

## **Identification of Facial Emotions by University undergraduates of Igbo Extract**

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### **Abstract**

Controversy over claims of cultural universal of a number of facial emotions (anger, happy, fear, sad, surprise, and disgust) goes on without a contribution from a study of any group in Igbo tribe. As a result, 66 university students of Igbo tribe, mean age = 24 years, balanced for sex (33 men, 33 women) were employed as participants in an experiment in which Ekman (1972) standard methodology was used to determine the number of emotions they could recognise. Although the results showed that four: happy, surprise, fear and disgust of the six facial emotions were identified at a significant level of confidence, only happiness emotion got 100% recognition. While awaiting future studies that will use a good representative sample of Igbo population, the results of the study were considered as important contribution to the debate on cultural universal of facial emotions that pushed the position of happy facial expression to a higher level on a scale of cultural universal. The results and explanation proffered were considered as catalyst for more cross-cultural studies with different methodologies to determine the universality of 'happy' facial expression.

**Key words:** Identification of emotion; Facial Emotions, Igbo

### **Introduction**

The theory of cultural universal of facial emotions (e.g., Ekman, 1972; Ekman & Friesen, 1971; Ekman et al, 1987; Ekman, Sorenson, & Friesen, 1969; Izard, 1971) is well known in social psychology of nonverbal behaviour. Cultural universal of facial emotions is based on the premise that similar facial muscles or movements are utilized by all Homo sapiens (Bassili,1979; Ekman & Friesen, 1971). Hence, pre-literate, visually-isolated South Folks of New Guinea were able to associate emotional concepts with appropriate facial behaviour as did members of western and eastern literate cultures. Also, American college students were able to understand videotaped facial emotions of New Guineans (Ekman & Friesen, 1971). In spite of the theory's appeal (see for e.g., Elfenbein & Ambady, 2002; 2003) controversy still surrounds its acceptance by the scientific

community. Gendron, Roberson, van der Vyver, & Barrett (2014) for example, asserted that the universality is due to methodological factors such as cultural and contextual cues provided in the experiments; yet some (e.g., Russell et al., 1994) ascribe it to many variables ranging from forced-choice response format to preselected posed facial expressions. Still others insist that four and not six facial emotions are universal (e.g., Jack, Sun, Delis, Garrod, & Schyns, 2016). In spite of Ekman et al. (1987) attempt to resolve some of the inconsistencies, the controversy still persists without a contribution from social scientists studying the behaviour of Igbo people.

With goal of contributing to the ongoing debate spanning over five decades, the main objective of this article is focused on use of the standard methodology employed in Ekman (1972) experiments to determine the number of facial emotions recognisable by literate young adults from Igbo tribe. If the cultural universal thesis is minimally true, literate Nigerian Igbos whose ancestors had social interactions with missionaries and traders from the western world within the past one hundred years, are expected to discern expressions of emotions on white faces.

## **Method**

### **Participants**

Seventy-eight undergraduate students in the Department of Psychology, Nnamdi Azikiwe University, Awka, taking a course in experimental psychology participated in a study they were told is about perception of faces with opportunity for them to learn about free- and forced-choice response tests. They were also told they will be awarded 5 credit points for participation. Out of seventy-three that completed all items in the test, 66 were randomly selected for maximum equal numbers of both gender (33 men and 33 women of mean age = 24 years). Data obtained from 7 female students that were dropped, were not analysed.

## Materials

Unlabelled but numbered paper photographs of six facial expressions accredited to Ekman (1972) in L. Davidoff (1987, p.326) were used as pictorial stimuli for facial emotions. The facial expressions were accompanied by six names of different emotions: happiness, anger, fear, surprise, disgust and sadness and spaces were provided for the participants to write their age and gender.

## Procedure

The participants were seated in their normal classroom and instructed about the study. The materials were group-administered to them and the principal researcher demonstrated how they should take the test by choosing only one emotion name for a particular facial expression. The test took the participants about five minutes to complete. After debriefing, the test was used to teach them about free- and forced-choice response tests. Finally, their names were taken for each to get 5 points to be entered as part of in-course assessment.

## Design and Statistics

To test Igbo students' discernment of the facial expressions, nonparametric Cochran Q for related samples was used to test for significant differences in identification of the six facial expressions. If a significant difference occurs, a goodness-of-fit Chi Squared test will be used to ascertain the proportion of the participants that identified each of the facial expression correctly.

## Results

The participants were able to discriminate the six facial expressions of emotions, Cochran Q (5, N = 66) = 77.60,  $p < .001$ . Further analysis with goodness-of-fit Chi Square test showed that *happiness* facial emotion was most identified by all participants followed by *surprise* (77%), and *anger* (41%) was the least recognised. The results of the proportions of participants that recognised each of the facial expression are shown in their descending order of magnitude in Table 1.

Table 1 Igbo Students' Identification of the Six Facial Emotion

Emotions	N	%	$\chi^2$	P
Happiness	66	100	66.00	.001
Surprise	51	77	19.64	.001
Fear	43	65	6.06	.02
Disgust	42	64	4.91	.05
Sadness	31	47	.24	.70
Anger <sup>1</sup>	27	41	2.18	.20

<sup>1</sup>Note that  $p < .20$  is for 39 students that did not identify *anger* facial emotion, meaning that  $p < .80$  will stand for the 27 students that identified the emotion making it the least recognised emotion

## Discussion

Out of the six facial expressions of emotions presented for identification to young university students of Igbo tribe, four: *happy*, *surprise*, *fear*, and *disgust* were identified at a significant statistical level of confidence. The four facial emotions matched only two of the Jack et al. (2016) four emotions (*happy*, *surprise*, *anger*, and *sad*) claimed to be universal. The difference is likely to be as a result of confusion between physically similar facial emotions of 'surprise' and 'fear', and 'disgust' and 'anger' (Jack et al., 2016; p. 722). However, it is important to note that out of the four facial expressions identified in the experiment reported here, only 'happy' emotion got 100% recognition, followed by 'surprise' with 77% identifications. We are of the opinion that the confusion created by physically similar facial expressions (Jack et al., 2016) may have caused surprise, sad and anger facial expressions not to get 100% identification, if they are truly universal. In this case, the confusion made 'happy' facial expression to be the only distinct cultural universal. The results and the explanation are important to the debate on cultural universal of facial emotions because they have pushed the position of 'happy' facial emotion to a higher level on a scale of cultural universal. Although this finding is based on a small literate Igbo sample not representing the general population

of Igbo people, it is a catalyst for more in-depth cross-cultural studies likely to employ different methodologies to determine the universality of 'happy' facial expression.

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