H46 Results From a Survey on Computerized Facial Approximation

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The goal of this presentation is to provide the forensic identification community with feedback about opinions toward computerized facial approximation (CFA) programs and to promote an interdisciplinary discussion on the potential of CFA as a tool for solving unidentified decedent cases.

This presentation will impact the forensic science community by presenting the varied opinions of identification specialists toward computerized facial approximation and the unidentified backlog.

Recent advances in computer animation and three-dimensional imaging have stimulated developments in computerized facial approximation. Some programs are already being used for casework, while many others are still under development. Several advantages offered by CFA are: (1) shorter generation times as compared to traditional methods; (2) the possibility for non-artists to generate approximations, allowing agencies to do so with their own personnel on their own schedule; (3) the reduced handling of fragile remains, and with some programs the elimination of the need to de-flesh remains; and, (4) the digital archiving of unidentified cases for future analyses. The primary disadvantage is the need to digitize an unidentified skull using equipment that most forensic identification agencies do not possess. Despite this disadvantage, many agencies are seeking tools such as CFA in order to utilize as many resources as possible to re-evaluate and publicize cold cases. Given these recent efforts and the inevitable increase in the use of CFA programs, this survey was designed to investigate previously unaddressed issues regarding the facial approximation needs of the identification community.

Email invitations were sent in the summer of 2008 to 764 forensic identification specialists in the U.S. asking them to participate in a web- based survey on CFA. The survey consisted of 29 multiple-choice questions concerning the use of facial approximation, interest in CFA, program features, and the unidentified backlog. An open comment box was provided at the end of the survey for additional comments about survey content. Eighty-six anonymous responses from medical examiners/coroners, forensic anthropologists, forensic artists, law enforcement officers, and other identification specialists were collected and evaluated.

According to this survey, sixty six percent of respondents are interested in using a CFA program at their agency, while only 50% are currently producing approximations in the traditional methods. Only 39.5% of respondents would be able to obtain a three-dimensional scan of an unidentified skull in order to use a CFA program. Fifty-one percent think CFA programs will play a significant role in reducing the backlog of unidentified decedent cases in the United States. Seventy-two percent answered that if a thoroughly tested CFA package were made available to their agency for no charge, their agency would use this system as its primary method of generating facial approximations for unidentified decedent cases. When asked to choose from among three types of CFA programs which one they thought would produce the most accurate images, fifty-five percent selected a program which calculates a facial approximation based on a large reference database of faces, thirty-five percent selected a virtual clay program based on traditional facial tissue depth markers and tables, and ten percent selected a program which allows you to paste three-dimensional eyes, noses, and mouths onto a skull (n = 83). When asked to select the primary reasons for the high number of unidentified decedent cases in the United States, seventy- eight percent selected no way to cross-reference unidentified cases with missing persons, seventy-one percent selected no centralized system to publicize approximations/images, and sixty-nine percent selected no centralized resources/guidelines for processing and analysis of unidentified cases (n = 72).

The results of this survey indicate that a large proportion of the forensic identification community is interested in using CFA programs. While opinions about types of programs and features varied considerably, most individuals preferred a mathematically-oriented program that can address the ancestral diversity of unidentified decedents in the United States, including Hispanics. Regarding the unidentified backlog, survey respondents consistently emphasized the need for inter-agency cooperation The results of this survey will hopefully provide valuable information to individuals involved in the development of CFA programs and help promote a cross-disciplinary dialogue about facial approximation and how it can be used to help address the backlog of unidentified decendents in the United States.

Facial Approximation, Human Identification, Survey

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