H2 New Methodologies and Protocols of Forensic Identification by Craniofacial Superimposition

Eugenia Cunha, PhD, Univ of Coimbra, Life Sciences Dept, Forensic Sciences Center, Coimbra, 3000-056, PORTUGAL*

After attending this presentation, attendees will become familiar with the issues of Craniofacial Superimposition (CS).

This presentation will impact the forensic science community by showing how Methodologies and Protocols of forensic identification by Craniofacial Superimposition (MEPCROS) will be used by European scientific units; to promote and validate exchange of CS protocols among different European institutions.

One of the most important objectives of forensic anthropology is the determination of a victim's identity, a process that always requires a suspect in order to compare antemortom and postmortem data. Unfortunately, antemortem records are often unavailable and DNA may be impossible in circumstances where, for example, there aren't known relatives of the presumed victim. Moreover, there are situations where many individuals share the same biological profile (e.g., mass disasters, mass graves). In these situations, CS techniques (a forensic identification process where photographs of a suspected victim are superimposed over an unidentified skull in order to establish whether they belong to the same person) have been successfully applied to exclude or establish identity, particularly in Europe. However, no standards exist and forensic experts apply their own approach to the problem based on the available technology and their knowledge and expertise.

The new MEPROCS projects goal is to propose a common European Union (EU) framework to allow the extensive application of CS in practical forensic identification scenarios commonly tackled by European police units. This framework will include: (1) the implementation of an existing semi-automatic method to assist forensic experts in the application of the CS technique resulting in a simple, quick, and systematic approach; (2) the definition of standard protocols within Europe, leading to the objective application of the CS technique in different forensic identification scenarios; and, (3) the specification of a forensic science methodology to provide an objective evaluation of the forensic identification results achieved by CS, avoiding particular assumptions that could bias the process. Hence, the project clearly promotes the validation and exchange of CS protocols and methodologies among different organizations. The particular objectives of this project concern supporting the development of a trustworthy CS methodological framework by fulfilling requirements covering educational, technical, economic, social, and security aspects.

MEPROCS is a two-year project founded by the EU commission with more than one million euros. It was launched in Mieres (Spain) on March 12, 2012. It is coordinated by the European Centre for Soft Computing. The multidisciplinary list of participant institutions of this network are: the European Centre for Soft Computing from Spain, the Consorzio Ricerca Sistemi ad Agenti (CORISA) from Italy, the European Council of Legal Medicine from Germany, the Physical Anthropology Lab of the University of Granada from Spain, the Israel National Police (Ministry of Public Security) from Isreal, the Forensic Sciences Centre of the University of Coimbra from Portugal, and the Guardia Civil (Ministry of Interior) from Spain. In addition, there are some other institutions, associations, and/or researchers taking part in the network either as associated partners or supporting institutions: Policía Judiciária (Portugal), Council of Forensic Medicine (Turkey), Forensic Anthropology Society of Europe, International Academy of Legal Medicine, International Association of Forensic Sciences, World Police Medical Officers, Department of Forensic Medicine (University of Copenhagen), Forensic Science Programme (Universiti Sains Malaysia), and Laboratory of Forensic Anthropology and Odontology (LABANOF, University of Milan).

The objectives of MEPROCS require bridging the gap between researchers in forensic anthropology and computer science by defining means to foster the dialogue between the different actors involved (technological partners, forensic anthropologists, and end users) across Europe. MEPROCS is an outstanding tool permitting the creation of a coordinated and connected series of activities in order to put the latter tasks into effect. The network is open to incorporate relevant researchers and/or institutions in the field of craniofacial identification in 2012 and early 2013.

Craniofacial, Superimposition, Forensic Anthropology

 ** Presenting Author*