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# Generalisation from three-quarter views of faces in the yaw and pitch axes.

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# Generalisation from three-quarter views of faces in the yaw and pitch axes.

## **Abstract**

Abstract presented at the 39th Australasian Experimental Psychology Conference, University of New South Wales, 12-15 April 2012

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views, quarter, three, generalisation, pitch, axes, yaw, faces

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the exposure is effective, identity priming should be observed when a/?/-bearing auditory prime (e.g., thlow or thlower) precedes a matched visual target (e.g., slow or flower) not seen or heard in the exposure phase. The results revealed that, regardless of the training, /?/-bearing words primed /f/-bearing targets but not /s/-bearing targets. These results suggest that lexically guided learning may not be possible when words are pronounced with the incorrect phoneme, although further investigation is required into why /?/-bearing words primed /f/-bearing words regardless of training.

### **Generalisation from three-quarter views of faces in the yaw and pitch axes**

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In recent studies from our lab (Favelle, Palmisano & Maloney, 2007; Favelle, Palmisano & Avery, 2011), we have demonstrated that when matching to or from full-face views, face recognition following rotations in the pitch axis is viewpoint dependent and that the effect of change in viewpoint in the pitch axis is qualitatively different to that in yaw. The aim of the current study is to determine whether this pattern of results holds true when generalising from other views of faces rotated in either the pitch or yaw axis. Three groups of participants completed a sequential matching task in which they were asked to match a: (i) 45° leftwards yaw, (ii) 45° upwards pitch, or (iii) 45° downwards pitch to one of 21 views rotated in either axis (0°, left and right yaw 15° – 75°, pitch-up and pitch-down 15° – 75°). Results showed that the pattern of generalisation depends on the angle and the axis of rotation of both the learned and tested views and is different to that found in previous studies.

### **The role of motion in recognising facial expressions**

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Some facial expressions are better recognised from either the top half of the face whereas others are better recognised from the bottom half. For instance, happiness and disgust is seen more readily in the bottom half of static expressions, whereas anger and fear is more quickly and accurately judged from the top half. The present study investigated the role of motion in facial expression perception and whether this pattern was evident for dynamic faces. Participants were asked to identify the expression in static and dynamic faces (top half, bottom half and full-face) on 10 models (5 male and 5 female) each posing 6 facial expressions (anger, disgust, joy, sadness, surprise and fear). Confidence ratings were also obtained. Results are discussed with regard to the impact of motion on facial expression identification accuracy.

### **The usual suspects in an unusual setup: Forensic-phonetic investigations into audio-visual perception of consonants spoken through face-concealing garments and headgear**

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In this study 44 participants performed a consonant recognition task in which they were exposed to 612 /C1?:C2/ nonsense syllables embedded in a standardised carrier sentence. The accuracy of consonant recognition is compared when stimuli in the form of sound/video recordings of 'talking heads' are presented in audio-only and in the corresponding audio-visual condition. Additionally, identification is examined under different 'guise' conditions, whereby the speakers' faces are partly or fully hidden by various face coverings, e.g. a surgical mask, niq?b, motorcycle helmet or balaclava. Of a total of 26,928 consonant judgements approximately 8% recognition errors occurred. Perception errors cluster in systematic ways and can be classified with respect to phonetic (dis)similarity of the target stimuli. They further demonstrate the perceivers' sensitivity to differences in presentation modality and type of face concealment. This work on the impact of 'facewear' on speech acoustics and perception originates from research carried out in forensic speech science. If, for instance, no permanent recording of a suspect's voice exists, the forensic-phonetic expert may be asked to test the reliability of eyewitness testimony. The only forensic evidence available in such scenarios is hence the witness's memory of the speaker's voice characteristics and/or the speech content.