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AN INVESTIGATION OF RECOGNITION OF FACIAL
EXPRESSIONS OF FIVE EMOTIONS:
A CULTURAL STUDY OF THE IBOS

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APPROVAL SHEET

This research work has been read and approved as meeting the requirements of the Department of Education, Ahmadu Bello University, Samaru-Zaria.

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DEDICATION

To God for his guidance and protection
and to the family of Mr. Fidelis M. O. Monyei
whose direct contribution and indirect moral
support made this possible.

ACKNOWLEDGEMENT

The writer owe a special debt to Dr. A. Mukherjee of the Department of Education, Ahmadu Bello University, Zaria, who did not only suggest the topic of this study but also directed and supervised it to conclusion. His proper guidance and encouragement actually spurred me on into completing this project.

She also expresses her profound gratitude to Dr. Ethel Nwagbo, for his support, consideration and thoughtful suggestions during the production of this work.

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ABSTRACT

This study examines Tomkins' (1962, 1963) theory of emotions which relates central nervous system (CITS) activity with the behaviour of facial muscles in the facial expressions of emotions. The sample of the study consisted of 100 subjects both male and female, selected among the Ibos of Nigeria consisting of 60 males and 40 females.

In this study the investigator is concerned about the facial expressions of the following five emotions *of* sadness, anger, fear, happiness, and love of both males and females among-the Ibos.

It was decided that photographs from four different areas of film industry popular in Nigeria would be used. These four industries were the Western films, the Indian films, the Chinese films, and the native Nigerian shows. Efforts were made to collect the facial photographs of the film actors and actresses of these four different areas from different film magazines available locally except for the Chinese male's • picture on happiness (photograph No. 11) and the Nigerian actors and actresses who were professionals in their field and who agreed to pose for their

passport photographs to be taken for each of the emotions studied.

Analysis of data was done by using the t-test. The results of which are discussed in the project.

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CHAPTER ONE

INTRODUCTION

The purpose of the study was to examine Tomkins' (1962, 1963) theory of emotions which relates central nervous system (CNS) activity with the behaviour of the facial muscles in the facial expressions of emotions. According to this theory facial expression of primary emotion are determined by biology rather than by social learning. Granting the above theory to be true, it follows that the facial expression of primary emotions will be the same in human beings of all different cultures.

There is however reason to believe that many of these emotions evolved much later in history of evolution of homosapiens. To imagine the first generation of the homosapiens, but manifesting all these different emotions from the very first day of their existence is too far fetched. Primitive men were completely at the mercy of nature and other wild life. Their survival depended primarily on two aspects namely:

1. Lack of chance factor and
2. Communal living in groups.

The male species of the homosapiens being more powerful and agile on their feet, were responsible

waiting outside to kill and eat them. So children grow up with differential experiences with various sources of fear, viz, juju, the child catcher, ghosts, magician, monster etc. When different levels of fear exist in different degrees in different cultures and homes, then there are reasons to believe that there will be differences among different individuals in recognizing facial expressions of fear as an emotion and in that case Tomkins' species - constant theory of emotion will not be supported in that respect.

Love is another emotion which the investigator believes is the product of civilized living in a sophisticated society. There are many societies and languages where the concept of love is almost non-existence. Love and sex can be distinguished from each other from their respective psychological view points. Sex is another primary drive which is explained by Cannon's theory of homeostasis. The need for sex may not necessary be associated with the concept of love though the need of being loved and to love is usually associated with sex. It is however worthwhile to remember in this connection that the investigator is restricting the word love to imply love as an emotion as experienced by two oppositely sexed adults, thereby excluding

being sad and being happy. The primary emotions of sadness and happiness are therefore likely to be species - constant aspects of behaviour.

When we consider some other emotions like anger, fear, and love, the investigator's hunch is that there are emotions which evolved thousands of years after the first evolution of the homosapiens. Taking anger as an emotion, its corresponding behaviour will be verbal or non-verbal or physical aggression. The question of verbal aggression does not arise in the case of the first generation as there was no language. There are many cultures and societies where pacificism is the life style of the members. Bateson (1969) reports that among the Hutteries aggression is unknown. Taking aggression as a behaviour and granting anger as its antecedent emotion it is reasonable to assume that the emotion of anger perhaps evolved much later in the history of mankind.

There are many families in many different cultures where children are reared to grow up without experiencing any kind of fear and there are many homes in many different cultures where parents control their children by inducing fear into them by saying that ghosts or monsters are

love within mother and son, between father and daughter, love between brothers or between sisters or even of a person for his discipline or profession, etc. This point of view can also be examined from a different angle. The female species of the first generation of homosapiens were certainly more dependent on their male species than the female members of the society of today.

There are many instances in the modern world where marriage are breaking off, and alarmingly increased number of divorces are taking place everyday. Marriage guidance counselors and psychologists view the break off of marriages as primarily due to lack of love between the marital partners. Their advice mostly to the women is that if they want their marriage to be a success, they must always be able to make their husbands or partners feel their love for them. The investigator think that there is great deal of truth in the above point of the psychologists. This is also true for the husbands and the male partners in the family. Since the woman is considerably dependent on the man, it depends primarily on the woman to keep her man tight to her throughout life by their love towards their husbands. The primitive women of the first generation of the homosapiens were far more dependent on male members of the group. Their survival

depended on how much they could keep the male members in control by loving them and taking care of them. In other words the investigator believes that love as an emotion especially in the facial expression is more likely to be constant aspect of behaviour among the females than among the males. At the same time it may be that different cultures have exaggerated or minimized the role of love as an emotion especially among their male species. According to the above argument is sensible this study is likely to show some differences from what are expected according to Tomkin's theory.

The objectives of this study are therefore to examine Tomkins' theory mentioned above by undertaking cultural investigation of the facial expressions of the five emotions e.g. sadness, anger, fear, happiness, and love by both male and female actors of different cultures as recognized by subjects of the Ibo culture.

The next chapter deals with the background literature of this study.

CHAPTER TWO

BACKGROUND LITERATURE

2.1 Definition of Emotion

The Shorter Oxford English Dictionary defines emotion (in psychology) as "a mental feeling or affection, distinct from cognitions or volitions". In his Dictionary of psychology, Drewer (1952) describes "emotion" as a complex state of the organism involving widespread bodily changes. Mentally, this is accompanied by strong feelings and impulses to behave in particular ways. He has added two more ingredients to the mixture - bodily state and behaviour. Emotion then also involves physiological and behavioural changes - such change may vary along several dimensions, it may, for example, be great or small, acute or chronic, we may enjoy it or we may not.

Emotion is feeling; it is a bodily state involving various physical structures, it is gross or fine-grained behaviour and it occurs in particular situation. When we use the term we mean any or all of the possibilities each of which may show a wide range of variation.

Emotion can however be easily regarded as an intervening variable, i.e. a variable which precedes

the response or terminal behaviour. It is a process which has to be the final behaviour. It is the hyphen between stimulus and response, a bond between S and R. It is usually triggered off from some source, usually the cortex, after some cognition has taken place. This cognition is carried through the sensory nerves, to the cortex where the message is decoded and emotions are generated. These emotions then in their turn determine the terminal behaviour. For example, "crying" is a behaviour distinct from its antecedent emotion which may be "pain", "grief" or even "happiness". Following the above arguments, it would be wrong to say that "crying" is an emotion. Also "crying", "fighting", "laughing" etc are examples of overt behaviour and their respective emotions which may be respectively pain, anger, and happiness, are examples of covert behaviours, better known as process or intervening variables. Conceptually speaking the following model shows where emotions lie, viz, source (stimulus)----- (EMOTION)----- Goal (Response) (Mukherjee 1982). This points to the major difficulty which besets the academic study of the subject. Strongman (1978) points that any theory of emotion or any empirical research on emotion deals only with some part of the broad meaning that the term has

acquired. Some theorists deal only with extremes, some say emotion colours all behaviour. There is no consensus of opinion among psychologists at present about the definition of emotion. Strongman in his book titled, "The Psychology of Emotion", argues that it is impossible to make conclusive statements about the whole subject merely from ideas or research in only one of its aspects.

2.2 Expression and Perception of Emotion

Emotion have a great impact on other people when they are expressed outwardly in the ways that can be perceived. When we perceive emotional responses in others, we respond in appropriate ways, perhaps with an emotional expression of our own. For example if one of my friends is offered a scholarship to study abroad, I may respond with joy, or depending upon my perception of the circumstances, I may be jealous.

Morgan, et al (1979) postulated in their book, "Introduction to Psychology", that we perceive emotion in others from many sources and identified the voice as one of the channels of emotional expression. For example screams denote fear or excitement, groans, pain, or unhappiness; sobs,

sorrow, and laughter, enjoyment. A tremor or break in the voice may mean great sorrow; a loud, high pitched, sharp voice usually means anger. While what is said and the way it is said are important in the perception of emotion we also perceive a great deal about emotion from facial expression. Facial expressions have been studied by a number of experimenters using posed photographs. In the early set of the studies, it was found that three dimensions of facial emotional expression can be perceived with reasonable accuracy (Schlosberg, 1954). These are pleasantness - unpleasantness, attention - rejection, and sleep-tension. The first dimension as the name implies, in the degree to which a facial expression represents feelings of pleasantness or unpleasantness. On the second dimension, attention - rejection, attention is characterized by wide-open eyes and often by flared nostrils and an open mouth, as if to bring the sense organs to bear on the object. In rejection, the eyes, tips and nostrils are shut, as if to keep out stimulation.

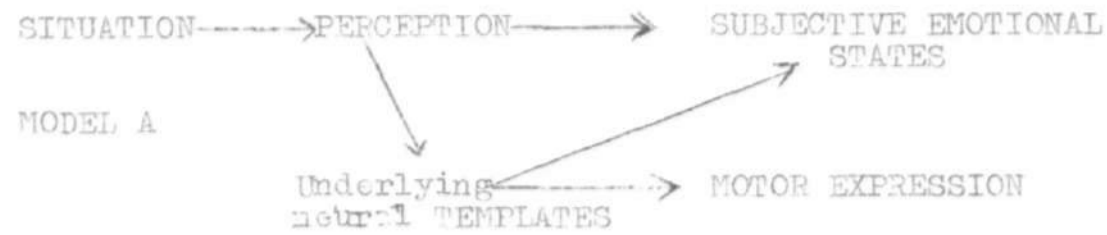
The third dimension, sleep-tension, refers to the level of tenseness or excitement portrayed. At one extreme is the relaxation of sleep; at the other is the expression of extreme emotional arousal. However later studies revealed that cer-

tain primary emotions were evolutionary in nature.

2.3 Theories of Emotion

There are many theories of emotion. They stem from various fundamental assumptions, they stress different problems and they can be distinguished both in the degree of their formality, and the degree to which they are anchored to empirical fact. Four basic approaches to emotion occupy the stage of contemporary psychological thought (Howard Leventhal 1979). These approaches are as follows, viz: attitudes or expressive motor theory, which is basically Darwinian. Body (or automatic) reaction theory which is between expressive action and subjective feelings. Although the precise nature of the connection is open to speculation. Many theorists of this persuasion argue for a peripheral feedback mechanism with the pattern of facial muscle contractions resulting in specific subjective emotional states.

In an attempt to illustrate attitude or expressive motor theory, Howard Leventhal postulated a schematic diagram which follows below to show the Darwinian or attitude model of emotion.



THE DARWINIAN OR ATTITUDE MODEL OF EMOTION
(Howard Leventhal 1969).

Expressive motor theories tend to take emotion for granted, i.e. the experience and expression are seen to be manifestations of an innate mechanism as illustrated in the above diagram. Given this perspective, psychological research has had two goals:

- (1) To describe the pattern of motor change accompanying particular feelings (and eliciting situations) and
- (2) to describe the adaptive value of behaviour and speculate about the species history that led to its development basically Jamesian.
- (3) Central neutral theory, which is in the tradition of Walter Cannon.
- (4) Cognition - arousal theory, which is currently the centre stage because of the provocative work of Stanley Schachter and his students.

Attitude or Expressive Motor Theory

Attitudes or expressive motor theories form the core of traditional views of emotion and this

group of theories of exceptionally varied. (Howard Leventhal 1979) the assumptions common to this class areas follows, viz:

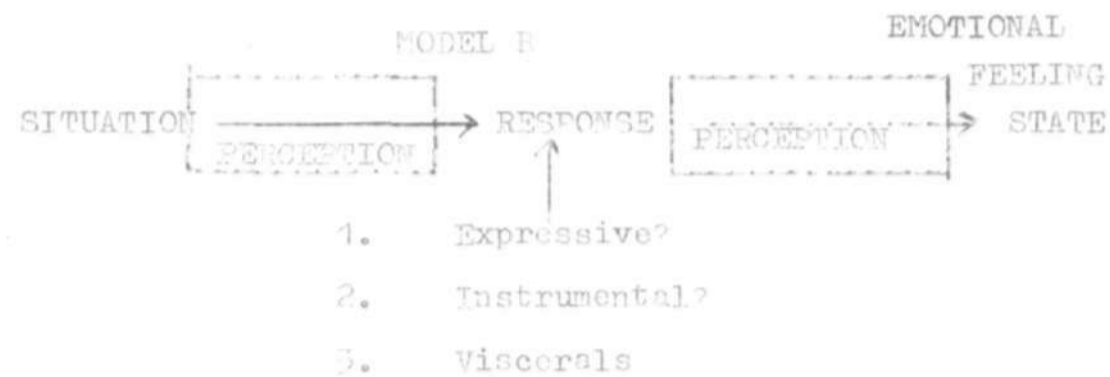
- 1) A stimulus-setting is perceived and produces activity in a neural structure which is specific to a particular emotion, the connections between stimulations and particular neural structures may be innate, conditioned or learned.
- 2) Activity in the underlying neural centre gives to feelings and also give rise to expressive motor behaviour (postural or facial changes).
- 3) The pattern of expressive motor behaviour, including postural and facial motor alterations, is specific for each of the emotional states.
- 4) There is some kind of feedback connection.

Body (Autonomic) Reaction Theory

Reacting to the traditional Darwinian theory which tended to take emotion for granted, James (1950) reversed this and argued that situations produce autonomic, expressive postural and adaptive behaviour which is the source of emotional experience (Model B below). He recognized that emotional experience is added to experience by some response of the organism, the emotional component of expe-

rience is added to experience by some response of the organism, the emotional component of experience was not inherent in the perception of the object, as objects could be experienced with or without emotion at different point in time.

James believed that the nervous system consisted of sensory, association and motor areas and lacked any special areas for creating feeling qualities (James 1890/1950). This belief along with the introspective experience also convinced him that feedback from motor reaction was the critical factor in adding feeling to experience. James settled on visceral reaction as the source of feedback, he felt they provided the specific qualities of different emotions e.g. feelings of fear, anger, shame, guilt etc and the sense of uncontrol liability which we attribute to feeling states.

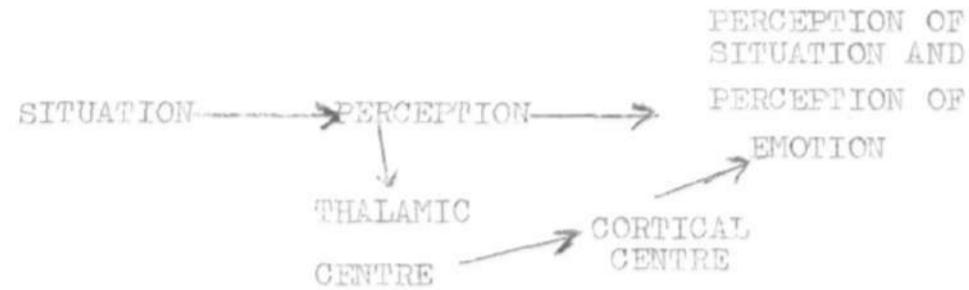


JAMESIAN MODEL OF EMOTIONS WITH KEY QUESTIONS
REGARDING THE ELICITATION OF BODY REACTION
(HOWARD LEVENTHAL, 1979)

Central Neural Theory

Cannon (1927, 1931) strongly objected to the Jamesian position and postulated that subjective feelings were generated by interaction between the thalamic and the cortex as illustrated in model C below.

MODEL C



THE CENTRAL NEURAL MODEL OF EMOTION
early version as expressed by Cannon.

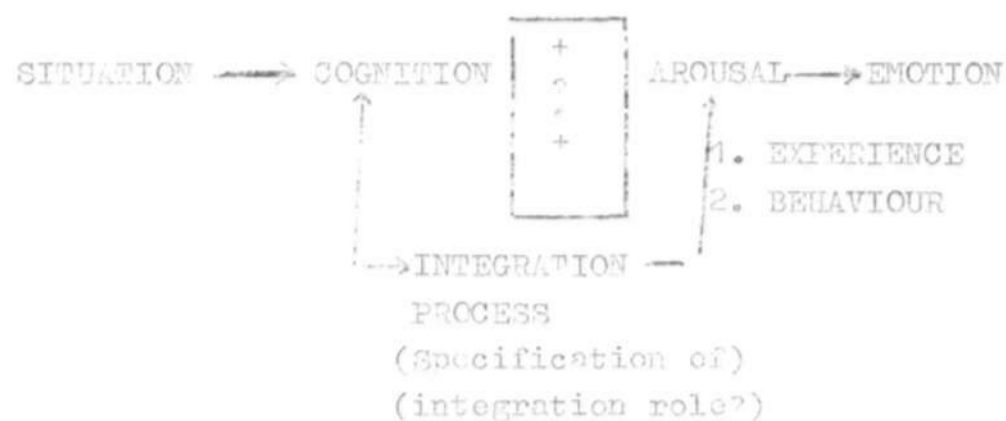
The positive aspects of this theory which emphasize internal homeostasis in the energy output demanded by the various environmental situations had relatively little influence on psychological study of emotion.

Cognition - Arousal Theory

Cognition - arousal theory is no new comer to the emotion theory (See Ruckmick, 1936, Ruessu, 1927, 1960, Sully, 1903). It was Schachter's

inventive handling of the model (Schachter 1964) which made explicit its assumptions, viz:

MODEL D



THE COGNITION - AROUSAL MODEL OF EMOTION
-- With question about the integration
process, by Schachter.

These assumptions make explicit a variety of issues many of which were simply alluded to by other theories.

Firstly, it is assumed that arousal is necessary or essential for emotional experience. Secondly, it is assumed that arousal is consciously noticed. Thirdly, it is assumed that the cognitive event itself is sufficient to create emotional quality. Fourth, it is obvious that cognitive definitions of cognition thus the experience of different emotions depend on the prior differentiation of meaning (cognition) of the eliciting

situation. Cognition -- arousal theory operate within a Jamesian framework. The theory continues to assume nervous system of sensory - perceptual association and motor functions with no special area dedicated to the creation of feeling.

About this Study:-

This study aims to examine (a) if there are universal facial expressions of the five emotions of sadness, anger, fear, happiness and love among the Ibo-race of Nigeria. From the foregoing pages, it is abundantly clear that there is such a thing as "universality" in the facial expressions of emotions, though some studies have failed to confirm the theory of Tomkins. They are made to believe that our non-verbal behaviour, such as facial expressions are learned during the process of socialization. At the same time, it can be further argued that most of the emotions excluding the very basic and formative ones e.g. sadness and happiness, evolved much later in the evolution of the homosa-piens. Mukherjee (1982) provided the above hunch to be true, this study aims to examine if Tomkins' theory is valid for all the emotions to be interpreted in this study.

2.4 ABOUT THE IBO PEOPLE

The Ibos occupy to the east of the River Niger, the whole of Onitsha and Owerri provinces and parts of Rivers and Ogoja provinces. To the west of the Niger they occupy Asaba Division in Benin Province and Abok Division in Delta province. Iboland is roughly circumscribed between the parallels of 6° and $8\frac{1}{2}^{\circ}$ East longitude, and $4\frac{1}{2}^{\circ}$ and 7° North latitude. The neighbours of the Ibos to the north are the Igala and the Tiv, to the East the Ekoi, to the South the Ibibio, the Ijaw and the Ogoni, and to the West the Bini and the Isoko.

The Ibos numbered about 5,426,000 in 1953. Almost 5,000,000 live to the east of the Niger, and less than 400,000 to the west of the great river. But Ibos are also to be found all over Nigeria. Iboland is thickly populated especially in Okigwe, Orlu, Owerri and Awka areas where the density of 1,000 persons per square mile has been recorded. The town of Onitsha has 76,921 people, Port Harcourt 71,634 and Enugu 62,764.

Dense forests cover the delta, but a great part of Owerri province as well as the part of Iboland west of the Niger is also thickly forested. Onitsha and Ogoja are mainly grassland with scattered forests especially along the rivers. The chief

river is the lordly Niger. Next come the other three main water ways: the Anambra, the Cross River and the Imo. The land is low lying (below 1,000 feet) except in the Awgu-Udi-Nsukka line. Awgu is 1,287 feet, Enugu 1,715, and Nsukka 1,315 feet above sea level. (NYB, 1958)

The year is divided into two clear-cut seasons: the dry season and the wet season. The wet season is from April to November with a break in August. The rainfall varies from about 105 inches in the south to 60 inches in the north. (Meek 1937)

Experts are not yet certain about the origin and meaning of the word 'Igbo'. It certainly did not originally refer to the whole Ibo tribe as we know it today, for before the arrival of Europeans about a hundred years ago, there was no common name for the whole tribe, but each town or village-group had its particular name often taken from an ancestor. Such derivations as these have been suggested: 'the people', 'man of the bush', and secondarily, 'slaves'. Until recently people applied the word 'Igbo' (or 'Ibo') primarily to the language and secondarily to Ibo speaking groups - other than one's own. A person would refer to himself as 'Igbo' (or 'Ibo') only when speaking to a foreigner. Hence it is not without reason that some

authors say 'the Ibo - speaking people'. Nevertheless, today, unity is greatly urged, and all are beginning to see that what the different groups have in common far outweighs their differences. In all this work the word 'Ibo' is used for the Ibo speaking peoples except where the contrary is clear.

THE IBO CHILD SHARES TWO WORLDS

Unlike American children, who are often confined to their own world, Ibo children grow up and participate in two worlds -- the world of children and the world of adults. Ibo children take an active part in their parents' social and economic activities. They are literally everywhere. They are taken to the market, to the family or village tribunal, to funerals, to a feast, to the far, and to religious ceremonies. Through these exposures, they start experiencing these various emotions of sadness, anger, fear, happiness and love.

THE IBO CHILD EXPOSURE TO SADNESS

From the age of about three years, the Ibo traditional child is reckoned as sufficiently advanced to be left more or less to his own devices. He begins to consort freely with children of his own age or company (otu) and to take part in work

or play.

Sadness is first experienced by the child when a close relative is sick. The patient will sit or lie down, a picture of abject misery, and receives condolences of his friends. Almost everybody around him wears a sorrowful countenance. Immediately the patient dies there is a wild outburst of wailing. This apparent loss, leaves the child very sad.

Wrestling is universal amongst boys and young men. There are great yearly contests. Although it is purely an amateur sport and there are no prizes won, they cannot take defeat with good grace. Defeat in such a sport will definitely sadden an Ibo young boy. Girls on the other hand are very fond of a certain form of step-dancing. Failure to meet the correct movement is hailed with shouts and laughter by the assembled company. This also will sadden the young girl concerned.

In the native home-life there is nothing of the nature of discipline. The children do exactly as they choose and are only punished when they have been exceptionally aggravating. This also will make a child sad.

THE IBO CHILD EXPOSURE TO ANGER

The Ibo child right from a very early age is independent. He or she will like to associate freely

with his or her peer group. For the boys, he will love to participate in the premature hunting of lizards, wrestling, and practising some dancing steps. To deprive the child any of these liberty will definitely anger him. The worst part of it will be the inability of the parents, maybe due to financial constraints to provide the child with the basic necessity which other children in the neighbourhood has. For example, not providing the child, the necessary dancing costume needed to actually participate in the dancing practice with peers.

Moreover, an Ibo child will be extremely angry and will definitely fight back in any way when his parent is abused by another person. He will either abuse back or fight the opponent. When a child is cheated deliberately by either a peer or an adult during special game with his peers, for example the popular (okwe) game, he will definitely show his anger and it might end in fighting.

An Ibo child definitely knows when he is insulted either through words or deeds and this will actually make him very angry and the end result might not be pleasant at all.

THE IBO CHILD EXPOSURE TO FEAR

Actually the Ibos, prior to the British occupation of the country, occupied their spare times with fighting, generally town against town. This leads to perpetual state of fear which existed then. It was never safe to venture far beyond the confines of the town, nor defend themselves. This kind of an atmosphere, actually creates that emotion of fear in the mind of the young Ibo child. It was a rare thing for towns to remain at peace for very long, and when quietness did happen to prevail for a time, the spell was broken on the slightest pretext and hostilities began forthwith.

Moreover, any frightful incident will definitely make an Ibo child to be afraid. For the boys, when they are chased by wild animals in the jungle while hunting will definitely elicit fear in them. Again, when children are beaten unjustly and mercilessly too, they will definitely always be afraid of that particular person.

Fear naturally is experienced by a young Ibo child once he or she is faced with any frightful circumstance.

THE IBO CHILD EXPOSURE TO LOVE

Parents manifest deep fondness for their children. Children are priceless possession, and no

man can have too many; the more he has the more will he be respected and envied by the community. Hence, the infant is suckled for a considerable period after he has begun to run about. This initial bond of love that manifested after this long weaning between the mother and the child, remains throughout their life time. For example the son never forgets his mother. Invariably she is the first in his affections, and she is his confidant in all the serious affairs of his life. In times of danger the mother is thought of before even wife and children. Wives are always to be had he cannot get a second mother.

In the native-life, because of this apparent love for the child, there is nothing like discipline. By discipline here, I mean the type manifested by school administrators towards the end of last century and at the beginning of this century. It actually became a very new experience for the children to come under school discipline.

Moreover, the child in an Ibo environment is not just the child of a particular man and woman, but the child of the community as a whole. He is accepted freely anywhere and actually win their love and acceptance if he is a good citizen. Because of this fundamental love that has cultivated itself in this kind of society, everybody is actually his

brothers keeper.

This inherent love I think is the cause of the Ibo hospitability. To them hospitability is a major social obligation. Inability to meet it is a humiliating experience for the Ibo. The inhospitable person is called many names (none complimentary) -- "Onye ndi", "onye akpi", "onye aka chichi" -- the tight - fasted one. It is the Igbo's genuine desire to please his guests, even if doing so costs him the house hold meal or involves some form of indebtedness. There is this popular saying "when my guest departs peacefully and satisfied, let my creditors come."

THE IBO CHILD EXPOSURE TO HAPPINESS

An Ibo child is exposed to happiness the moment he is born because he is a very invaluable gift. He grows up in an environment of love and acceptance. Infact the Ibo child is not excluded in any activity of the community. They are literally everywhere. They are taken to the market, to the family or village tribunal, to funerals, to a feast, to the farm, and to religious ceremonies. If there is a social or ritual ceremony going on in an Igbo village, everybody is welcome. This intergration makes the child happy.

Ibo children participate in the affairs of the adult world with child like enthusiasm, in their own world they dramatize adult roles and spend their leisure hours doing "nursery" cooking, playing father and mother, holding "play market and mock fights. These are actually happy times for the child.

The most happy period in an Ibo child's life is when he participates in any festival. The most enjoying of them is the "New Year" festival. It is usually accompanied by dancing and abundant delicacies. They (children) actually has plenty to eat. In fact everybody looks forward to its celebration.

When an Ibo child is brought up in this kind of happy environment, he automatically becomes a well adjusted individual anywhere he goes and remains very independent. This manifests itself in their adulthood and it is a well known fact that the Ibos are very industrious people.

2.5 RECOGNITION AND IMITATION OF FACIAL EXPRESSIONS AMONG CULTURES.

Much of the current effort directed toward an understanding of emotional expression has been devoted to the issue of universality (Ekman 1971,

1973, 1977, Izard 1971, 1980). According to Ekman's theory (1977), the relationship between an emotion and movement of particular facial musculature (the "facial effect programme") is universal. Even so, Ekman gives a great weight to the role of cultural factors in modifying facial expression. He noted that "learned habits about controlling the appearance of the face (display rules) can and often do intervene between triggering of the facial muscles by the facial effect programme and a visible change in the facial appearance" (Ekman, 1971, 216). There are two components of the study of display rules. One concerns the development of the knowledge about which facial expression is appropriate in which circumstance. The second concerns the ability to produce the appropriate facial behaviours voluntarily (Kilbride and Yarczower, 1980). They asserted that in order to comprehend more fully the influence of cultural factors on facial expressions, it is necessary not only to study the development of display rules but also to study the development of voluntary ability to control or produce facial expressions both within and across culture. They argued logically in their fascinating article that facial expressions are an important means by which individuals communicate with one another, and that cultural factors and learning expe-

rience influence this type of communication. The co-authors pointed out that each cultural group require of its members the learning of acceptable display rules for interacting within that social group; and thus the individual during the course of socialization, learns which facial expressions are expected, preferred or allowed in which circumstances and learns to perform accordingly. Although research suggests that adults in all societies including the Ibo society voluntarily produce a variety of facial expression, little is available concerning the presence of this ability in very young children and its developmental aspects.

In a study specifically designed to compare the voluntary production of facial expressions with the ability to discriminate them, Adom and Lemond (1972) found that discrimination accuracy increased with age. Hamilton (1973) in a developmental study of preschoolers, second and the fifth graders, also found improvement with age in the recognition of facial expressions and, to a lesser degree, in the voluntary production of facial expressions.

Yarczower, et al (1979) have suggested one possible explanation for the reported difference in rates of development of authors of the fascinating article express that their study was undertaken in order to extend our knowledge concer-

ning developmental aspects of the ability to voluntarily produce facial expression.

2.6 ABOUT THIS STUDY

This study aims to examine (a) if there are universal facial expressions of the five emotions of sadness, anger, fear, happiness and love among the Ibos. From the foregoing pages, it is abundantly clear that there is such a thing as "universality" in the facial expressions of emotions, though some studies have failed to confirm the theory of Tomkins. They believe that our non-verbal behaviour, such as facial expressions are learned during the process of socialization. At the same time, it can be further argued that most of the emotions excluding the very basic and formative ones of sadness and happiness, evolved much later in the evolution of homosapiens. Mukherjee (1982) providing production efforts of older children, more so than younger children, decreased in accuracy when an experimenter was present thus manifesting the Rosenthal Effect. On the other hand, they asserted examining the productions made by children when no experimenter was present yielded a developmental rate that was comparable to that found for discrimination accuracy. Thus the presence of an experi-

menter in the previous studies may have served to exaggerate the degree of difference in the rates of development of children's discrimination and production of facial expressions (Yarczower et al 1979).

Imitation may be one means by which the development of voluntary control of facial expressions is facilitated (Tomkins 1962) while the work of Ribbeafieldt (1973) has shown that rudimentary forms of facial expressions are present even in blind and/or deaf infants, and Meltzoff and Moore (1977) have demonstrated that infants, two to three weeks of age, imitate facial gesture, it cannot be assumed that the infant has the ability to use these expressive behaviours systematically in order to communicate with others. (Kegan et. al. 1978, Mayo and La France, 1978) Kilbride and Yarczower (1979) pointed out that the assumption of the present research is that imitation is an important process by which individuals obtain knowledge concerning the regulation of facial expressions in accordance with culturally sanctioned display rules. The above hunch to be true, this study aims to examine if Tomkins theory is valid for all the emotions to be interpreted in this study.

The next chapter deals with the aims and hypothesis of this study.

CHAPTER THREE

AIMS AND HYPOTHESIS

From the foregoing review of the relevant background literature, the aims of the study are stated as follows:

- (a) to examine if there is an underlying universality in the facial expressions of both males and females of the Ibo cultural group of Nigeria in respect of the emotions of sadness, anger, fear, happiness, and love; and
- (b) to postulate a theory after examining the result of this study on the possible differences in the facial emotional expressions of anger, fear, and love which may have evolved much later in the history of the homosapiens.

From the above aims the following null hypotheses are stated:

Hypothesis 1 (H₀₁) - There is no difference among the Ibo cultural group of Nigeria in recognizing the facial emotional expressions of SADNESS, ANGER, FEAR, HAPPINESS and LOVE of both males and females of the Ibo people.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 THE SAMPLE

The sample of the study was collected from the adult population of Ibo group, both men and women, to represent the respondents. Adult population was chosen because it was assumed that adulthood would bring maturity of understanding of the different emotional expression of the face of the people. Beyond this solitary assumption about the adult respondents there was no other assumption in the field and hence conclusions could be drawn accordingly.

The sample finally consisted of 60 males and 40 female adults. They were collected at random one after the other and were made to respond to the questions of the research detailed here under. The sample thus consisted of 60 adult male and 40 adult female Ibos. Where it was needed they were interpreted and explained about the questions in their mother tongue Ibo language before responses were collected from them.

4.2 THE EMOTIONS AND FACIAL EXPRESSIONS

In this research it was decided to study the effects of recognition of multiple emotions as recorded in their facial passport size photographs

taken professionally by the respondents (160) in this research. It was decided that photographs from four different areas of film industry popular in Nigeria would be used. And these four industries were the Western films, the Indian films, the Chinese films and the Nigerian shows. Efforts were made to collect the facial photographs of the film actors and actresses of these four different areas from different film magazines available locally. Apart from the photograph of a Chinese male actor depicting happiness (photograph No.11), and the Nigerian actors and actresses all photographs were so obtained. For the Chinese male photographs approaches were made to a Chinese scholar (photograph No.11) to help the researcher with a photo of happiness which he did. And as for the Nigerian actors and actresses one Nigerian male actor and another Nigerian female actress eventually conceded to the researcher's request to pose for the different emotions to be photographed. In this way the bunch of 40 photographs, 20 males and 20 females were obtained. The researcher then obtained a random design of presentation of these photographs to the respondents, and the list of the random presentation of these photographs is shown in Appendix II of this dissertation. This was so done to prevent the effects of cue taking in the

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CHAPTER FIVE

DATA ANALYSIS AND RESULTS OF THIS RESEARCH

The collected data matrix was subjected to computer analysis of the results of the responses obtained by them. The method of analysis determined by the investigator had to be a parametric test of significant difference of the means of the responses of the female photograph from that of the corresponding male. If emotions were universals then it would have been inferred that the photograph responses would not be significantly different from each other and would be similar so to say. The significant results of T-test analysis are reproduced in the following tables:

Table 5.1

t-test: Emotion - sadness
 (S₁ = n₁+s₁ = 60 + 40 = 100)

| EMOTION | NO OF CASES | MEAN | SD | SE | t-VALUE | DF | 2 TAIL PROB. |
|---------|-------------|--------|-------|------|---------|----|--------------|
| SAD | 100 | 2.1089 | 1.095 | .109 | 2.58 | 98 | .009 |
| SADDF | | 1.7525 | 1.235 | .123 | | | |

Table 5.2

t-test: Emotion - happiness
 (S₁ = n₁+s₁ = 60+40 = 100)

| EMOTION | NO OF CASES | MEAN | SD | SE | t-VALUE | DF | 2 TAIL PROB. |
|---------|-------------|--------|-------|------|---------|----|--------------|
| HAPP | 100 | 2.1583 | 1.101 | .103 | 4.07 | 98 | .001 |
| SADDF | | 2.6733 | 1.070 | .107 | | | |

Table 5.3

t-test: Emotion - Anger
 (Ss = $n_1 + n_2 = 60 + 40 = 100$)

| EMOTION | NO OF CASES | MEAN | SD | SE | t-VALUE | DF | 2 TAIL PROB. |
|---------|-------------|--------|-------|------|---------|----|--------------|
| ANGER | 100 | 1.4554 | 1.873 | .107 | 3.72 | 98 | .0001 |
| ANGER F | | .9307 | .930 | .093 | | | |

Table 5.4

t-test: Emotion - Fear
 (Ss = $n_1 + n_2 = 60 + 40 = 100$)

| EMOTION | NO OF CASES | MEAN | SD | SE | t-VALUE | DF | 2 TAIL PROB. |
|---------|-------------|--------|-------|------|---------|----|--------------|
| FEAR | 100 | 1.7524 | 1.077 | .103 | 3.61 | 98 | .0001 |
| FEAR F | | 2.2376 | 1.011 | .101 | | | |

Table 5.5

t-test: Emotion = Love

(SS = $n_1 + n_2 = 60 + 40 = 100$)

| EMOTION | NO OF CASES | MEAN | SD | SE | t-VALUE | DF | 2 TAIL PROB. |
|---------|----------------|--------|-------|------|---------|----|-----------------|
| LOVE | 100 | 1.2361 | 1.095 | .109 | 4.05 | 98 | .0001 |
| LOVE F | | 1.2109 | .873 | .087 | | | |

In the above tables degree of freedom has been calculated at 98 as it will have been of two tail test of probability and from this two tail test of probability and the significant results it can now be predicted that for emotions like sadness,

significantly different. This would mean that the respondents as a group did not recognise that same emotion as a response for the male or the female photographs of the emotion display.

The significant results thus go a long way to predict the lack of universality of emotions upon people and comments are made on this in the following chapter.

CHAPTER SIX

6.1 CRITIQUE

This is empirical study which examines Tomkins' (1962, 1963) theory of emotion where it has been suggested that the facial expression of emotions are determined by biology rather than by social learning. Sixty Ibo males and forty Ibo females were asked to identify the facial emotions expressed on photographs of male and female professional actors and actresses of four different film industries most popular in Nigeria. However, in the previous chapter we have seen that Tomkins' theory is found not to be valid even for the emotion of sadness. The results were therefore in agreement with the investor's hunch about lack of universality of emotions.

The number of the subjects studied is sufficiently large enough to warrant the use of parametric statistical test. What is more, the data is on interval scale and could justify a normal distribution of the studied. In addition, the photographs used for the study except for the Chinese male happiness and Nigerian actor and actresses who were capable of evoking the various primary emotions in their corresponding facial expressions. The Nigerian actor and actress were also professionals in training and the instruction

from sex, anger is different from hostility and fear is different from anxiety or worries, or apprehension. These differences in the types of experiences are easily available to a more intelligent person since an experience is first and foremost a particular type of cognition which after decoding at the cortex generates a particular motor meaning of behaviour which through feedback is associated with its antecedent emotion. If a particular type of experience is not available in a society or culture, then its corresponding antecedent emotion will also remain unknown to them forever.

If biological factors determine the control of the facial muscles in the facial expressions of the five emotions studied, then there would be no differences in the recognition task by the subjects of the particular culture studied. The investigator has offered arguments in the previous chapters indicating the grounds which led him to believe that certain emotions evolved perhaps hundreds of thousands of years after evolution of Pekingman or Leakey's finding of the first homosapiens in Kenya which evolved two and half million years in the past.

This study has shown by its findings that Tomkins' (1962, 1963) theory of emotions, suggesting that emotions are determined by biological means in the control of the facial expressions of the emotions is not valid. The species constant theory of Tomkins' does not hold good, and these are some of the issues which have been highlighted in the study.

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EMOTIONS: FACIAL EXPRESSIONS OF RECOGNITION

RESPONSES. / N= 100; n(male)=60; n(female)=40

| S/No. | Sex | Age | Travel Aboard | Watch films | Male Photographs | | | | | Female Photos. | | | | | Total | | | | | |
|-------|-----|-----|------------------|----------------|------------------|------|------|------|------|----------------|------|------|------|------|-------|------|------|------|------|----|
| | | | | | HAP. | SAD. | LOVE | ANG. | FEAR | HAP. | SAD. | LOVE | ANG. | FEAR | HAP. | SAD. | LOVE | ANG. | FEAR | |
| 1 | M | 31 | No | Yes | 3 | 2 | 2 | 2 | 1 | 4 | 1 | 3 | 0 | 4 | 7 | 3 | 5 | 2 | 5 | 22 |
| 2 | M | 30 | No | " | 4 | 3 | 0 | 2 | 1 | 4 | 2 | 1 | 2 | 3 | 5 | 1 | 2 | 4 | 22 | |
| 3 | M | 25 | No | " | 2 | 1 | 0 | 3 | 1 | 2 | 0 | 2 | 3 | 4 | 1 | 2 | 4 | 3 | 14 | |
| 4 | M | 32 | No | " | 1 | 2 | 1 | 0 | 3 | 1 | 0 | 0 | 3 | 2 | 2 | 3 | 0 | 6 | 13 | |
| 5 | M | 29 | No | " | 3 | 1 | 2 | 0 | 0 | 2 | 0 | 2 | 3 | 5 | 1 | 4 | 0 | 3 | 13 | |
| 6 | M | 28 | No | " | 4 | 3 | 1 | 1 | 2 | 1 | 0 | 2 | 1 | 5 | 3 | 4 | 3 | 3 | 18 | |
| 7 | M | 28 | No | " | 4 | 4 | 2 | 1 | 2 | 4 | 2 | 1 | 3 | 8 | 6 | 4 | 2 | 5 | 25 | |
| 8 | M | 25 | No | " | 3 | 2 | 0 | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 3 | 2 | 2 | 1 | 13 | |
| 9 | M | 28 | No | " | 4 | 3 | 1 | 3 | 2 | 2 | 1 | 1 | 2 | 6 | 4 | 3 | 4 | 4 | 21 | |
| 10 | M | 21 | No | " | 0 | 1 | 0 | 0 | 2 | 2 | 1 | 2 | 0 | 2 | 2 | 1 | 2 | 2 | 9 | |
| 11 | M | 21 | No | " | 3 | 1 | 2 | 3 | 1 | 3 | 2 | 2 | 0 | 6 | 3 | 4 | 3 | 3 | 19 | |
| 12 | M | 23 | No | " | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 3 | 3 | 9 | |
| 13 | M | 18 | No | " | 4 | 2 | 1 | 1 | 1 | 4 | 0 | 3 | 2 | 8 | 2 | 4 | 3 | 5 | 22 | |
| 14 | M | 20 | No | " | 1 | 1 | 0 | 2 | 1 | 0 | 2 | 0 | 1 | 1 | 3 | 3 | 2 | 2 | 11 | |
| 15 | M | 28 | No | " | 2 | 1 | 0 | 2 | 2 | 2 | 1 | 1 | 4 | 5 | 1 | 5 | 2 | 6 | 17 | |
| 16 | M | 18 | No | " | 3 | 0 | 2 | 2 | 2 | 2 | 2 | 1 | 4 | 5 | 3 | 3 | 5 | 2 | 17 | |
| 17 | M | 22 | No | " | 4 | 4 | 0 | 1 | 3 | 3 | 2 | 1 | 7 | 6 | 4 | 2 | 6 | 6 | 25 | |
| 18 | M | 23 | No | " | 4 | 1 | 0 | 3 | 0 | 3 | 2 | 2 | 7 | 3 | 2 | 4 | 2 | 2 | 18 | |
| 19 | M | 19 | No | " | 3 | 2 | 1 | 0 | 2 | 3 | 1 | 0 | 6 | 3 | 2 | 0 | 4 | 4 | 15 | |
| 20 | M | 23 | No | " | 3 | 3 | 2 | 1 | 1 | 3 | 2 | 2 | 6 | 5 | 5 | 1 | 3 | 3 | 20 | |
| 21 | M | 20 | No | No | 3 | 1 | 2 | 3 | 1 | 4 | 2 | 2 | 7 | 3 | 4 | 4 | 3 | 3 | 21 | |
| 22 | M | 22 | Yes | Yes | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 4 | 6 | 6 | 3 | 5 | 5 | 5 | 25 | |
| 23 | M | 28 | No | " | 3 | 0 | 0 | 1 | 2 | 1 | 1 | 2 | 4 | 4 | 0 | 2 | 4 | 1 | 11 | |
| 24 | M | 26 | No | " | 3 | 3 | 2 | 3 | 2 | 3 | 4 | 1 | 6 | 7 | 4 | 4 | 5 | 2 | 26 | |
| 25 | M | 18 | No | No | 4 | 0 | 3 | 2 | 1 | 3 | 1 | 1 | 7 | 1 | 4 | 3 | 3 | 1 | 18 | |
| 26 | M | 30 | No | Yes | 3 | 3 | 2 | 3 | 1 | 3 | 0 | 1 | 6 | 3 | 3 | 3 | 4 | 4 | 19 | |
| 27 | M | 60 | No | " | 4 | 2 | 1 | 3 | 3 | 1 | 1 | 0 | 5 | 3 | 1 | 3 | 4 | 4 | 16 | |
| 28 | M | 19 | Yes | " | 4 | 2 | 1 | 1 | 1 | 4 | 4 | 3 | 8 | 6 | 4 | 2 | 3 | 3 | 23 | |
| 29 | M | 18 | No | " | 4 | 3 | 1 | 1 | 1 | 4 | 2 | 1 | 8 | 5 | 4 | 2 | 4 | 4 | 23 | |
| 30 | M | 23 | No | " | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 4 | 4 | 3 | 2 | 4 | 4 | 17 | |
| 31 | M | 39 | Yes | " | 3 | 1 | 2 | 1 | 1 | 4 | 2 | 0 | 7 | 3 | 3 | 1 | 7 | 7 | 21 | |
| 32 | M | 25 | No | " | 3 | 3 | 2 | 1 | 3 | 4 | 2 | 1 | 6 | 7 | 3 | 4 | 7 | 7 | 27 | |
| 33 | M | 30 | No | " | 3 | 2 | 3 | 1 | 3 | 3 | 4 | 2 | 7 | 6 | 5 | 4 | 5 | 5 | 26 | |
| 34 | M | 27 | Yes | " | 4 | 4 | 1 | 1 | 2 | 3 | 3 | 2 | 7 | 7 | 5 | 1 | 4 | 4 | 24 | |
| 35 | M | 38 | No | Yes | 3 | 3 | 1 | 1 | 4 | 2 | 1 | 0 | 5 | 4 | 5 | 1 | 6 | 1 | 21 | |
| 36 | M | 33 | Yes | Yes | 3 | 1 | 1 | 0 | 3 | 4 | 2 | 3 | 7 | 3 | 4 | 1 | 5 | 4 | 20 | |
| 37 | M | 35 | Yes | Yes | 3 | 3 | 2 | 1 | 2 | 0 | 0 | 3 | 5 | 3 | 4 | 1 | 4 | 4 | 17 | |
| 38 | M | 32 | Yes | Yes | 4 | 1 | 0 | 0 | 2 | 3 | 0 | 1 | 7 | 1 | 1 | 1 | 5 | 4 | 17 | |
| 39 | M | 40 | No | " | 4 | 2 | 2 | 1 | 2 | 4 | 1 | 0 | 8 | 3 | 4 | 1 | 4 | 4 | 20 | |
| 40 | M | 39 | No | " | 4 | 1 | 2 | 2 | 3 | 2 | 1 | 1 | 6 | 2 | 4 | 3 | 7 | 3 | 22 | |
| 41 | M | 41 | No | " | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 3 | 12 | |
| 42 | M | 41 | Yes | " | 2 | 3 | 3 | 3 | 3 | 4 | 1 | 2 | 6 | 4 | 5 | 3 | 6 | 6 | 24 | |
| 43 | M | 30 | Yes | " | 3 | 2 | 2 | 3 | 3 | 4 | 3 | 2 | 7 | 5 | 4 | 5 | 6 | 4 | 27 | |

EMOTIONS: FACIAL EXPRESSIONS OF RECOGNITION
 RESPONSES. /N = 100; n(male)=60; n(female)=40/.

| Ser. No. | Sex | Age | Travel Abroad | Watch Films | Male Photographs | | | | Female Photographs | | | | TOTAL | | | | | | | |
|----------|-----|-----|---------------|-------------|------------------|---------|------|-------|--------------------|------|---------|------|-------|------|------|---------|------|-------|------|----|
| | | | | | Hap. | Sadness | Love | Anger | Fear | Hap. | Sadness | Love | Anger | Fear | Hap. | Sadness | Love | Anger | Fear | |
| 1 | F | 25 | Yes | Yes | 4 | 2 | 2 | 2 | 1 | 3 | 3 | 3 | 1 | 3 | 7 | 5 | 5 | 3 | 4 | 24 |
| 2 | F | 24 | No | Yes | 4 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 5 | 4 | 3 | 3 | 3 | 18 |
| 3 | F | 28 | No | " | 3 | 4 | 3 | 1 | 3 | 2 | 4 | 1 | 2 | 5 | 8 | 4 | 3 | 7 | 27 | |
| 4 | F | 25 | No | " | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 14 | |
| 5 | F | 27 | No | " | 4 | 3 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 1 | 2 | 2 | 2 | 2 | 14 | |
| 6 | F | 22 | No | " | 4 | 1 | 4 | 0 | 1 | 2 | 2 | 1 | 1 | 3 | 3 | 1 | 1 | 4 | 23 | |
| 7 | F | 32 | No | No | 4 | 2 | 1 | 4 | 0 | 3 | 3 | 1 | 3 | 7 | 5 | 2 | 4 | 1 | 19 | |
| 8 | F | 30 | No | Yes | 4 | 2 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 3 | 3 | 2 | 0 | 0 | 15 | |
| 9 | F | 20 | No | " | 4 | 2 | 2 | 2 | 2 | 3 | 4 | 2 | 1 | 7 | 6 | 4 | 3 | 3 | 23 | |
| 10 | F | 22 | No | " | 3 | 3 | 1 | 1 | 0 | 2 | 0 | 2 | 1 | 5 | 3 | 3 | 2 | 1 | 14 | |
| 11 | F | 31 | No | " | 3 | 4 | 0 | 0 | 3 | 2 | 2 | 1 | 1 | 5 | 7 | 1 | 3 | 6 | 22 | |
| 12 | F | 27 | Yes | " | 4 | 4 | 0 | 1 | 3 | 4 | 2 | 1 | 0 | 8 | 6 | 1 | 1 | 6 | 22 | |
| 13 | F | 24 | No | " | 4 | 2 | 3 | 1 | 1 | 1 | 0 | 1 | 1 | 5 | 2 | 4 | 2 | 5 | 18 | |
| 14 | F | 24 | Yes | " | 4 | 3 | 2 | 2 | 2 | 3 | 4 | 1 | 3 | 6 | 7 | 3 | 5 | 5 | 26 | |
| 15 | F | 54 | No | " | 2 | 2 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 5 | 4 | 4 | 2 | 2 | 17 | |
| 16 | F | 23 | No | " | 3 | 1 | 2 | 2 | 2 | 0 | 3 | 0 | 2 | 5 | 2 | 1 | 4 | 1 | 11 | |
| 17 | F | 27 | No | " | 3 | 2 | 3 | 0 | 4 | 3 | 4 | 3 | 3 | 6 | 6 | 0 | 4 | 7 | 25 | |
| 18 | F | 21 | No | " | 1 | 3 | 3 | 0 | 3 | 4 | 3 | 3 | 0 | 5 | 6 | 6 | 0 | 5 | 22 | |
| 19 | F | 20 | No | " | 1 | 1 | 1 | 2 | 3 | 0 | 1 | 2 | 5 | 1 | 2 | 4 | 4 | 4 | 16 | |
| 20 | F | 30 | Yes | " | 4 | 3 | 2 | 0 | 3 | 4 | 1 | 0 | 3 | 8 | 4 | 5 | 0 | 6 | 24 | |
| 21 | F | 21 | No | " | 3 | 4 | 2 | 3 | 2 | 3 | 4 | 1 | 3 | 6 | 8 | 5 | 4 | 5 | 28 | |
| 22 | F | 20 | Yes | " | 4 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 4 | 6 | 4 | 5 | 2 | 6 | 23 | |
| 23 | F | 27 | " | " | 4 | 2 | 0 | 1 | 1 | 4 | 1 | 0 | 2 | 8 | 3 | 2 | 1 | 4 | 18 | |
| 24 | F | 25 | No | No | 4 | 3 | 2 | 1 | 1 | 3 | 2 | 1 | 2 | 7 | 5 | 3 | 3 | 4 | 22 | |
| 25 | F | 34 | No | Yes | 4 | 3 | 0 | 0 | 1 | 3 | 3 | 1 | 1 | 4 | 6 | 1 | 2 | 1 | 14 | |
| 26 | F | 22 | No | " | 4 | 2 | 2 | 1 | 0 | 4 | 3 | 1 | 1 | 5 | 5 | 3 | 2 | 1 | 19 | |
| 27 | F | 20 | No | " | 4 | 1 | 0 | 2 | 0 | 3 | 1 | 3 | 1 | 6 | 2 | 3 | 3 | 3 | 17 | |
| 28 | F | 31 | No | " | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 0 | 3 | 4 | 6 | 5 | 2 | 6 | 23 | |
| 29 | F | 28 | No | " | 2 | 2 | 4 | 2 | 3 | 2 | 3 | 0 | 2 | 4 | 4 | 2 | 2 | 5 | 22 | |
| 30 | F | 30 | No | No | 4 | 3 | 2 | 0 | 3 | 2 | 1 | 0 | 6 | 4 | 4 | 3 | 2 | 3 | 18 | |
| 31 | F | 31 | No | Yes | 4 | 1 | 0 | 0 | 2 | 2 | 1 | 3 | 6 | 4 | 2 | 3 | 1 | 5 | 17 | |
| 32 | F | 34 | Yes | " | 3 | 1 | 1 | 1 | 3 | 4 | 3 | 2 | 1 | 7 | 4 | 3 | 2 | 5 | 21 | |
| 33 | F | 30 | " | " | 4 | 1 | 0 | 2 | 2 | 3 | 1 | 1 | 2 | 7 | 2 | 2 | 3 | 4 | 18 | |
| 34 | F | 29 | " | " | 1 | 3 | 0 | 0 | 0 | 2 | 2 | 0 | 3 | 3 | 5 | 0 | 3 | 3 | 13 | |
| 35 | F | 22 | No | " | 2 | 3 | 2 | 3 | 4 | 3 | 1 | 1 | 6 | 4 | 2 | 2 | 4 | 2 | 22 | |
| 36 | F | 32 | No | " | 4 | 3 | 2 | 2 | 2 | 2 | 1 | 1 | 6 | 4 | 2 | 3 | 4 | 4 | 20 | |
| 37 | F | 30 | No | " | 4 | 1 | 2 | 1 | 1 | 3 | 1 | 1 | 2 | 7 | 5 | 2 | 3 | 3 | 19 | |
| 38 | F | 25 | No | " | 4 | 2 | 0 | 0 | 2 | 3 | 3 | 0 | 2 | 7 | 5 | 2 | 0 | 4 | 18 | |
| 39 | F | 18 | No | " | 4 | 2 | 1 | 2 | 1 | 4 | 2 | 2 | 1 | 8 | 4 | 3 | 4 | 2 | 21 | |
| 40 | F | 30 | Yes | " | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 5 | 4 | 4 | 4 | 6 | 24 | |

| Serial No. | | Explanatory | Code |
|------------|-----------|-------------|--------|
| 24. | Happiness | African | Male |
| 25. | Love | Chinese | " |
| 26. | Love | African | " |
| 27. | Anger | Indian | Female |
| 28. | Happiness | African | Female |
| 29. | Fear | Chinese | Female |
| 30. | Fear | Western | " |
| 31. | Sadness | Chinese | Male |
| 32. | Happiness | Western | Female |
| 33. | Love | Indian | " |
| 34. | Anger | Western | " |
| 35. | Anger | African | Male |
| 36. | Sadness | African | Female |
| 37. | Happiness | Chinese | " |
| 38. | Fear | African | Male |
| 39. | Sadness | Indian | Female |
| 40. | Fear | African | Female |