Facial Recognition: The Impact on Identifying People When Features Around the Face Are Altered

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This experiment examined facial recognition when changeable features (hair color, hairstyle, facial hair, and eyeglasses) are altered from a person's original appearance. The hypothesis is: if a person is tasked to identify someone whose appearance is altered by a change in hair color, hairstyle, facial hair, and eyeglasses, then the person will experience difficulty identifying the person when any of the features are changed, with the highest level of difficulty being with the change in hair color. 50 participants completed five trials. In each trial, participants studied a "suspect's" picture for 10 seconds, waited 10 seconds, and then identified the "suspect" from a "line-up" of five other pictures. In the baseline trial, the "suspect" was not altered. In the other trials, either hair color, hairstyle, facial hair, or wearing eyeglasses was changed from the "suspect's" picture to the "line-up" picture. Difficulty was based on number of attempts to correctly answer and how long it took. Unpaired 2-tailed t-tests were conducted to compare each trial to the baseline. All trials except Trial 5 were significant; this was reflected by participants performing similarly in the baseline and when the "suspect's" eyeglasses were removed. The trial regarding hairstyle proved most difficult. Therefore, the hypothesis was not supported. Aside from the eyeglasses trial, participants exhibited difficulty identifying the correct pictures in all other trials. This indicates that despite the hypothesis not being supported, changing hair color, hairstyle, and facial hair does increase the difficulty of identifying people when features around the face are altered.

Awards Won:
Central Intelligence Agency: First Award: $1000 award