

Circles of Prominence
New Theory on Facial Beauty:
Ideal Dimensions of the
Ears | Nose | Lips

By

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Circles of Prominence

A New Theory on Facial Aesthetics

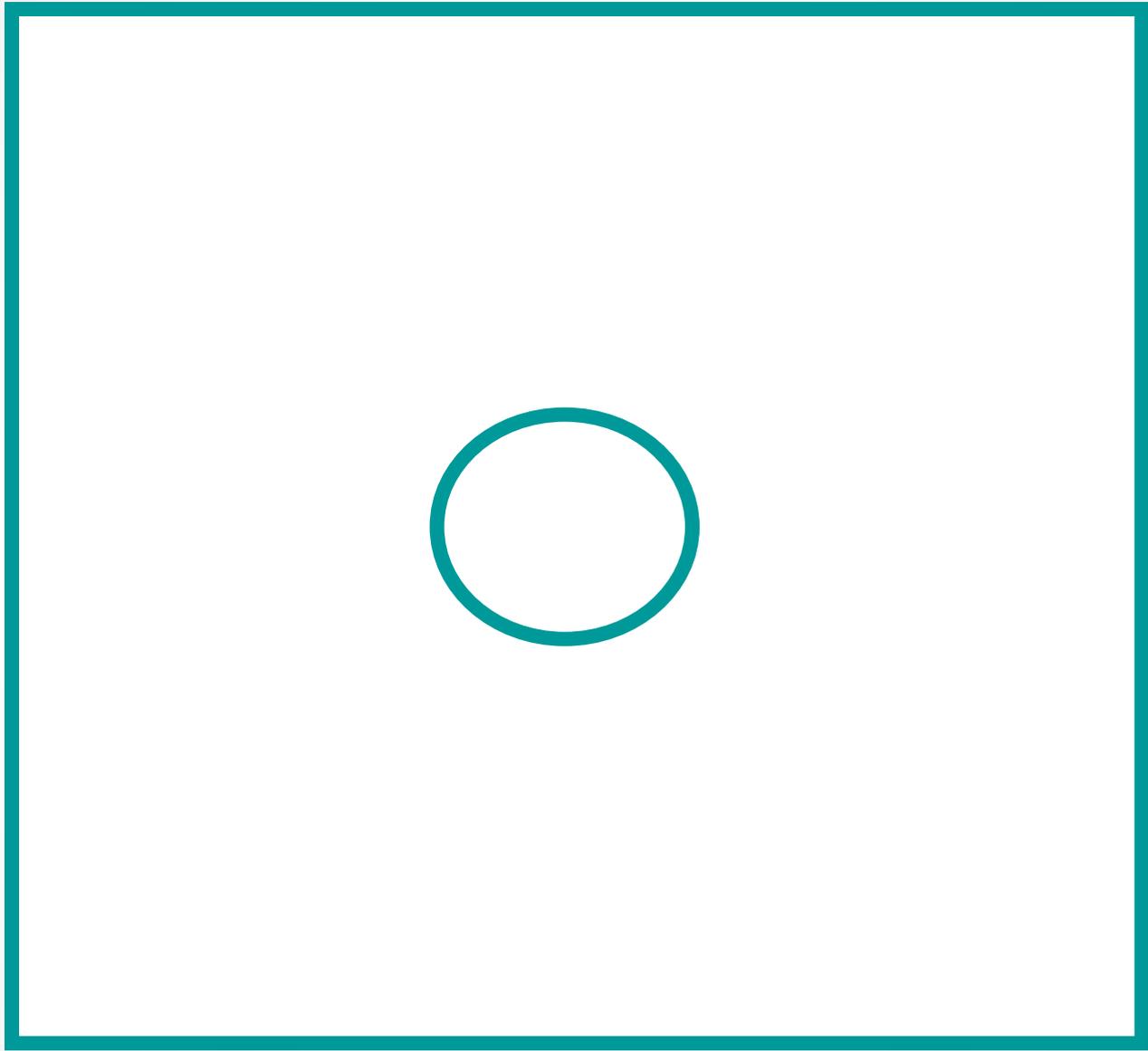
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Objective: To elucidate key elements of facial aesthetics through a new hypothesis called the *circles of prominence*.

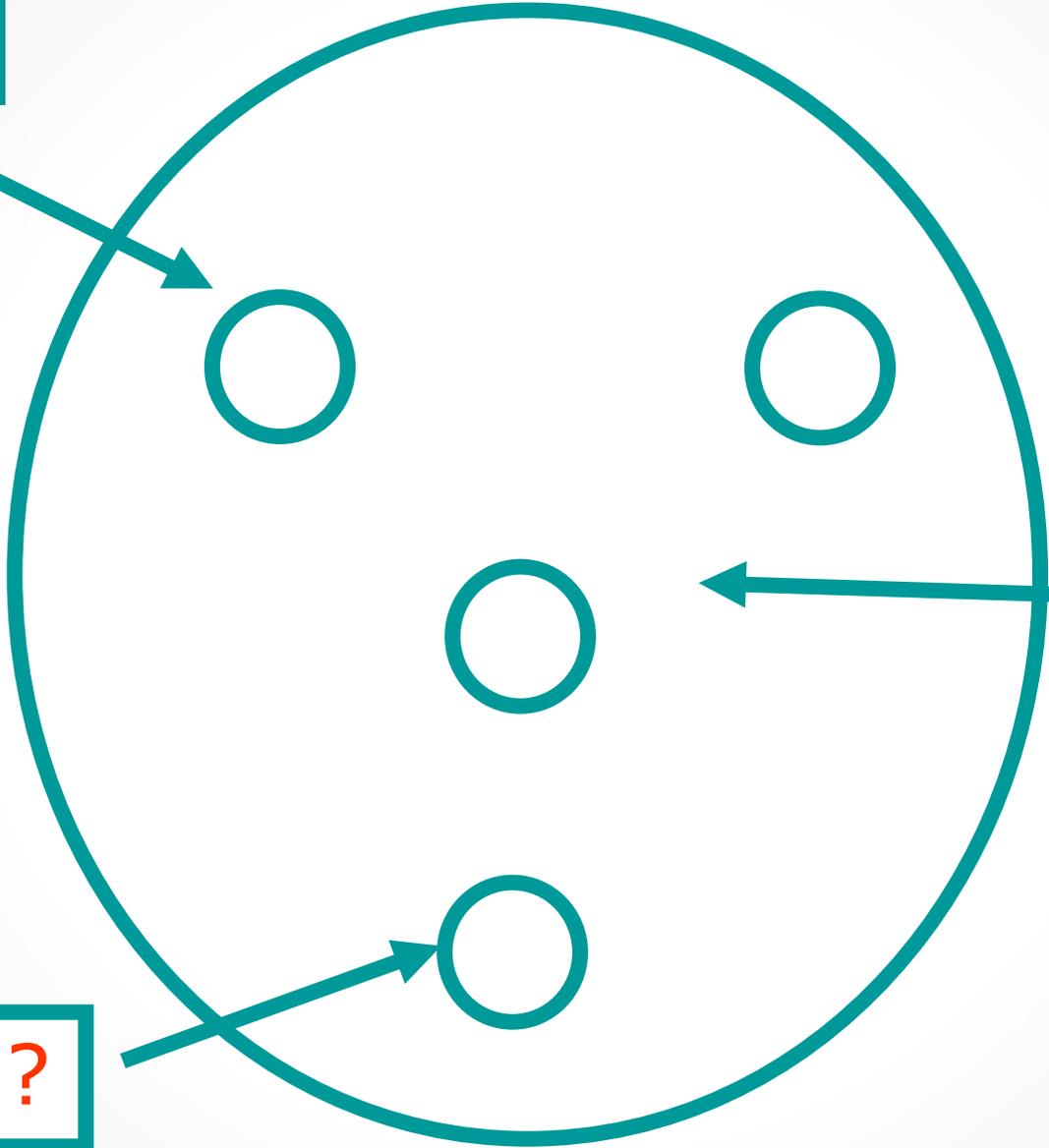
Design: In this subjective survey, 32 persons in the medical field rated frontal-view photographs of 20 subjects in 5 categories on a 0-to-100 scale, 0 representing the most unaesthetic rating, 100, the most aesthetically pleasing. The study was conducted in an academic setting, and the subject photographs were of 9 women (aged 27-65 years) from a clinical setting and 11 women whose pictures appeared in entertainment magazines. Each subject's eyes, nose, mouth, and chin were subjectively rated for their aesthetic quality. A general rating was also given for the subject's face as a whole. The subject's faces were then analyzed and measured based on the circles of prominence theory. A total of 52 measurements were chosen for the analysis. All raters' numbers for each anatomic unit and the face in general for each subject were averaged. The theoretical measurements were also averaged for each unit. The percentage of the ideal for the face in general was calculated based on weighted averages of the measurements from the individual units of each subject. The Wilcoxon signed-rank test was used to determine whether a significant difference existed between the raters' averages and the averages measured based on the facial analysis. Spearman rank coefficient correlation was used to determine if a significant correlation existed be-

Results: We set statistical significance at $P \leq .05$ and found that the mean ratings of 11 of the 20 raters for the face in general were not significantly different from the measured means based on the circles of prominence theory. There was a significant correlation between the raters' means and the measured percentages of the ideal for all units and the face in general based on the Spearman rank test.

Conclusions: Although the statistical analysis showed that many of the raters' subjective averages were significantly different from the averages calculated on the circles of prominence theory, the trends for those averages showed that the theory has meaningful validity in assessing facial aesthetics. The measured average ratings based on the theoretical calculations were higher than the subjectively rated averages. This was especially true for the photographs of clinical subjects and might be the cumulative result of multiple measured deviations from what is most aesthetically pleasing, thus creating an impact greater than the sum of its parts on the observer's subjective interpretation. The possible synergistic effects of multiple deviations for each anatomic unit or the face in general might have resulted in the much poorer subjective ratings than what the equally weighted, linearly determined measurements could analyze.



Eyes?



Nose?

Mouth?

ORIGINAL ARTICLE

The Circles of Prominence: Ideal Ratios That Determine the Basis of Facial Beauty

Philip A. Young, MD

Introduction: To test a key ratio within the face that establishes a basic order thought to define facial beauty. The ratio is based on the distance between the horizontal level of the iris to the nasal tip, the nasal tip to the lower lip, and the lower lip to the menton.

Materials and Methods: This was a subjective survey in which 27 pictures (3 variables with 3 values) were displayed to evaluators who would judge all of the pictures to assess their general attractiveness. To construct the pictures, we varied the distance between (1) the horizontal level of the iris, (2) the center of the nasal tip, (3) center of the lower lip, and (4) menton with the distance from the center of the iris to the midline fixed at 3 iris widths. These 3 distances were varied by 2, 3, or 4 iris widths. One hundred random patients (data not shown) from a head and neck surgery clinic were asked to place all of the photos in order from most aesthetically pleasing to least aesthetically pleasing. The rankings of all 100 patients/evaluators were averaged for each picture. Essentially, the lower the average, the more aesthetically pleasing the picture was thought to be by our test population. Because of the equivocal results from the first part of this study, we carried out another study placing the 2 most aesthetically pleasing pictures (pictures 5 and 14) from the first part of the study in another head-to-head study. In the second part of the study, we asked 127 patients from a facial plastic surgery office to judge whether picture 5 or 14 was the more attractive picture.

Results: The first part of the study showed that 2 facial representations of picture 5 (average ranking 4.67) and picture 14 (average ranking 4.28) were determined to be the most aesthetically pleasing, where rank 1 was judged to be the most attractive. Statistically through permutation tests ($P < .01$), picture 14 (ratio 3, 3, 3) was shown to be more preferred over all pictures other than picture 5 (ratio 4, 3, 3). Picture 5 had a $P = .2230$. A Bonferroni correction showed that

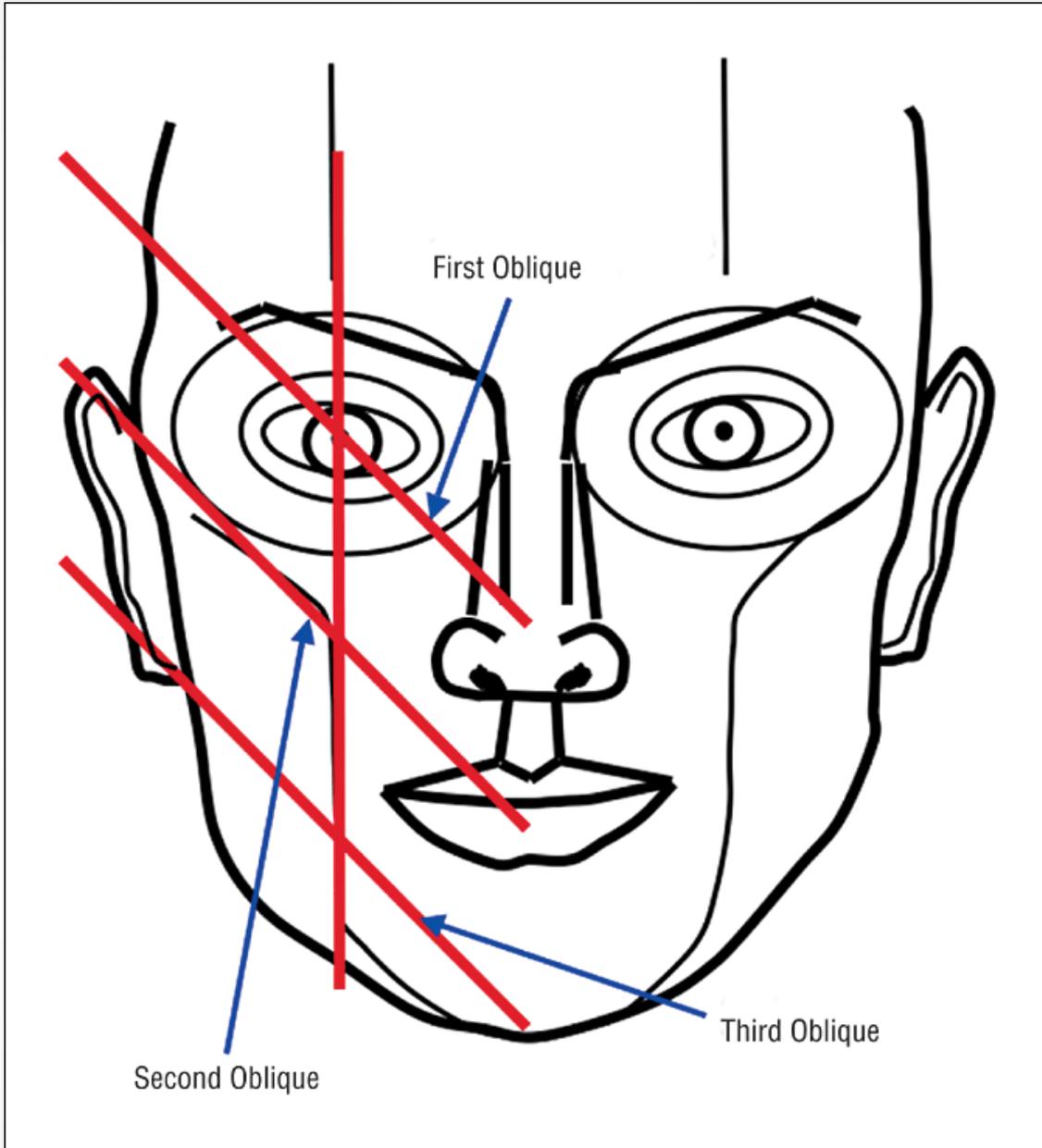
picture 14 was ranked No. 1 more often than picture 5, with $P < .0011$. In the head-to-head study, 88 people chose picture 14 and 39 chose picture 5. A 1-sample test of proportion showed that this was highly significant, showing that picture 14 was indeed the more pleasing picture ($P < .01$).

Conclusion: The study supports the idea of the importance of the iris, nasal tip, and lower lip as the main objects used when people assess beauty within a face. When the distance between these objects are varied, the presence of beauty is also varied. Based on this study, when these elements are balanced equally between each other, this arrangement is found to be more beautiful. Statistically, we were able to show that picture 14 was judged to be the most attractive where the distances were all equal (3 iris widths). This study further supports the validity of the Circles of Prominence as a theory on facial beauty.

Introduction

The elements of facial beauty have remained elusive.¹ Leonardo da Vinci's neoclassical canons, which have dominated our thoughts on this subject, have recently been shown to lack the ability to distinguish the average from the beautiful.² Previous theories, such as the canons, have concentrated on external landmarks on the face that do not occupy a significant portion of the time used by a viewer when they see a face. Because a viewer places less attention on these points (and other points that theories in the past have concentrated on), a theory based on these landmarks is inherently flawed when used to separate, aesthetically, the beautiful from the average face. A new theory should be based on elements that grasp the most attention from a viewer.¹

Previous literature has given us insight into some of the elements that occupy a person's attention when



8 Sections studying different examine 4 things

The vertical positioning of the ears

The total width of the lips (comm-comm)

The total width of the puckering of the lips (highlight)

The height and positioning of the nose

Data Based on 176 Surveys

Question 1: Ear Vertical Positioning

0 IW

2 IW Sup

1 IW Sup

1 IW Inf



1.25

3.57

2.65

2.53

Question 1:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
<0 .001	<0.001	1

Question 2: Ear Vertical Positioning Line Drawings

Distance from 1st Oblique in Distances of Iris Widths

1 IW Inf

2 IW Sup

1 IW Sup

0 IW



2.77



3.49



2.19



1.62

Question 2:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
< 0.001	< 0.001	4

Lip Study Morphed Pictures:

Question 3:

The Length of the Lips were varied between 6, 5, 4, 3 IW

6 IW

5 IW

4 IW

3 IW



• 3.76

1.91

1.62

2.8 •

Question 3:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
<0.001	<0.001	3

Lip Study Line Drawings:

Question 4:

The Length of the Lips were varied between 6, 5, 4, 3 IW

6 IW

5IW

3 IW

4 IW



3.48

1.58

3.13

1.85

Question 4:

Area	P-Value	P-Value	Best Picture(s)
	H0 : All Equal	H0 : Top 2 Equal	
4	< 0.001	0.048	2

Question 5:

The Lip Pucker was then varied from 2IW, 3IW, 4IW, and 5IW

5 IW

3 IW

2 IW

4 IW



3.79

1.56

1.98

2.71

Question 5:

Area	P-Value	P-Value	Best Picture(s)
	H0 : All Equal	H0 : Top 2 Equal	
5	< 0.001	0.09	2 & 3

Question 6:

Lip Pucker Line Drawings: 2,3,4, and 5 Iris Widths

3 IW

2 IW

4 IW

5 IW



1.51

1.60

2.99

3.90

Question 6:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
< 0.001	0.7	1 & 2

Question 7:

Nose Length varied from 0 IW, 1 IW superior, 1IW inferior, 2IW inferior

2 IW inf

1 IW inf

1 IW sup

0 IW



3.50

2.89

1.91

1.75

Question 7:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
< 0.001	0.1	3 & 4

Question 8:

Line Drawings Nose Length: 0 IW, 1 IW superior, 1 IW inferior, 2 IW inferior

0 IW

1 IW sup

1 IW inf

2 IW inf



Picture 1



Picture 2



Picture 3



Picture 4

2.12

2.63

2.45

2.80

Question 8:

P-Value	P-Value	Best Picture(s)
H0 : All Equal	H0 : Top 2 Equal	
0.008	0.003	1

Conclusion:

- The Circles of Prominence states that everything in the face has an ideal between zero and infinity
- Because humans spend so much time looking at the iris, the size and shape of the iris dictates this ideal for many objects
- This study looks specifically at the position of the ears, length of the lip pucker, total lip length, the start of the nose and ultimately nose length
- What we are seeing is that the iris can dictate shapes that are closer to its size. But when other distances significantly exceed one iris width the viewer begins to use:
 - 1. the horizontal eye aperture
 - 2. the total distance between the irises
- This is based on simplicity. What is the simplest way to make the face fit all together without being too complex in the mind
- This study further supports the idea that the face is organized into obliques dictated by the relationship of the iris with the nasal tip.