The rise and development of forensic anthropology in Brazil

1. Introduction

While the implementation of forensic anthropology was being made in the United States of America and Europe during the 19th to mid-20th century [1,2], several dictatorships were rising in Latin America between the 1960s and 1970s. The need for forensic anthropology became evident when investigations started being conducted for the location and identification of people killed through political rationale.

Latin America was in desperate need of the right tools to face a complex issue related to the human rights violations it was immersed. The unknown number of missing and unidentified persons led to a critical call for the location and identification of individuals. Countries facing a humanitarian emergency contacted and employed people to exhume and analyze the remains of found graves. The work, however, brought to common knowledge the deficiency in the exhumations and recovery derived from the employment of unqualified professionals, that cost severe postmortem damage in the remains and caused the loss of evidence such as projectiles and personal effects. An important additional issue was the loss of inhumations contexts.

The lack of professionally specialized personnel by the state is not an old problem. That is why, currently, families of the missing persons from the dictatorship eras ask for the intervention of independent forensic teams. The creation of such teams dates back to 1984 when the American Association for the Advancement of Science sent a forensic delegation to Argentina [3,4]. Among the experts, Dr. Clyde Snow was present when hundreds of skeletons were to be found exhumed and unidentified. In his 1982 article entitled Forensic Anthropology, Dr. Snow had stated that there was no reason why physical anthropology should not eventually apply their full knowledge of human biological variation to a broader range of medicolegal problems, including the identification of the skeleton [5]. Eventually, Dr. Snow trained the founders of the EAAF (Argentine Forensic Anthropology Team), a team that today has worked in more than 40 countries.

Although Argentina and other Latin American countries counted with the expertise and knowledge from expats to train them, such efforts were not directed towards Brazil. It is essential first to understand the starting of legal medical studies in Brazil and how forensic anthropology came to become a field within that area of expertise. Only after that, we can understand how the development of forensic anthropology took place in Brazil, and how the country differs significantly from the other countries in Latin America.

2. Legal medicine in Brazil

Brazil had a late start with its studies in legal medicine when compared to Europe, the United States, or other countries in Latin America. Although Brazil had great Portuguese influence in its intellectual and cultural setting, Portugal did not have a well-developed legal medicine study set during the Colonial Period. Therefore, during the first phase of the legal medicine development in Brazil, the country experienced a decisive influence coming from other European countries, such as Italy and Germany, but especially - and more intensely - from France [6].

The second phase of the legal medicine development in Brazil begins with Agostinho José de Souza Lima, who started the practical teaching of legal medicine at the Medicine College of Rio de Janeiro [7]. Without any prior knowledge of the judiciary field, Agostinho de Souza Lima interpreted the Brazilian legislation in light of the legal medical knowledge at that time. Due to his efforts in developing the field in the country, Agostinho de Souza Lima is considered to be the pioneer — or the father of — legal medicine in Brazil [7]. During that historical period, judges were not mandated to consult with physicians before pronouncing their sentences, and this obligation started with the Criminal Code of the Empire, dated December 16, 1830 [8].

In 1832, the field of Criminal Procedure started being developed in Brazil, shedding light to the norms regarding autopsies, officially establishing the medicolegal investigation [9]. Many of the first determinations are still currently in force in modern criminal procedure norms at the Brazilian Code of Criminal Procedures. In the same year of 1832, Raimundo Nina Rodrigues creates the official College of Medicine in Bahia, followed by a college in Rio de Janeiro, both containing legal medicine in their curricula [10]. Students had to perform a thesis defense to receive the degree of Doctor of Medicine, and this requirement helped in increasing the research within legal medicine. The first article in legal medicine was published on September 21, 1835, and reports the autopsy of Regente Bráfilio Moniz who had died 22 hours before the realization of the necropsy [10].

In 1854, José Martins da Cruz Jobim, a tenured professor at the Legal Medicine College in Rio de Janeiro, was asked by the Brazilian
Justice Department to coordinate a commission to standardize the practice of medicolegal exams, organizing a prognostic table of physical injuries. The regulation that overlooked the medicolegal activities was passed in 1856 by the Enactment n° 1.746 on April 6. The Police Agency of the Court created the “Medicolegal Advisory Council,” intending to “perform personal injury analysis and any exams necessary for the investigation of crimes and the facts suspected to have had happened” [11]. The Advisory Council was composed of four physicians, whose two were full-time members with the job of performing investigative exams, and two were professors of legal medicine and had consulting positions in the field of toxicology. Additionally, in that same year, the first morgue of Rio de Janeiro was inaugurated in Gamboa, at the space that used to store unknown bodies, remains of slaves, and remains of inmates [11].

The Medicolegal Advisory Council was replaced by the Medicolegal Office in 1900, with the creation of the first anthropometric identification service. Two years later, Afranio Peixoto proposes a reform to the Medicolegal Office, inspired by his observations in Germany. Afranio Peixoto affirmed that the compilation of “monstrous misteming on autopsies findings, and confused, incoherent, and disorganized reports of personal injuries, are a sad testament to the professional incompetence and prejudices the interest to pursue justice” [6]. Influenced by the critique coming from Peixoto, the Brazilian Government edits the Enactment n° 4.864, of July 15, 1903, that details the norms of the medicolegal procedures [12]. The legislation was considered to be ahead of its time, and policymakers started referencing Brazilian laws as models to French and Italian governments. However, the determinations presented by the Enactment continued to fall into disuse, and physicians who were not specialized in legal medicine were asked to testify as experts in court. The National Academy of Medicine protested this issue, and alongside the Brazilian Bar Association, the Enactment n° 6.440, of March 30, 1907, replaced the Medicolegal Office for the Medicolegal Service, named Afranio Peixoto after its first director [13].

The Maximiliano Law, of 1915, conferred legitimacy for the practical classes offered by the Colleges of Medicine and recognized the validity of the reports resulted from medicolegal exams [6]. Accompanying the growing recognition of the medicolegal field, in 1924, the Medicolegal Service became the Medicolegal Institute, under the Brazilian Justice Department [11].

The Brazilian Code of Criminal Procedures of 1941, still currently in force, determines that official specialists must perform the investigations. Therefore, the practice of legal medicine in Brazil is an official and public activity with Medicolegal Institutes throughout the entire country, with the main branch in every Brazilian state capital plus Brasilia (Distrito Federal — D.F.). The medicolegal reports are considered an administrative act and hold the value of an official document. The limitation of forensic investigations of crimes to official experts who are police staff, comes from the Brazilian Code of Criminal Procedures [14] and the Brazilian Criminal Code [15]. Ad hoc experts can be appointed as non-official experts by the judicial or police authorities to participate in the forensic investigation. However, this practice is not very common, with official experts rarely being questioned by other experts in court.

Although one of the most well-known functions of the Medicolegal Institute is to perform autopsies, this type of exam constitutes only 30% of the work served by their experts. Nonetheless, the exams related to cadavers besides autopsies are exhumations, forensic anthropology, and forensic odontology [16].

Noticeably, each assignment designated to the Medicolegal Institute requires expert professionals and specialists. As in many public administrative matters, the Institutes face difficulties in filling the gaps, which aggravates the flow and response to high work demands in existence. Therefore, many improvised mechanisms are present - not working as they should — with many staff members working in specialized positions which they are not qualified. When the need for forensic anthropology was noticed in Brazil, the country faced a shortage of specialized personnel, and individuals started pursuing this area of expertise due to the necessity for investigations.

3. The rise of forensic anthropology in Brazil

The rise of forensic anthropology in Brazil occurred simultaneously with the legal medicine. The influence of the school of thought in Brazil came from Europe, especially from the British Association for the advancement of Science — Section of Anthropology (founded in 1822), the Société Ethnologique of Paris (founded in 1839), the Berliner Gesellschaft Für Anthropologia, Ethnologie und Urgeschichte (founded in 1869) and the Società d’Anthropologie of Paris (founded in 1865) [17].

The anatomist, physician, and anthropologist Paul Brocca was the responsible for developing the field of anthropology, creating the Anthropology Laboratory of the School of High Studies in 1871 and the School of Anthropology in Paris, in 1876 [18]. The French school of thought greatly influenced the development of anthropometry in Brazil, specially during the mid-19th century, while the country was still an Empire. Cesar Lombroso influenced the legal medicine, criminal anthropology and criminology in Brazil through his 1871 published work entitled L’Uomo Delinquente [17]. In 1895, Lombroso characterized criminal individuals through conclusions resulted from the autopsies of 383 crania from convicted felons and the anthropometric analysis of 3.939 convicted felons who were still alive [19].

The first decades of the 20th century saw colleges of medicine, natural history museums, police agencies, schools, and social work institutions, mobilize themselves with the practice of physical anthropology [20]. Anthropologists, physicians, and naturalists started concentrating their activities in acquiring knowledge about human populations, especially in the characterization of Brazilian populations, their constitution, and racial-biological diversity. Those perspectives included the physical anthropological analysis of Native Brazilians, Black individuals, country-side populations, and European immigrants; the debates revolved around racial admixture and immigration; and the studies on biotopology, legal medicine, and legal anthropology [21].

Rio de Janeiro, at that time, the capital of the Republic, initiated the use of physical anthropology as an “organization of the physical body” of the Brazilian nation [22]. Through institutions such as the National Museum and the College of Medicine, Rio de Janeiro was one of the first centers to produce and disseminate the research being done in physical anthropology in Brazil [23]. Many of the people involved in early researches and publications came from schools of thoughts that gained strength during that time period, names like João Batista de Lacerda, José Rodrigues Peixoto, Edgard Roquete Pinto, Hélio Alberto Torres, and Frôes da Fonseca, were the ones to push physical anthropology studies in the first decades of the 20th century [24]. Most of these studies, however, were related to the “racial types” of Brazilians, focusing on their physical, psychological, and physiological characteristics.

Souza and Santos [25] report that the first use of physical anthropology as a method to aid in criminal investigations in Brazil, came from the development of the Bertillon technique, in France. Alphonse Bertillon, developed the anthropometric method, consisting of the morphological and physical description of individuals. His method was developed based on Paul Brocca and Adolphe Quelet and emerged to help investigations and criminal identification, using science to solve problems in the legal setting.
In 1939, the physician Aridio Fernandes Martins, exemplified the model of the exam of a human skeleton, indicating its completeness, articulation, color, measurements, and indexes [26]. Júnior, published on the use of morphological characteristics for human identification, and based his studies in the former Bertillon method [27].

Nina Rodrigues, one of the contributors to the expansion of legal medicine as a discipline in Brazil, also participated in the early development of anthropology in the country. Following the tendency of his time, Nina Rodrigues researched bioanthropology with the main focus on questions involving the race of Brazilians [28]. His ideas can be seen and exemplified by two articles he published in The Gazette News: “Pathological Anthropology” and “Criminal Anthropology” [29]. Nina Rodrigues started the first research initiatives, creating and implementing the criminal investigation in Bahia, as well as the official creation of the professional of physician-investigator, which had been denied many times before.

Nina Rodrigues had visited countries in Europe, and after returning to Brazil, proposed that University professors in legal medicine should hold the position of official physician-investigators within the law enforcement agencies [29].

The early stages of physical anthropological studies in Brazil were marked by the studies of races and human characteristics [28]. It was believed that the degeneration of the Brazilian populations was due to the miscegenation between races and that Brazil could only revert that situation by replacing Black and Native Brazilian individuals by Europeans. Fortunately, these racist ideas did not perpetuate through time in the field, and the growth in research in legal medicine and forensic anthropology changed focus and started shedding light into new and relevant questions.

According to Guimarães and colleagues [30], the Brazilian legal medicine and forensic anthropology got extremely affected by the military dictatorship era in Brazil that occurred between 1964 and 1985. During that period, the military had no interest in proceeding with missing person investigation or the identification of the individuals killed. Therefore, the Brazilian military dictatorship era set back the entire development of the criminal investigation and consequently, the forensic anthropological studies that acted directly in the identification of unknown individuals found in unmarked or mass graves.

4. The development of forensic anthropology in Brazil

The first country to develop a forensic anthropology team to identify individuals murdered in political crimes during the dictatorship era was Argentina, in 1986. Argentineans received forensic anthropological and archeological training from Dr. Clyde Snow, who was also responsible for training many other professionals throughout South and Central America. The field of forensic anthropology in Brazil is still new [17] with its ascension in the 1990s following the explosion of forensic anthropology and archaeology throughout other Latin America countries [31].

It was only after 1992, when the Torture Never Again Group created an interdisciplinary forensic team to search for the missing persons from the dictatorship era in Brazil [32], that many challenges and difficulties came to surface. These issues were regarding funding, expertise, methodologies, and techniques being used by the forensic experts in the field and laboratory [33].

Initiatives were created to discuss the new steps of forensic anthropology and help with the development of the field in Brazil. The Legal Medicine Center at the College of Medicine in Ribeirão Preto (CEMEL) at the University of São Paulo (FMRP-USP), and the Center for Forensic Archaeology and Anthropology (CAAF) at the Federal University of São Paulo, are two centers that need to be highlighted in this effort.

CEMEL was created through a scientific partnership between FMRP-USP and the University of Sheffield, in the United Kingdom [34]. The CAAF was established in partnership with the Department of Justice and the National Truth Commission, to analyze the victims of the dictatorship era in Brazil who were buried at the clandestine mass grave in the Dom Bosco Cemetery in Perus — São Paulo —, between 1990 and 2000 [35,36]. The bodies of the clandestine mass grave at Dom Bosco Cemetery had been exhumed in 2002 and were stored at the general skeletal room in the Araçá Cemetery [37]. CAAF’s forensic anthropology and archaeology teams were responsible for analyzing the circumstances of the death and aiding the Truth Commission to clarify the human rights violations that happened during the dictatorship era in Brazil [38].

Between 2005 and 2006, Sérgio Francisco Serafim Monteiro da Silva, archaeologist and graduate student at the Museum of Archaeology and Ethnology at the University of São Paulo, idealized a course in forensic archaeology [39]. This course was given at the Civil Police Academy of São Paulo, to minimize the problems regarding the loss of criminal evidence caused by the lack of knowledge from personnel performing the collection of such pieces of evidence. The course was directed only toward police officers and professionals involved in the criminal/judicial system. Besides the demonstration of the importance of forensic archaeology and anthropology in medicolegal settings, the course also explored the knowledge of other forensic disciplines, such as legal medicine, taphonomy, and entomology [17].

In 2009, the Brazilian government established a working group for the investigation of missing persons and cold cases [40]. This effort seemed to be the first step into following the direction and examples from other countries in Latin America with the creation of a specialized group such as the Argentinian Forensic Anthropology Team (EEAF) and the Peruvian Forensic Anthropology Team (EPAF). However, two years after the announcement of the working group, the project was forgotten and left unattended, closing the communication channels among members of the team [40].

In the study “Evaluating the demand of experts in forensic anthropology for the improvement and modernization of specialized analysis,” Dr. Andrea Lessa shows the nuances of anthropological analysis in the main Official Medicolegal Institutes in Brazil [41]. The study demonstrates that the Institutes face technical difficulties that hinder the importance of anthropological analysis as a means to guarantee the fundamental rights of individuals. Lessa expresses that “the data presented prove the importance of the formal existence of forensic anthropologists in the Medicolegal Institutes, contrary to the general idea that the anthropological analyses were a “complementary exam,” of lesser importance, or not accurate” [41].

To understand the current situation of forensic anthropology in Brazil, the Department of Justice and the National Office for Public Safety carried the “Diagnostic of the Brazilian Criminal Investigation” in 2012. The final report on forensic anthropology was released again by Dr. Andrea Lessa, member of the National Museum. The report stresses that the importance of research in this field relies on the world recognition of forensic anthropology as one of the disciplines that contribute to the resolution of criminal investigations [42].

On August 16th and 17th, 2014, Rio de Janeiro hosted the first National Conference in Forensic Anthropology. In August 2015, the first Brazilian International Meeting in Forensic Anthropology was hosted in the city of Natal, both events being organized by ABRAF, the newly founded Brazilian Association of Forensic Anthropology. The discussions and debates at these meetings revolved in knowing what path forensic anthropology was heading towards in the 21st Century, what technologies were being developed and what were the workloads being addressed to experts in the field.
The researches being carried in Brazil had been essentially developed in Universities, with rare cases of researches in the Medicolegal Institutes. The overall theme has been human identification, with age at death analysis based on dentition. This aspect has been highly studied in Brazil due to the early research by Nicodemus and colleagues on the mineralization of teeth in the Brazilian population [43]. Although some of the departments that carry researches in forensic anthropology are the Departments of Anthropology and the Departments of Medicine, the prevalence of studies carried is derived from the Departments of Odontology. Specific majors and minors, or graduate courses, in forensic anthropology at Universities and Colleges are inexistent in Brazil. This phenomenon can be understood by the main research theme in age at death from teeth eruption and development being in the realm of Odontologists, and also from the aspect that early physical anthropological studies were mainly related to studies of “race,” which is seeing as a social science by many.

Currently, the vast majority of experts in forensic anthropology working at Medicolegal Institutes, teaching classes in the field, or working as private consultants in Brazil, have to perform both the anthropological and odontological analyses. Therefore, the usual find is that forensic anthropologists in Brazil are Odontologists (or dentists). Additionally, due to bureaucracies and funding issues, Brazil decided to combine both disciplines — forensic odontology and forensic anthropology — to a single expert who could carry both specialties in their analyses.

5. Where to go from here

Although there is a lack of resources related to the forensic anthropology history in Brazil, it is clear that it has its roots at the legal medicine and physical anthropology being applied in Europe. The Brazilian forensic anthropology started as a specialized work being carried out by physicians and other experts who worked for the State, in the early Medicolegal Offices and Institutes. Thus, it has been an essential function and exclusively performed by the State, with some new trends starting in the past decades. Many new initiatives have been successful, allowing a channel for discussion and development of new methodologies, and debates related to the evolution of the field to attend current demands.

It is important to note that we should recognize that our history and needs are different when compared to other countries. Although this work intended to shed light into the initial and current state of forensic anthropology in Brazil, it also exposes the difficulties the country faces in the field. The hope is to open a channel for discussion and to bring the Brazilian forensic anthropology scene to international attention while giving background information on how we reached the current state of our field.

The changes needed must come from efforts in education and legislation in the country. Nevertheless, Brazilian agencies and institutions would be better equipped if they recognized that the valuable forensic anthropologist experts are the ones with both specialized educational background and field experience. Therefore, academic programs in physical and forensic anthropology to train students in theory and practice, in a research environment, at the masters and doctoral levels should be initiated. This is particularly important to differentiate the current practices in which students pursue graduate degrees in Odontology or Medicine to research their thesis and dissertations with a focus on forensic anthropology. Forensic anthropology should be seen as its own field, with its own peculiarities, research questions, and specific training. The change in legislation stating and establishing the profession of forensic anthropologist would also come a long way. The fact that Brazil lacked the initial training when many other countries were developing their forensic anthropology teams does not mean that we cannot improve our field now, creating the opportunities that are necessary to develop the future Brazilian forensic anthropologists.

Declaration of competing interest

The author declares that there is no conflict of interest.

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