MEDWIN PUBLISHERS
Committed to create value for Researchers

Psychology & Psychological Research International Journal

Asymmetry in the Judgment of Facial Attributes in Neutral Left and Right Hemifaces

Asthana HS[1*], Ranjan JK[1] and SujeetPratap[2]

[1]Department of Psychology, Banaras Hindu University, India

[2]School of Humanities and Social Sciences, Thapar University Patiala, India

Research Article

Volume 2 Issue 1

Received Date: December 15, 2016

Published Date: January 24, 2017

***Corresponding author:** Hari S Asthana, Department of Psychology, Banaras Hindu University, Varanasi-221005, India, E-mail: drhsasthana@gmail.com

Abstract

This study examined the phenomenon of facial asymmetry in the judgment of facial attributes during neutral expression. Eighty right handed male undergraduate students were asked to rate the intensity of emotion, healthiness, activeness and attractiveness of each presented photographs on seven point raring scales. The left side facial composites were judged as significantly more emotional and active than the right side facial composites, and the right side composites were judged as significantly healthier than the left side facial composites.

Keywords: Facial attributes; Hemifaces; Emotional expression; Facial asymmetry

Introduction

A human face provides useful information on the emotion and inner state of the individual [1] reported that "the face is rich in communicative potential. It is the primary site for communicating emotional attitudes, and it reflects interpersonal attitudes. It is the primary source of giving information". The face is exposed to the full view of others for the facility of social interaction. It provides cues to form impressions of others and provide information about gender, ethnicity, age health, mood, and to some extent the personality of the individual. It facilitates communication between the observers and observed.

The appearance of an individual's face is very important in the attributing emotional state and personality of the individual, and thereby it affects interpersonal interaction and communication [2]. In general, we are less about ordinarily, people are less aware about that two hemifaces are differentially involved during expression of emotion and resting state. This facial asymmetry is referred as faced ness. It has been defined regarding the relative intensity of expression and the extent of movement of the left and right sides of the face [3-5] conducted a first systematic study of the facial asymmetry Cited in Asthana et al. [4,6] conducted a study on facial asymmetry and reported that right face provides social or public expressions whereas the left hemifaces offers hidden from an emotional quality point of view and reported that right side of human face offers social or public expressions whereas the left side of a face reveals hidden and personalized feelings. The experimental literature on facial asymmetry suggests that emotions are expressed more intensely on the left than the right side of the face [7-9]. The greater left hemisphere involvement has been interpreted as dominant role of the right hemisphere in emotional expression [10].

Many researchers have reported the asymmetrical nature of the resting face also. The resting left-hemifaces

is judged either more happy [11] or miserable Cited in [12,4]. Mandal, et al. [13] have also reported asymmetrical nature of resting face. The left sided facial composites were judged more emotional than the right sided composites.

In addition to the facial asymmetry studies on expression of emotion as well as in the resting state, several researchers have attempted to examine the phenomenon of asymmetry in the attribution of personality traits and emotional characteristics during resting face. Karch & Grant [14] attempted to investigate perceived systematic differences in the sides of the face. The left-left facial composites were rated as healthier, stronger, more active and more excitable, whereas right-right facial composites were rated more sick, weaker, more feminine, softer, passive, and calmer. Symmetrical facial features may provide a sign of health [15]. Burt & Perrett [16] reported that the judgment of attractiveness is more influenced by left hemifaces than the right hemifaces, than the right. Sitton, et al. [17] chimeric images of two left sided of faces received higher ratings for attractiveness, agreeableness and health. On the other hand, Reis & Zaidel [18] found that right-right composites of women faces were judged significantly healthier than left-left facial composites. Whereas, no significant left-right differences emerged for men faces. Broad, et al. [19] found that tanned people were judged healthier than pale. Kowner [20] found symmetrical faces with neutral expressions to be rated as more attractive only for portraits of old people. Kowner [21] fond no consistent differences in the attribution of situational disposition, emotion, and personality traits to the neutral left and right hemifaces.

It is evident from the above review that there is a controversy in the existing literature whether the facial asymmetry influences the judgment of personality traits and situational disposition of a face or not? Therefore, the prime objective of the present study was to re-examine the issue of the judgment of facial attributes on let-left and right- right facial composites depicting neutral expression.

Methods

Participants

Eighty right-handed male undergraduate and postgraduate students (Mean age: 22.5, SD ±2.3years) participated in the study. Subjects with an impaired sighting performance, a history of organic brain disorder, or a history of psychiatric illness were not included in the study. Handedness of the participants was assessed by using Hand Preference Schedule [22]. All participants were right–handed. Their hand preference quotient was above +0.25.

Photographs

A total of 8 full face photographs (5 males and 3 females) depicting neutral expression selected from a series of photographs developed by Mandal [23]. The photographs are accessible from microfiche publications, Documents NAPS D4267, POB, 3513, Grand Central Station, New York. The photographs were all standardized, clearly recognizable (over 70%), unblended with other emotions. The standardization process of the photographs has been described in [23]. The faces depicted in the photographs were all unfamiliar to the subjects. The photographs were black and white glossy prints measuring 19 X 17 cm, and each was a full face photograph of an adult Indian subject.

In order to prepare the right-right (RR) and left-left facial composites, each selected photograph was printed twice. One in the normal orientation (RL) and the other in mirror image (LR) print.. The original and mirror-reversed prints of each photograph were cut vertically through the midline of the face. The midline was determined by using the midpoint of the line between the internal acanthi of the eyes and the central vertex of the upper lip. A left facial composite (LL) was prepared by joining the left hemifaces of normal orientation (RL) and its mirror image (LR), with an analogous procedure for preparing the right facial composite (RR) [24]. It is suggested that "Judgments of a facial asymmetry in expression are influenced by biases of perceiver rather than by asymmetry in actual expressions" [25]. In the present study, complete photographs were used to overcome observer bias.

Procedure

Subjects were instructed that, one by one a set of photographs will be presented to you. You have to look at the presented photograph and to rate the intensity of the following adjectives such as healthy, emotional, activeness, and attractiveness for each presented photograph on 7 point rating scale with 1 being " not at all" and 7 representing the "extreme". The experimentally manipulated photographs were presented one by one to the subject, and their responses were taken.

Results

The intensity rating for the judgment of following adjectives such as healthy, emotional, activeness, and attractiveness in LL and RR facial composites were the dependent measure. The mean intensity rating was

calculated separately for LL and RR composite on each adjective (Table 1). Data were analyzed with 4 (Facial attributes: Healthy, emotional, activeness, attractiveness) X 2 (Gender: Male, Female Expressions) X 2 (Facial orientation: LL, RR) split-factorial ANOVA with repeated measures in all three factors. The main effect of facial attributes was significant, $F(3,234) = 83.92$, $p<0.0001$ was found. A significant main effect for facial orientation, $F(1,78) = 34.41$, $p<.0001$. The gender of the expresser was found non-significant, $F(1,78) = 0.140$, $p<0.709$. The interaction of facial attributes and facial orientation was also significant, $F(3,234) = 67.09$, $p<0.0001$ and other interaction effects were non-significant. Since the interaction of facial attributes and facial orientation was significant, the main effects of facial attributes and facial orientations were not described. The said significant interaction effect reveals that left side facial composites were judged as significantly more emotional and active while the right side composites were judged as significantly healthier than their counterparts were.

Facial Attributes	Facial Orientation	
	Left-left	Right-right
Healthy	3.77 (1.51)	5.20(1.46)
Emotional	5.25(1.61)	3.90(1.60)
Activeness	5.28(1.67)	3.85(1.71)
Attractiveness	3.75(2.26)	3.20(1.99)

Table 1: Mean (SD) of intensity ratings for facial attributes with respect to left –left and right-right facial composites.

Discussion

Results of the study suggest that the left side facial composites were judged as significantly more emotional and active than the right side facial composites and the right side composites were judged as significantly healthier than the left side facial composites. Mandal, et al. [13] examined the asymmetrical nature of the resting face by asking to rate a photograph on a 5-point bipolar rating scale from pleasant to unpleasant. They have also reported that left side facial composites were judged as more emotional than the right side facial composites and normal orientation. In a study, Karch & Grant [14] reported that left side of neutral faces was rated as healthier, hard, more active and excitable than the right facial composites. The resting left hemifaces is judged as either happier [11] or miserable [12] than the right hemifaces. The Reis & Zaidel [18] partially corroborates the present findings; as that has reported that RR facial composites of women faces were judged significantly healthier than LL facial composites. On the other hand, Silton, et al. [17] reported LL facial composites were received higher ratings for health whereas right facial composites were rated as more sickly, weaker, more feminine softer, more passive and calmer.

The judgment of neutral left hemifaces as more emotional and active may be explained by the 'facial leakage' of the general affective state of the individual [13]. It is expected that besides having an enduring effect every conscious thinking process involves some form of emotional tone and individual tends to control the emotion with the help of certain display rules [26]. The anatomical relationship of the left hemifaces with affect (i.e. right) hemisphere may have also accounted for the present findings. Neuroanatomically, the left hemifaces as compared to the right hemifaces is more richly innervated by the fiber projections of the contra lateral (i.e. right) hemisphere which are considered to be relatively superior /specialized for emotion processing [27]. There is ample of evidence that the left of the face is more dominant than the right in the expression of emotion [4].

The second part of the finding that right side of facial composites was judged as healthier than the left hemifaces. Mandal MK, et al. [28] explained right hemi facial judgment as more robust than the left hemifaces on the basis of co-evolution of face and brain in humans [18]. If Wolff W notion that is right, the right side of the face offers social or public expression whereas the left side reveals hidden, and the personalized feeling is also explained to some extent because looking healthier is socially acceptable. Reiss & Zaidel [18] also speculated a link between facial appearance and health.

Finally, it can be concluded that the phenomenon of facial asymmetry is not only important in the judgment of facial emotion but also equally important in the judgment of facial attributes even in the resting state. Further empirical research with broader perspective is required to have an implicative value of such findings in the day-to-day interaction.

References

1. Knapp ML (1972) Nonverbal communication in human interaction NY: Holt, Reinehart & Winston.

2. Kowner R (1995) Lateral facial asymmetry and its effect on attribution of emotion and personality: A reconsideration. Neuropsychologia 33(5): 539-559.

3. Borod JC, Koff E (1990) Lateralization for facial emotional behavior: A methodological perspective. International Journal of Psychology 25: 157-177.

4. Asthana HS, Bhushan B, Mandal MK (2000) Side bias in facial expression. A Neuropsychological Perspective. In MK, pp 289-312.

5. Lynn JG, Lynn DR (1938) Face hand laterality in relation to personality. Journal of Abnormal and Social Psychology 33(3): 291-322.

6. Wolff W (1943) The expression of personality. New York: Harper.

7. Borod JC, Kent J, Koff E, Martin C, Alpert M (1980) Facial asymmetry while posing positive and negative emotions: Supports for the right hemisphere hypothesis. Neuropsychologia 26(5): 759-764.

8. Asthana HS, Mandal MK (1997) Hemiregional variations in face during emotion expression. The British Journal of Psychology 88: 519-525.

9. Asthana HS, Mandal MK (1998) Hemifacial asymmetry in emotion expression. Behavior Modification 22(2): 177-183.

10. De Jong RN (1979) The neurological examination Hagerstoown MD: Harper & Row.

11. Stringer R, May P (1981) Attributional asymmetries in the perception of moving, static, chimeric and hemisected faces. Journal of Nonverbal Behavior 5(4): 238-252.

12. Campbell R (1978) Asymmetries in interpreting and expressing a posed facial expression. Cortex 14(3): 327-342.

13. Mandal MK, Asthana HS, Madan M, Pandey R (1992) Hemifacial display of emotion in resting face. Behavioural Neurology 5(3): 169-171.

14. Karch GR, Grant CW (1978) Asymmetries in perception of the sides of the human face. Perceptual and Motor Skills 47 (3): 727-734.

15. Zaidel WD, Aarde SM, Baig K (2005) Appearance of symmetry beauty, and health in human faces. Brain and Cognition 57(3): 261-263.

16. Burt DM, Perrett DI (1997) Perceptual asymmetry in judgment of facial attractiveness, age, gender, speech and expression. Neuropsychology 35(5): 685-693.

17. Sitton SS, Waite L, Rivers SC (2006) Perception of traits from normal, mirror, and chimeric images. American Journal of Psychological Research 2(1): 14-20.

18. Reis VA, Zaidel DW (2001) Functional asymmetry in human face: Perception of health in the left and right sides of the face. Laterality 6(3): 225-231.

19. Broad stock M, Borland R, Gason R (1992) Effects of suntan on judgment of healthiness and attractiveness by adolescents. Journal of Applied Social Psychology 22(2): 157-172.

20. Kowner R (1996) Facial asymmetry and attractiveness judgment in developmental perspectives. J Exp Psychol Hum Percept Perform 22(3): 662-675.

21. Kowner R (1997) The perception and attribution of facial asymmetry in normal adults. Psychological Reports 47(3): 371-384.

22. Mandal MK, Pandey G, Singh SK, Asthana HS (1992) Hand preference in India. International Journal of Psychology 27(6): 433-442.

23. Mandal MK (1987) Decoding of facial emotions in terms of expressiveness, by schizophrenics and depressives. Psychiatry 50(4): 371-376.

24. Rhodes G, Lynskey M (1989) Emotion in resting face: Taking sides. A reply to McGee & Skinner (1987) British Journal of Social Psychology 28(3): 273-278.

25. Sackeim HA, Gur RC, Saucy MC (1978) Emotions are expressed more strongly on the left side of the face. Science 202(4366): 434-436.

26. Ekman P, Friesen WV (1975) Unmasking the face Englewood Cliffs, New Jersey: Prentice Hall.

27. Leventhal HL, Tomarken AJ (1986) Emotions: Today's problem. Ann Rev Psychol 37: 565-610.

28. Mandal MK, Bulman-Flemming MB, Tiwari G (2000) Side bias: A neuropsychological perspective. The Kluwer Academic Press The Netherlands 289-312.