the quarantine and his removal from the army. Likewise, it did not significantly affect the health of the young man who was regularly in service until his death. It can, therefore, be assumed that the subject suffered from a latent pulmonary TBC. Based on the epidemiological condition, the most likely hypothesis is that it may have been a long-standing infection, already present, but not recognized at the conscription visit. Otherwise, it could have been contracted during the military service.

Skull-encephalic notes

As for the detailed observations on the subject's skull and brain, they are fully part of the phrenological doctrine prevailing in those years. Features such as an important development of the frontal sinuses and the splitting of the internal frontal convolution, attributed to B.A., are noted in other papers on the skulls and brains of criminals conducted by scholars of the time, including Cesare Lombroso (Lombroso, 1971). In particular, Cesare Lombroso considered the prominence of the frontal sinuses, as found in B.A.'s skull, a typically atavistic characteristic of wild animals and fossils of anthropomorphic monkeys discovered in those years (Lombroso, 1871). While for anomalies of the frontal sinuses, as for many other phrenological points of reference, the link with the behavior has been denied, the attention paid by Tenchini to the frontal lobe was ahead of its time. He devoted an entire chapter of his work "*Cervelli di delinquenti*" to the examination of this hemisphere. With time, the role of the frontal lobe in high intellectual functions such as planning, risk calculation, social behaviors and motivation has been widely recognized by modern research. Proofs of this are some of the symptoms such as disinhibition, states of anger, excitement and inability to control emotions, found in people with lesions involving this anatomical district, grouped under the name of frontal syndrome (Gadecki, Ramsz-Walecka, & Tomczyszyn, 1999; Metin et al., 2017). It is interesting to note that the first, and perhaps most famous, case of this pathology occurred a few years before

the death of B.A. Indeed, it was in the year 1848 that the railroad worker Phineas Gage, after being pierced by a metal bar which destroyed much of his frontal lobe, suddenly and abruptly changed his personality (O'Driscoll, & Leach, 1998).

Criminal history

Finally, the most difficult task was to analyze and reconstruct the subject's criminal history. In search of answers, we started from the biography. After the suicide attempt by self-poisoning at the age of 15, there is a news-free period until enrollment. In this period, we can assume that B.A. completed his studies by virtue of the role occupied within the regiment "ufficio di maggioranza" (regimental office) and the fact that Tenchini describes him as educated. Indeed, in military language, "l'ufficio di maggioranza" (regimental office) is the name of the office that, within a regiment or battalion, carries out activities of bureaucratic, disciplinary and administrative nature.

It can also be assumed that the subject did not commit any criminal act prior to the enrollment as he had to provide, as volunteer, a "certificato di penalità" (criminal record), being a document certifying the absence of convictions, and an "attestazione di buona condotta e moralità" (attestation of good conduct and morality) (article 196, p. 36 of the Official Journal of the Kingdom of Italy on December 15th 1885 (number 303)). It is also interesting to report how behavioral or psychiatric alterations capable of interfering with military service (articles 16, 17, 18, p. 58 of Official Journal of the Kingdom of Italy on December 15th 1885 (number 303)) were not found at the conscription visit, despite the attempted adolescent suicide. Indeed, during the years in the army, the subject maintains an impeccable behaviour in the eyes of his superiors that grants him a place as officer of majority.

In the light of these data, is there anything capable of shedding light at least in part on the final epilogue? The answer to this question may lie in the attempted suicide by poisoning during adolescence. This phenomenon is still extremely widespread and it is the object of analysis of a large international literature. Some studies have reported that the survival outcome of subjects who attempt suicide by self-poisoning in adolescence is reduced in the following decade compared to the average population. This fact is mainly due to the repetition of new suicide attempts after many years, often with a fatal outcome, due to the persistence of the risk factors that led to the first attempt (Finkelstein et al., 2015; Noderntoff, 2007). However, analysing the crime committed by B.A, it cannot be ignored that the victim was a young, 21 year old prostitute. Considering the gender of the victim and the motivation behind the murder (an insane jealousy of B.A as reported in Tenchini's manuscript (Toni et al., 2016)), this crime could be considered a feminicide. This term refers to a specific category of crime, or rather the intentional killing of a woman due to her purported transgression of

traditionally or socially determined gender roles (Bona, Burba, 2017). It is sadly peculiar how several reports carried out in large countries such as Italy (*Vittime e carnefici in Italia: la prima mappa italiana della violenza sulle donne e i loro aggressori*; <https://www.senato.it>; Piacenti, & De Pasquali, 2014), United Kingdom (*Prostitution, Third Report of the Session 2016-2017*, www.parliament.uk), Colombia (*Boletín Epidemiológico: Homicidios de Mujeres en Condición de Prostitución Durante los Años 2004 a 2013*, <https://www.medicinalegal.gov.co>; *Global study on homicide. Gender-related killing of women and girls*, <https://www.unodc.org>), show how prostitutes are frequently victims of murder, representing one of the most at-risk categories. Indeed, some of these studies indicate that the vast majority of female sex workers are killed by clients (Brewer et al., 2006; Potterat et al., 2004). Nevertheless, these murders cannot be identified as feminicides when they occur without an existing connection between the murder and the victim. The case reported can be classified as feminicide, due to the relationship occurring between G.I. and B.A., who considered G.I. as his lover.

This interpretation of course does not shed complete light on the episode due to the scarcity of available elements, but it is still considered valid in the light of the data stated.

Conclusions

Three elements were found to be crucial in the realization of this work: the analysis of the historical-scientific context of the time, the use of modern medical-scientific knowledge, and the combination of these two elements. The historical and cultural context of the time was found to be crucial, setting the basis for interpreting important data collected by Tenchini and for reconstructing B.A.'s biography. On this basis, modern necessary scientific knowledge has been grafted. The combined use of these two elements has allowed, albeit starting from a limited basis, to reconstruct the story of B.A. in a rather detailed way and to shed new light on the work of doctor Lorenzo Tenchini. It is important to underline that Tenchini included dozens of subjects belonging to different social categories and with different biographical-health backgrounds, in his study. It is only possible to imagine what an incredible historical insight this could offer to such an approach applied to them as well. Besides, the skull of B.A. has been already used for the evaluation of a new method of facial reconstruction applying photogrammetry (Donato, Cecchi, Goldoni, & Ubelaker, 2020), laying the groundwork for other studies.

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