MEDICINA NEI SECOLI ARTE E SCIENZA, 19/2 (2007) 353-360
Journal of History of Medicine

Articoli/*Articles*

LORENZO TENCHINI (1852-1906): NEUROANATOMY AND CRIMINAL ANTHROPOLOGY

[1]LORENZO LORUSSO, [2]CARLO CRISTINI, [3]ALESSANDRO PORRO
[1]U.O. Neurologia, A. O. "M. Mellini", Chiari (Brescia)
[2]Psicologia Generale, Università degli Studi di Brescia, I
[3]Storia della Medicina, Università degli Studi di Brescia, I

SUMMARY

Lorenzo Tenchini was born in Brescia and studied Medicine in Pavia where he became lecturer of Anatomy in 1880. In 1881, at the age of 29 years, he was appointed Professor of Anatomy at the University of Parma. In this city Tenchini began to study the morphology of the brains of criminals, later founding the "Museum of Criminal Anthropology". He collected brains of delinquents and their wax masks and studied the relationship between neuroanatomy and criminality. He promoted the building of a lunatic asylum in the province of Parma and was interested in social medicine, including the pellagra scourge in Northern Italy.
Tenchini conducted important research work in the field of neuropsychiatry and anthropology. He was one of the founders of criminal anthropology in Italy and sought to explain criminal behavior through the study of neuroanatomy.

Introduction

At the end of the 19th century Phrenology was very popular in society and in Medicine[1]. However, the lack of scientific bases precluded further development of the correlation between skull conformation and personality. During the same period, the Italian Cesare Lombroso (1835-1909) proposed a new approach to the study of cranial conformation and its influence on society, particu-

Keywords: Criminal anthropology – Neuroanatomy – Delinquents - Wax masks

larly the relationship between brain morphology and criminality. Lombroso believed that only conclusions based on physical-chemical and anatomical observations had scientific value. An important role was also played in this field by the anatomist Lorenzo Tenchini (1852-1906) (Fig. 1), who studied the relationship between neuroanatomy and criminals. Indeed he lived in a period of transition in the fields of neuroscience, anthropology and psychiatry, when Gall's doctrine, the theory of localization, and Cesare Lombroso's strictly positivistic epistemology were replaced by Camillo Golgi's new approach to the study of neuroanatomy. This followed his discovery of black reaction staining, which began a period of important development in neurological knowledge[2].

Early life

Lorenzo Tenchini was born in Brescia on 21 January, 1852. He had a brother and five sisters. His father was a lawyer and his mother a noblewoman, but the family had precarious financial means. Tenchini had simple habits and gentle behavior. He attended elementary and grammar school in his home town and graduated in medicine on 27 July, 1876 at the University of Pavia, at the age of 24 years. He declined the post of general practitioner at a district municipality, preferring to devote himself to research work in the field of Anatomy. He was employed as a lecturer at the Institute of Anatomy in Pavia and maintained relations with this Institute from 1879 to 1887, even after moving to Parma.

Institute of Anatomy of Pavia in the 19th century

In 1925, during the *saecularia undecima* celebrations at Pavia University, Domenico Spadoni[3] wrote that the Institute's main characteristic (during Lorenzo Tenchini's tenure) was macroscopic and systematic research.

Giovanni Zoja (1832-1899), anatomist between 1864 and 1899, successor and son-in-law of Bartolomeo Panizza (1785-1867), reorganized anatomical collections and oriented development in a craniological and ethnological direction. His osteological study was

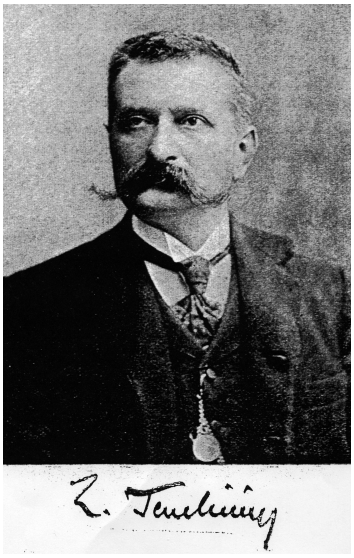

Fig. 1 - Lorenzo Tenchini.

considered to represent a completion of and complement to comparative research. The same conclusion was reached in another work[4], published in 1887 in the Abstract book of the 12th Congress of the Italian Medical Association, placing emphasis on Panizza's research on lymphatics and his osteological series.

Pietro Vaccari (1880-1976), official historiographer at Pavia University in the mid- 20th century[5], reiterated these interpretations.

He mentioned Panizza's works on lymphatics, his experimental research with the microscope on cranial nerves and cerebral localizations, especially the visual cortex in the occipital lobe[6]. He, too, quoted Zoja's osteological and arthrological studies, and those on the thymus and thyroid[7].

Antonio Pensa (1874-1970) wrote a very interesting memoire of university life[8], providing an extensive description of Pavia'a Institute of Anatomy, shortly after Tenchini had studied and worked there. Pensa stressed Zoja's talent as a teacher, but noted the old-fashioned nature of his lessons[9]. Indeed, Tenchini completed his training in a very antiquated, traditional setting.

Giovanni Zoja was a traditionalist anatomist but developed the anthropometric technique and anatomical pieces conservation method, described by Angelo Dubini (1813-1902). Zoja subdivided anatomical specimen collections into 8 sections and sought to improve the museum of the Institute of Anatomy[10,11]. Students used to attend the Institutes and Laboratories of Golgi and Maggi[12] to satisfy new anatomical curiosity. In Camillo Golgi (1843-1926)[13] and Leopoldo Maggi's (1840-1905)[14] Institutes, the microscope was adopted as a new, highly sophisticated research instrument for describing the unknown world of anatomy.

Cultural context

During his time in Pavia, Tenchini won various awards from the Istituto Lombardo in Milan for his first publication, *Storia dei progressi dell'anatomia e fisiologia del cervello dalla dottrina di Gall al 1870* (*Contribution to the history of progress in brain anatomy and physiology from Gall doctrine to 1870*), issued in 1880, which he co-wrote with Cesare Staurenghi (1858-1912), and for *Contributo all'anatomia del cervelletto umano* (*Contribution to the anatomy of the human cerebellum*) (including an atlas), issued in 1881.

Tenchini was influenced by Phrenology theory and admired Franz Gall's scientific approach and continuous reference to methodical observation of facts. Gall argued that true science could exist without a methodology of observation and that positive results demanded long observation[15].

Tenchini wrote that Gall, in his works on comparative anatomy, commented on the difference and evolution in the nervous system within the zoological scale. He laid the bases for phylogenesis, correlated with ontogenetic development, and detected morphological and functional parallelism between ontogenesis and phylogenesis. He also argued that thoughts and functions were inborn in men and animals, but stressed the central role played by the environment and education in a person's development.

Gall hypothesized and sought to define a cerebral map and can thus be considered a precursor of cerebral localization, later described by French and English neurological schools. He was also a precursor of modern neurosciences, through his description of areas, patterns, map, functional controls which are observed and studied by modern functional neuroimaging techniques. Gall argued that there was a relationship between different morphology, especially of the cerebral cortex, and different cerebral quality and nervous energy. He believed that external signs, protuberances, and skull configuration provided indication of an individual's intellectual and moral qualities. Tenchini analyzed Gall's phrenological studies, evaluating physical features of criminals in collaboration with Cesare Lombroso.

Gall was very bad tempered and Tenchini reported:

> *I am the most humble man, when faced with infinity (…) But when we discuss brain structure and function (…) I am above all predecessors and contemporaries. (…) I am the only one to have found the means apt to discover the seat of every instinct, thought, emotion and talent*[16].

In Pavia, Tenchini developed the Phrenology theory and followed the craniology tradition of the Institute of Anatomy. In 1881 he was appointed Professor of Anatomy at the University of Parma, where he carried out his research on anthropology.

Institute of Anatomy in Parma at the end of the 19th century

When Tenchini took over the chair of Anatomy at Parma University in 1881, the Institute had no anatomic tradition. The most important anatomist, Giovanni Inzani (1827-1902) was also a pathologist and surgeon and can be described as an eclectic. At the end of the 19th century, however, this situation had become unacceptable. Moreover, compared to other universities and anatomical institutes, Parma was well established since many corpses were donated by a large hospital, a big prison and a mental hospital (situated in Colorno), providing enormous potential for anatomical research[17]. Tenchini's work was performed in the field of criminal anthropology. He implemented a large collection of skulls in Parma, in addition to another new and valuable collection of wax masks that he had moulded on the faces of criminals using the *moulages* technique. He collected 77 wax masks with details on neuroanatomy features and reported personal data on each criminal studied. Medical and criminal notes, anatomical schedules, registers of each criminal are conserved in Parma. The study rationale was to correlate brain lobe features with criminal behaviour, in accordance with the theory of the Austrian neuropsychiatrist, Moritz Benedikt (1835-1920)[18]. The approach differed from Cesare Lombroso, providing an in-depth, functional study of the cerebral localization of morality. He gathered his observations in four books published in 1885 under the title: *I cervelli di delinquenti* (*Criminals' brains*)[19].

Lombroso evaluated the superficial skull and criminal character. Historiography gave Tenchini credit for anatomical research on criminal anthropology conducted in Parma.

Other research work by Tenchini chiefly addressed gross anatomy and embryology. He had another merit: promotion of the publication of anatomical text-books for medical students. His *Compendio di anatomia* (*Compendium of descriptive anatomy*) (1890) and *Corso di Embriogenia* (*Course of Embryogenesis*) (1905) were important Italian academic anatomical books[20].

Social and political involvement

Tenchini was particularly sensitive in other fields, too. He defended the rights and dignity of mental patients. He promoted respect for their suffering and existential condition; he denounced a society that rejected the mentally ill and did not recognize their humanity and moral pain. Tenchini did not understand how men could be responsible for such behaviour. He promoted and sustained the study of the relationship between people and their life context. He maintained that diseases were not only a modification of biological mechanisms, but also the result of environmental influences on people. His approach to illness, disease, suffering and behaviour, took a social and historical perspective. Tenchini maintained that Cartesian dualism had ended and that, functionally, soul and body were the same matter. Tenchini also stressed the importance of women's education. He believed women should have the same rights as men and that their intelligence could be used to produce advanced laws. He understood the value of women's contribution, their experience, and their way of thinking and feeling.

Tenchini focused attention on the poor and unemployed, and promoted social reforms in the workplace and in education that sought true progress and were based on human rights. He was convinced of the need to activate mental and motor functions since the brain took advantage of mental stimuli, bodily health, and a favourable environment. Lack of balance and harmony between man and his environment led to decline in nations. Tenchini also anticipated key future

problems in the field of ecology, particularly pollution, and social aspects. He encouraged the young to abandon ignorance, improve education, and put their trust in science and life. As a teacher, Tenchini approached and developed various arguments: from morphology with his evolutive theories, to anthropology, philosophy and social life; students rated his lessons very highly. He taught artistic anatomy at the Academy of Art and was dean of the Faculty of Medicine at Parma University. He was elected city councillor, appointed a member of the city government and became a provincial councillor.

Lorenzo Tenchini died in Brescia on 9th October, 1906[21].

Conclusion

Tenchini was a man and a neuroscientist committed to researching into truth and the heart of the matter. He advanced many medical and neuroscientific concepts, and new social and cultural perspectives. His main research works had important repercussions in the field of neuropsychiatry and anthropology. Tenchini was one of the founders of criminal anthropology in Italy and sought to explain criminal behaviour through the study of neuroanatomy.

BIBLIOGRAFIA E NOTE

1. LOMBARDO G. e DUICHIN M., *Frenologia, fisionomica e psicologia delle differenze individuali di Franz Joseph Gall. Antecedenti storici e sviluppi disciplinari*. Torino, Bollati Boringhieri Editore, 1997.
2. MAZZARELLO P., *Il Nobel dimenticato*. Torino, Bollati Boringhieri Editore, 2006.
3. SPADONI D., *L'Università di Pavia e i suoi Istituti*. Pavia, Bizzoni, 1925 pp. 117-122.
4. *Istituto di Anatomia Normale*. In: *Pavia e i suoi Istituti universitari*. Pavia, Fusi, 1887, pp. 90-93.
5. VACCARI P., *Storia della Università di Pavia*. Pavia, Università di Pavia Editrice, 1982.
6. VACCARI P., op. cit. nota 4, pp. 264-265.
7. VACCARI P., op. cit. nota 4, p. 294.
8. PENSA A. *Ricordi di vita universitaria (1892-1970)*. Milano, Cisalpino, 1991.
9. PENSA A., op. cit. nota 7, p. 54; op. cit. nota 7, p. 108.
10. MONZA F., *Anatomia in posa. Il Museo Anatomico di Pavia dal XVIII al XX secolo*.

Milano, Cisalpino, 2006.
11. ZOJA G., *Il Gabinetto di Anatomia umana della R. Università di Pavia*. Pavia, Tip. Succ. Bizzoni, 1890.
12. ZOJA G. *Il Gabinetto di Anatomia umana della R. Università di Pavia*. Pavia, Tip. Succ. Bizzoni. 1890.
13. MAZZARELLO P. *La struttura nascosta. La vita di Camillo Golgi*. Milano, Cisalpino, 1996.
14. PORRO A., *"Coordinare e comparare": un commento storico medico*. In: *Leopoldo Maggi (1840-1905): un naturalista eclettico nella Lombardia di secondo Ottocento*. Atti del Convegno, Cuveglio, 23 novembre 2002. Terra Gente, 2002; 10:75-89.
15. LOMBARDO G. E DUICHIN M., *Frenologia, fisionomica e psicologia delle differenze individuali di Franz Joseph Gall. Antecedenti storici e sviluppi disciplinari*. Torino, Bollati Boringhieri Editore, 1997.
16. TENCHINI L., *I moderni studi sul cervello nelle scienze sociali*. L'Ateneo Medico Parmense 1888; 3-4: 144-145.
17. *Istituto di Anatomia Umana di Parma*. In: *Acta medica italica. L'anatomia in Italia*. 1939; 2:73-75.
18. BENEDIKT M., *Anatomical studies upon brain of criminals: a contribution to anthropology, medicine, jurisprudence, and psychology*. Translated from the German by E.P. Fowler, New York, De Capo Press, 1981.
19. TENCHINI L., *I cervelli di delinquenti*. Parma, Luigi Battei, 1885.
20. RIZZI F., *I professori dell'università di Parma attraverso i secoli. Note indicative bio-bibliografiche*. Parma, Tipografia Fratelli Godi, 1953.
21. GUIZZETTI P., *Prof. Lorenzo Tenchini. Annuario della R. Università di Parma per l'anno accademico 1906-907*. Parma, 1907.

Correspondence should be addressed to:
Lorenzo Lorusso, U.O. di Neurologia, A. O. Mellino Mellini, V.le Mazzini,6,
25032 Chiari (Brescia), I.