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Guide for Facial Comparison Training of Reviewers to Competency

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34 1. Scope

35 1.1 This guide is intended to provide a minimum set of criteria for training of
36 personnel who will conduct facial comparisons at the reviewer level.

37 1.2 Facial review is a comparison of image-to-image often used in either
38 investigative and operational leads or intelligence gathering applications. Review
39 encompasses a broad range of purposes and levels of rigor involved in the
40 analysis, though it is by nature more rigorous than the assessment process.

41 1.3 The task of facial review includes, but is not limited to, the use of a facial
42 recognition system to review one-to-many galleries. This task may also include
43 applications involving high volume throughput or escalations from facial
44 assessment.

45 1.4 The Facial Reviewer role performs a comparison of image(s)-to-image(s) as
46 their primary job function, often used in either investigative and operational leads
47 or intelligence gathering applications.

48 1.5 Facial Reviewers require a basic level of training to acquire general knowledge
49 and comprehension of the technology and major elements of the facial
50 comparison discipline and use of available tools.

51 1.6 The intended audience of this document includes agencies and individuals
52 involved in facial comparison at the reviewer level.

53 **2. Terminology**

54 2.1 See ASTM E2916-13 Standard Terminology for Digital and Multimedia Evidence
55 Examination ¹:

56 **3. Summary of Practice**

57 3.1 This guide provides the minimum criteria for training of facial reviewers and
58 should be read in conjunction with the FISWG Guidelines and
59 Recommendations for Facial Comparison Training to Competency and the
60 FISWG Recommendations for a Training Program in Facial Comparison.

61 3.2 Agencies should include competency testing as a component of training and
62 quality assurance programs as a reliable means of measuring the quality of
63 each trainee's ability to perform work. Competency testing may help identify
64 opportunities for continuing education and training.

65 3.3 Minimum training requirements for facial reviewers includes demonstrating
66 competency of the following:

¹ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

- 67 3.3.1 Familiarity with the history of facial comparisons in forensic science to
68 include past and current methods, including the Bertillon method, and
69 their shortcomings.
- 70 3.3.2 Understanding of common terminology used in the community.
- 71 3.3.3 The user must understand common terminology and should be able to
72 define human face recognition (familiar/eyewitness) and automated facial
73 recognition as well as explain the differences and their distinction from
74 holistic face processing and unfamiliar face matching.
- 75 3.3.4 Demonstrate an understanding of the basics of image science including,
76 but not limited to:
- 77 3.3.4.1 Vision (e.g., Color, Illumination, Perception)
- 78 3.3.4.2 Photography (e.g., Distortions, Pose, Expression, Perspective)
- 79 3.3.4.3 Components of digital images and compression
- 80 3.3.4.4 Detection of alteration within images (e.g., excessive
81 compression, manipulation)
- 82 3.3.4.5 Properties of video (e.g., Limitations, Formats, Extraction of Stills)
- 83 3.3.5 Demonstrate proper handling of media, write protection of that media, and
84 generating working copies.
- 85 3.3.6 Demonstrate an understanding of the principles of comparison. These
86 principles include:

87 3.3.6.1 Process of Analysis, Comparison, Evaluation, and Verification

88 (ACE-V)

89 3.3.6.2 Assessment of facial image quality to determine the value for

90 comparison based on the visibility of facial features

91 3.3.6.3 The differences between class and individual characteristics, as

92 well as those of transient and stable characteristics.

93 3.3.6.4 Methods of comparisons

94 3.3.6.4.1 Morphological Analysis (recommended technique)

95 3.3.6.4.2 Photo anthropometry (a technique which is not

96 recommended for facial review)

97 3.3.6.4.3 Superimposition (a technique which is only

98 recommended when used in conjunction with

99 morphological analysis)

100 3.3.6.5 Conclusion Levels/Scale

101 3.3.6.6 Validation of Facial Comparisons (i.e., Ability to render proper

102 conclusions)

103 3.3.6.7 Overview and effects of cognitive bias, to include confirmation

104 bias

105 3.3.6.8 Understanding the necessity for verification by a second trained
106 reviewer

107 3.3.7 Knowledge of automated facial recognition systems, to include, but not
108 limited to:

109 3.3.7.1 User input and operation

110 3.3.7.2 System operation and output

111 3.3.7.3 Facial recognition algorithm limitations including, but not limited
112 to:

113 3.3.7.3.1 Imaging conditions (e.g., image quality, pose)

114 3.3.7.3.2 Accessories (e.g., eyeglasses, jewelry)

115 3.3.7.3.3 Obstructions (e.g., masks, scarves, head coverings)

116 3.3.8 Familiarity with basic image processing operations (e.g., brightness and
117 contrast adjustments, rotations, cropping)

118 3.3.9 Familiarity with the bones that comprise the skull and the overlaying
119 musculature.

120 3.3.10 Knowledge of the ASTM E3149-18 Standard Guide for Facial Image
121 Comparison Feature List for Morphological Analysis, to include, but not
122 limited to:

123 3.3.10.1 Hair (e.g., hairline, baldness)

124 3.3.10.2 Eyes and Eyebrows

125 3.3.10.3 Nose

126 3.3.10.4 Mouth

127 3.3.10.5 Ears

128 3.3.10.6 Facial lines, marks, and scars

129 3.3.11 Knowledge of the variable nature of the human face over time, the level
130 of permanence of individual features, and understand the results of
131 aging.

132 3.3.12 Knowledge of alterations of the face, both temporary and permanent.

133 3.3.12.1 Examples of temporary changes are: cosmetics, weight
134 changes, hair color changes, wounds, and abrasions.

135 3.3.12.2 Examples of permanent changes are: scars, surgical alterations,
136 tattoos, and piercings.

137 3.4 Minimum training requirements for facial reviewers includes demonstrating
138 awareness of the following:

139 3.4.1 Court testimony.

140 3.4.1.1 Knowledge of individual agency policies and procedures is
141 beyond the scope of this document and is the responsibility of
142 the user's agency.

143 3.4.2 Their agency's authorities and policies regarding acceptable use and
144 dissemination;

145 3.4.3 Relevant judicial decisions that govern admittance of scientific evidence in
146 court (e.g. Daubert).

147 3.4.4 The perception of facial recognition in the legal community.

148 3.4.5 Proper chain of custody, documentation and notes, reporting of results,
149 and technical review.

150 3.4.6 Common misconceptions created by popular media to include fictional
151 television shows, novels, and movies, cumulatively known as “The CSI
152 Effect.”

153 **4. Keywords**

154 4.1 Facial Reviewer, Training, Facial Identification, Facial Comparison

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