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Background

Māori have traditionally employed, and continue to employ, culturally unique, highly distinctive and dynamic facial expressions, gestures, and adornments as unique non-verbal methods of facial communication.

Very little is known about how Māori facial tattoos and distinct facial expressions might affect visual perception.

Aim

To test the hypothesis that the presence or absence of a Māori facial tattoo affects the perceived emotional content of that face.

Specific Aims

1. To carefully create a set of stimulus images with people wearing and not wearing facial tattoos.
2. To develop a protocol in which eye movements of the observer could be measured, as they viewed tattooed and non-tattooed faces.
3. To develop a protocol in which observers responses to faces wearing and not wearing tattoos could be measured

Stimulus set creation

A stimulus set of images (two female and two male actors) was created. Actors expressed seven emotional states [1]: anger, fear, disgust, surprise, sadness, happiness and neutrality. The traditional "pukana" expression was also included (see Figure 2) [2]. Actors were photographed both wearing and not wearing moko.

To ensure the consistency between images containing and not containing moko, we used software (Photoshop, Adobe, CC 2014) see Figure 2) to transplant moko onto non-tattooed images.

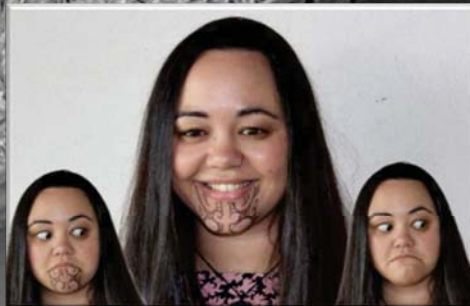


Figure 2. The happy expression with moko, flanked by the traditional "pukana" with and without moko



Figure 1. The neutral expression, created by digitally "grafting" Designs onto the originally untattooed faces

Eye Tracking Analysis

Software was developed to present and record responses from participants system was created using Matlab (Natick, VA) and the psychophysics toolbox.

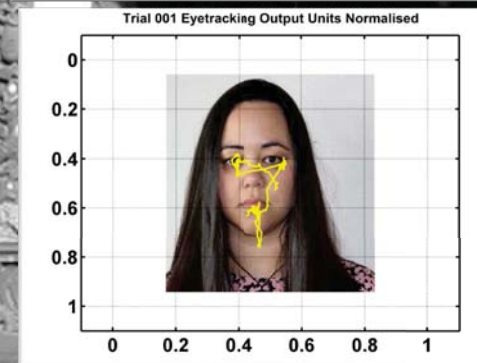


Figure 3. The yellow trace indicates the eye gaze of the observer. Units normalized to the presentation screen

Psychometric Evaluation

A psychometric evaluation experiment was created using Qualtrics web-based survey software (Qualtrics, 2013). In this experiment we display all stimulus images with a rating scale (PAD) [3] with the intent of gauging emotional content of the stimuli



Figure 4. The Arlington ViewPoint eye tracker 400Hz Binocular Real-time Torston used in the study

Summary/Future Work

Data collection and analysis is now underway.

In the future we wish to examine and characterize the relationship of these types of faces in the context of known standard facial spaces.

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