

The Influence of Brow Shape on the Perception of Facial Form and Brow Aesthetics

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Background: Previous studies have described the ideal shape of the aesthetic brow. These studies were based on fashion models, who typically have ideal oval faces. In people with different facial shapes, makeup artists modify brow shape to give the illusion of an oval shape. The purpose of this investigation was to compare the classically described ideal brow to the modified brow for each facial shape.

Methods: The faces of five models were morphed into round, square, oval, and long facial shapes. The eyebrows were digitally removed. A makeup artist drew the brows specifically for each facial shape. In a second set of prints, the brow shape was based on the previously published criteria. Seventy-eight people were asked which face they believed was more aesthetic.

Results: There was no significant difference between the classic and the modified eyebrow in the oval or round facial shapes. In the square and long facial shapes, the modified brow was found to be more attractive in 62.7 percent and 58.7 percent of the subjects, which is statistically significant ($p < 0.05$).

Conclusions: The ideal brow may differ from the classic description when applied to the long or square face. In long faces, a flatter brow may give the illusion of fullness. In the square face, an accentuated lateral curvature may help soften the angles of the face. It may be difficult to achieve these modifications surgically, but it is important to be aware of the effect that brow shape has on facial shape. (*Plast. Reconstr. Surg.* 119: 2240, 2007.)

From an aesthetic standpoint, the eyebrow is one of the most important structures of the face. The brow has both static and dynamic qualities that combine to give it a vital role in determining facial aesthetics and expression. Unfortunately, as people age, brow ptosis occurs to varying degrees, changing the shape and position of the brows. These age-related changes frequently compromise the vitality, youth, and expression that are associated with an aesthetically ideal face. Plastic surgeons attempt to restore the youth and aesthetics of the face by elevating and repositioning the brow through either endoscopic or open brow-lift procedures. Nevertheless, de-

spite elevation of the brow, consistent aesthetic results are not always achieved.^{1,2} Even when ideal brows, as defined by Westmore³ (Fig. 1), are digitally placed into the ideal position on different patients, the aesthetic results can be inconsistent. These inconsistencies suggest that other variables may play a role in facial and brow aesthetics.

Facial shape is an important factor in determining facial aesthetics. The oval facial shape is considered the ideal and is typical of most fashion models. However, other facial shapes exist, such as round, square, and long. Physically changing the shape of one's face can be difficult; however, makeup artists commonly use techniques in makeup application to change the perception of facial shape. Professional makeup artists have long recognized the contribution of the brow to facial beauty. They consider the brow to be the master line of the face because it is the reference to which all other angles and contours of the face are set.⁴ By changing the shape and position of the brow, makeup artists can give the illusion of an oval facial shape in women who exhibit one of

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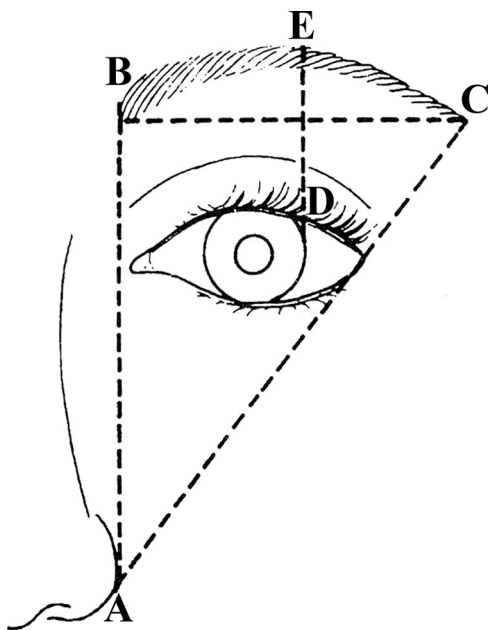


Fig. 1. Ideal brow (reprinted with permission from Westmore, M. G. *Facial cosmetics in conjunction with surgery*. Course presented at the Aesthetic Plastic Surgery Society Meeting, Vancouver, British Columbia, May of 1975. Cited by: Gunter, J. P., and Antrobus, S. D. *Aesthetic analysis of the eyebrows*. *Plast. Reconstr. Surg.* 99: 1808, 1997). The medial brow should begin on the same vertical plane as the lateral extent of the ala and the inner canthus (A to B). It ends laterally (C) at an oblique line drawn from the most lateral point of the ala (A) through the lateral canthus. The medial and lateral ends of the brow (B and C) lie at approximately the same horizontal level. The apex lies on a vertical line (D to E) directly above the lateral limbus.

the other shapes mentioned. These compensatory changes in brow shape are commonly used by makeup artists. Certain facial shapes may look more attractive with these compensatory changes in brow position rather than the Westmore brow. If this is the case, it would be important for the surgeon to take facial shape into consideration before the brow lift, as it may alter his or her desired result.

To the best of our knowledge, no previous study has accounted for facial shape when evaluating brow aesthetics. The purpose of this study was to evaluate different facial shapes and determine whether the most aesthetic brow is the one defined by Westmore or by the makeup artist for a given facial shape.

PATIENTS AND METHODS

To evaluate the effect of brow form and position on facial shape, five models with varying

facial shapes were digitally imaged. Each model had her face morphed into four basic facial shapes (oval, square, long, and round) using Adobe Photoshop (Adobe Systems, Inc., San Jose, Calif.) (Fig. 2). Care was taken not to alter the nose, malar prominence, mouth, or eyes during manipulation of the facial shape. This technique was used to control for all other facial variables. Brows were then digitally removed from these images (Fig. 3).

The 20 browless prints were given to a professional makeup artist, who then drew the brow shape and position with the compensatory modifications for each facial shape. A second set of 20 browless images (four facial shapes for five subjects) had the patients' brows positioned to represent the standard ideal brow position as defined by Westmore.³ Adobe Photoshop was used to morph the subject's actual brows to conform to the dimensions defined by Westmore and the makeup artist.

The makeup artist's images were placed adjacent to images using the ideal Westmore brow. The patients and the facial shapes were randomized in the sequence viewed by the evaluator. Seventy-eight people evaluated the images and stated which face was considered the most aesthetic. A two-tailed *t* test was used to evaluate the significance of the results.

RESULTS

In the oval face, 51 percent of evaluators found the Westmore brow to be more aesthetic. In the round facial shape, 52 percent of evaluators found the makeup artist's version to be more aesthetic. Neither of these results was statistically significant. However, there was a significant difference in the long and square facial shapes. Fifty-eight percent of the evaluators favored the makeup artist's brow in the long facial shape group ($p < 0.05$). In the square facial shape group, 62 percent of the evaluators favored the makeup artist's brow ($p < 0.05$).

DISCUSSION

Westmore established aesthetic criteria for the "ideal" brow, which was later modified by Ellenbogen.^{3,5} The brow is set at or slightly above the orbital rim. The medial extent of the brow lies at the same level of the medial canthus and alar rim. The lateral extent of the brow lies in a line that runs tangent to the alar base and lateral canthus. The brow peak lies at the level of the lateral limbus. These dimensions are the criteria



Fig. 2. Each model's face was morphed into four basic facial shapes: oval, square, long, and round. This technique was used to control for all other facial variables.

by which postoperative brow-lift results are often judged. However, there is not a consensus on the ideal brow shape and position.¹⁻⁵

Angres was the first surgeon to appreciate the influence of intercanthal distance on brow aesthetics.⁶ He stated that if the intercanthal distance is normal, the brow should start at a vertical line that bisects the medial canthus. However, if the intercanthal distance is increased, the brow should begin medial to the medial

canthus. In contrast, a narrow intercanthal distance requires the brows to start lateral to the ideal position.

Before digital imaging, preoperative and postoperative photographs were used to evaluate changes in brow shape and position. The problem with this technique is that the other facial changes that occurred from the brow lift and associated procedures could confound the observer's assessment of the brow. Digital im-



Fig. 3. Brows were digitally removed from all images. The Westmore and makeup artist's brows were then digitally applied to this template.

aging allows surgeons to change the brow shape and position without altering other facial structures. By isolating changes strictly to the brow, potentially confounding variables in adjacent structures are eliminated. Freund and Nolan used this technology to evaluate brow shape and position and to compare criteria of beauty between makeup artists and plastic surgeons.² They found that despite variability in the criteria for the aesthetic brow in the plastic surgery lit-

erature, some common denominators of brow aesthetics do exist. They found that the makeup artists and the plastic surgeons agreed on brow height and shape. Thus, beauty is not entirely subjective, and common criteria for facial aesthetics exist. When the authors evaluated the postoperative results in previously published studies, they found that the surgical results were often suboptimal when judged by their criteria for brow shape and position.

In an excellent, in-depth review of brow aesthetics, Gunter and Antrobus used digital imaging to change both the position and the shape of the brow.¹ Their population consisted of both models and patients. Eyebrows were evaluated with regard to size, shape, position, and relationship to surrounding periorbital structures. They used digital photography to create images that maintained original shape and position, changed the position independent of shape, changed shape independent of position, and elevated the arch to a higher position. Interestingly, they found that there was variability in brow aesthetics and that no brow looked good on every face. They concluded that the goal of the brow lift should be to reposition or reshape the brow to enhance a particular individual's appearance. Simply lifting the brows most likely will not achieve an optimal result. The variability of the aesthetic appearance of a given brow on different subjects led us to study other variables that affect brow aesthetics.

The subspecialty of craniofacial surgery emphasizes the importance of complete facial analysis. Facial shape is one aspect of this assessment, and professional makeup artists have long recognized its importance. The four basic facial shapes are oval, round, square, and long. Facial shape can easily be determined by tracing the patient's face on acetate paper overlying a photograph of the patient. By viewing only the facial outline, the shape is obvious to the surgeon.

The oval face is considered the ideal and is the shape of most models' faces. Although it is difficult to change the physical shape of the face, makeup artists often alter facial features to change the perception of facial shape.⁷ By creating subtle changes in eyebrows, they can alter how the observer perceives the face. This may be one reason that no single eyebrow position and shape is considered beautiful on every face. Many of our previous studies have been on models and attractive patients. As stated previously, these people often have oval faces, and their brows would not necessarily be considered attractive on a person with a round, square, or long face.

Makeup artists use several principles when shaping the brow. The oval face is considered to be the ideal shape. Nonoval facial shapes have brows that are modified to create the illusion of a more oval face. It is interesting to note that both the makeup artist's and Westmore's ideal brow for the oval face is almost the same (Fig. 4). Square faces favor soft curves with an arch lateral to the lateral limbus. Makeup artists shape the brow on square faces so that the lateral aspect is directed at the center of the ear. This makes angles less harsh and appears to decrease the distance between the upper and lower halves of the face (Fig. 5). Long faces may favor a straighter brow, avoiding a high arch that may add length to the face. The brow is kept almost straight across, with the lateral aspect pointing closer to the top of the ear (Fig. 6). Round faces favor a brow with a high arch that



Fig. 4. Oval facial shape. Both the Westmore (*left*) and makeup artist (*right*) versions share similar proportions.



Fig. 5. Square face brow modifications juxtaposed with the Westmore (*left*) brow. The makeup artist version (*right*) differs from the Westmore version by softening the curve of the brow, with the lateral aspect pointing slightly more inferior toward the center of the ear.



Fig. 6. Long face brow modifications juxtaposed with the Westmore (*left*) brow. The makeup artist (*right*) keeps the brow low and straight. High arches are avoided, as they may augment the appearance of an already long face.

points toward the top of the ear to enhance angularity of the face (Fig. 7).⁷

From a surgical standpoint, these changes may be difficult, if not impossible, to achieve;

however, the effects of a brow lift on the perception of facial shape are important to consider. One would certainly not want to create any brow changes that would accentuate the non-



Fig. 7. Round facial shape. The makeup artist adds a slightly higher arch to the brow to add angularity to the face. However, there was no statistically significant difference in preference between the Westmore (*left*) and makeup artist (*right*) versions.

oval features of a face. For instance, in the long face, the surgeon would want to be cognizant that elevating the entire brow may lead to an unattractively long face. In a square face, one would want to minimize angularity of brow shape that would accentuate the square face. These principles apply to changes in brow position created by the injection of botulinum toxin as well. In many cases where brow ptosis is minimal, simple electrolysis is effective in obtaining the ideal brow dimensions for the patient. Aucoin has stated that “To me the brows are the most important feature of the face. They are the most expressive feature as well as the one that can be changed the most without cosmetic surgery.”⁸ It is important for the surgeon to be honest with himself or herself as to whether the patient will achieve the best result with a surgical procedure or a nonsurgical alternative.

CONCLUSIONS

The results in this study suggest that there may not be one ideal brow for every facial shape. Although the Westmore ideal appears to work well for many facial shapes, there may be an alternative ideal for square and long faces. It is hoped that these principles will aid in the preoperative evaluation of patients undergoing

brow-lift procedures and help the surgeon achieve optimal results. Although the results in this study did not overwhelmingly favor the makeup artist's version for long and square faces, the principles described may be useful in enhancing the result in patients with long and square faces.

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DISCLOSURE

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