

# **History and Facial Features: The Eyes Have it for Actresses but not for Actors**

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Previous research (Pettijohn & Tesser, 1999) found that facial features of popular American movie actresses between 1932 and 1995 were systematically related to social and economic conditions. In this follow up study, facial feature preferences for popular American male movie actors were examined. Facial photographs of popular actors for each year between 1932 and 1995 were converted to digital graphics files to allow measurement of facial features. As predicted, actor facial feature measurements within years were not consistent and demonstrated greater within year variance than actress measurements. These findings suggest that preferences for popular actor facial features are not related to changes in the social and economic climate.

In previous research, Pettijohn and Tesser (1999) reported that when social and economic conditions in the United States were bad, American movie actresses with mature facial features (small eye size, thin cheeks, and large chins) were popular, and when social and economic conditions were good, actresses with neonate facial features (large eye size, round cheeks, and small chins) were popular. These findings followed predictions made from the *Environmental Security Hypothesis* (Pettijohn & Tesser, 1999). This hypothesis suggests that feelings and thoughts of environmental security influence our preferences for facial features. When individuals feel insecure and threatened in their surroundings, they prefer others with more mature characteristics. Mature facial features, such as smaller eye size, thinner cheeks, and larger chins, elicit greater attributions of strength, independence, and control (Keating, Mazur, & Segall, 1981). These mature characteristics would be more desirable when social and economic times are uncertain and unstable, compared to more assured circumstances. On the other hand, when times are good, individuals prefer others with less mature facial features, such as larger eyes and smaller chins. These more neonatal features are associated with attributions that suggest greater playfulness.

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Is the relationship between socio-economic threat and preference for facial features the same regardless of the sex of the movie star? Although this is a basic question it could not be addressed in the previous study because the sample consisted only of actresses and not actors. The present article extends this work to popular American motion picture actors. What might we expect in preferences for the facial features of actors compared to the facial features of actresses? Previous research suggests that male and female physical appearance may be valued differently. More specifically, physical appearance appears to be more important for judging women than for judging men (e.g., see Berscheid & Reis, 1998). These differences are also consistent with evolutionary mate selection theories (Buss & Barnes, 1986; Buss, 1988, 1989, 1994; Symons, 1979). Males place a greater emphasis on female youth, health, and attractiveness, whereas females place a greater emphasis on male status, financial potential, and commitment. According to these evolutionary theories, women are competing against other women with respect to appearance and men are competing with other men with respect to status and resources.

In other research, Sprecher (1989) had participants rate their attraction to an opposite sex individual after being given information about the person's physical attractiveness, earning potential, and expressiveness. These characteristics were determined to be important in considering the attractiveness of an opposite sex stranger. Consistent with sex-role stereotypes, males valued physical appearance to a greater extent and females valued earning potential and expressiveness to a greater extent.

Feingold (1990) conducted a meta-analysis considering evolutionary and sociocultural theories' contentions that men place greater value on the physical attractiveness of mates than do women. Exploring five different research paradigms that had been used in past research (questionnaires, personal advertisement analyses, correlations of attractiveness and opposite sex popularity, correlations with liking and interaction partner, and experiments manipulating attractiveness and similarity of an opposite sex stranger), he found the predicted sex difference effect in all analyses. Both males and females appear to place a great emphasis on female appearance, and neither sex places a great emphasis on the physical appearance of males.

Taking these previous findings into account, we expected the relationship between social and economic stress and facial feature preference to be attenuated for actors compared to actresses.

## METHOD

In order to test the current hypothesis, a measure of American actor

popularity, photographs of the identified popular actors, and a measure of social and economic conditions in the United States across history were required.

### **Popularity Measure**

Each year, since 1932, the Quigley Publishing Company conducts an extensive poll of movie exhibitors, asking for the biggest box-office draws. The results of this poll are published in the annual edition of the *International Motion Picture Almanac* (Quigley Publishing Company).<sup>1</sup> This poll offers a reflection of the popularity of stars with movie audiences and was determined to be the best, continuous source to use. It was also consistent with the methodology used in Pettijohn and Tesser's (1999) previous research on actresses. Based on the results of this poll, the five top American actors for each year between 1932 and 1995 were selected, except for 1933 and 1934 in which only four actors were available. This provided a total of 80 actors, where some actors appeared in the poll multiple years.<sup>2</sup>

### **Facial Photographs and Facial Measurements**

A high quality picture that captured a complete, straight, front, facial view of 78 of these top actors was located.<sup>3</sup> All images were digitally scanned, using a flat-bed scanner, and saved as computer graphics files. A complete listing of the 78 actors used in this study is located in the Appendix.

Facialmetric assessments based on Cunningham's model of facial feature measurement (1986; Cunningham et al., 1995), were made by two raters on a total of 23 facial features for each actor. These facial measurements included *length of face*, *width of face at cheekbones*, *width of face at mouth*, *eye height*, *eye width*, *nose length*, *nose tip width*, *nostril width*, *chin length*, *chin width*, *forehead height*, *vertical eye placement*, *horizontal eye separation*, *cheekbone prominence*, *chin thinness*, *chin area*, *eyebrow height*, *brow thickness*, *facial narrowness*, *upper lip width*, *lower lip width*, *eye area*, and *nose area*.<sup>4</sup> Raters used a computer program (PhotoMagic, 1993) to adjust the facial photographs to be perpendicular and then moved the mouse pointer to a beginning point and an ending point for each facial measurement, recording the spatial coordinates from the screen. Measurements were standardized as ratios to the appropriate vertical or horizontal axis and the mean for each facial feature for each actor was computed from the independent raters' assessments. Actor age at the time the actor was popular was also determined.

### **Social and Economic Hard Times Measure**

To gauge changes in the social and economic environment in the

United States from 1932-1995, the *General Hard Times Measure* used in Pettijohn and Tesser's (1999) previous work was considered. This is an aggregate, standardized, global measure which is comprised of United States unemployment rate, change in disposable personal income, change in consumer price index, death rate, birth rate, marriage rate, divorce rate, suicide rate, and homicide rate. The indices were consistently scored so that more positive numbers indicated greater threat/hard times.

## RESULTS

To calculate the reliability of facial feature measurements, the correlation between the two raters' measurements for each feature was computed and then stepped up with the Spearman-Brown prophecy formula. The average reliability was .98.

TABLE 1 Comparison of Actress and Actor Within Year Consistency of Features

Feature	Z	Feature	Z
Age	-1.07	Cheekbone Prominence	-1.79**
Eye Height	-1.17	Cheek Thinness	-2.92***
Eye Width	-2.34	Facial Narrowness	.56
Eye Area	-1.25	Brow Thickness	-1.80**
Nose Length	.36	Chin Length	.27
Nose Tip width	.05	Chin Width	-1.84**
Nose Area	-.39	Chin Area	-1.69**
Nostril Width	-1.19	Eyebrow Height	-1.48*
Forehead Height	.59	Upper Lip Width	-1.61*
Vertical Eye Placement	.50	Lower Lip Width	.06
Horizontal Eye Separation	-.11		

Note.  $N=57$  years. All tests were 2-tailed. Positive Z values indicate greater within year consistency in the female actress sample than in the male actor sample and negative Z values indicate greater within year consistency in the male actor sample than in the female actress sample. \* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$ .

If there is any historical influence at all on preference for actors' facial features, then facial features within each year should resemble each other more than facial features across years. The ratio of within year variance to between year variance is reflected in the correlation coefficient. To compute this "reliability coefficient," measurements on the most popular and second most popular actors were correlated across the 64 years for each of the 21 actor measurements (20 facial features plus age). In particular, facial areas involving the eyes and the chin were

expected to show within year consistency (Pettijohn & Tesser, 1999). For none of the 21 actor features did this reliability coefficient reach a traditional level of significance.

We compared the reliability for actors with the previously reported reliability for actresses (labeled "consistency" in Pettijohn & Tesser, 1999). There were significant differences between the actors and actresses in the facial areas of the eyes and the chin. Specifically, as can be seen in Table 1, there was greater reliability for actresses than for actors in the features of *eye width*, *cheekbone prominence*, *cheek thinness*, *brow thickness*, *chin width*, and *chin area*.

TABLE 2 Comparison of Actress and Actor Within Year Variance of Features Across Years

Feature	<i>t</i>	Feature	<i>t</i>
Age	1.03	Cheekbone Prominence	3.39***
Eye Height	1.02	Cheek Thinness	1.96*
Eye Width	-1.57	Facial Narrowness	2.84***
Eye Area	.98	Brow Thickness	1.70*
Nose Length	-.64	Chin Length	-.47
Nose Tip width	3.53	Chin Width	3.30***
Nose Area	6.73	Chin Area	1.50
Nostril Width	2.84***	Eyebrow Height	3.75***
Forehead Height	.57	Upper Lip Width	.72
Vertical Eye Placement	2.59	Lower Lip Width	3.47***
Horizontal Eye Separation	-1.32		

*Note.* Repeated measures *t*-test for  $N=57$  pairs (actors versus actresses paired by year). All tests were 2-tailed. Positive *t* values indicate more within year variance in the male actor sample than in the female actress sample and negative *t* values indicate more within year variance in the female actress sample than in the male actor sample. \* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$ .

The low reliability coefficients for actors can be produced in two ways: There might be relatively little variance in facial features across years or there might be relatively high variance in facial features within years. If there is little systematic influence on the facial features of popular actors, we would expect to find greater within year variance for actors than for actresses. Therefore, the within year variance was computed separately for actors and actresses on each of the 21 features. The variance for actors was then compared to the variance for actresses across years, separately, on each of the 21 features (actor vs. actress was treated as a repeated measure within years). As can be seen in Table 2, 17

out of the 21 total feature measurements showed greater within year variance across years for the actor sample than for the actress sample. Eleven of the 21 features were significantly more variable for actors than for actresses.

Since facial features for actors were unreliable and inconsistent within years, any relationship between features (averaged within year) and social and economic conditions would be difficult to interpret. Therefore, no attempt to relate average actor feature to social and economic conditions (i.e., the *General Hard Times Measure*) across years was undertaken.

### DISCUSSION

The intention of this study was to explore the impact of history on popular movie actor facial features in America. If history has a systematic impact on facial feature preferences, then there should be greater similarity within years than between years. Such similarity was not found. Facial feature measurements for popular actors were uncorrelated with one another across years. Moreover, the correlations were lower than the analogous correlations for actresses, especially in the eye and chin regions. Additionally, the actor sample showed greater within year variance of feature measurements compared to the actress sample. This suggests that facial preferences in actors are not as systematically affected by time (history) as are facial preferences in actresses (Pettijohn & Tesser, 1999). Popular actors within years had large eyes and small eyes, large chins and small chins, and no apparent consistencies were uncovered. In general, popular actresses within years had similar sized eyes, chins, and other features.

One way to interpret this finding is to suggest that female appearance is more important than male appearance. Indeed, several strands of research suggest that there is a sex difference in the relative importance of physical appearance (see Feingold, 1990; Berscheid & Reis, 1998 for a review). Males tend to place a greater emphasis on female physical attractiveness than females place on male physical attractiveness and females are very concerned with their own appearance and the appearance of other females. This concern is evident in the observations that women worry about their appearance more than men, women often compare their physical appearance to other women, and women comprise 90 percent of cosmetic surgery patients (Dion, Dion, & Keelan, 1990).

Another way of interpreting the outcome of this research may lie in the connection between popularity and physical appearance. In short, the link between popularity and physical attractiveness of females may be stronger than the link between popularity and physical attractiveness of males. One of the paradigms in Feingold's (1990) meta-analysis

considered this link and found evidence of this effect when considering romantic popularity. However, in these previous investigations, popularity was measured in terms of dating activity, number of romantic partners, and global self-ratings. Popularity of actors, expressed through box office receipts and anticipation of individuals buying tickets to see an actor in a film, and romantic popularity are different constructs. However, the relationship between popularity and actress physical appearance may also be stronger than the relationship between popularity and actor physical appearance.

In sum, for women, the eyes have it. The foibles of history with respect to social and economic good and bad times are clearly associated with the facial features of the motion picture actresses that we pay money to see on the silver screen. History seems to exert no such selective influence on preferences for men. For popular movie actors, there is as much variance in facial features within an historical period as there is across historical periods.

Although the current research did not allow for an investigation of popular actor facial features and social and economic conditions due to inconsistency of facial measurements within years, future research should continue to test the *Environmental Security Hypothesis*. The generality of the gender difference documented in this study needs further exploration. We need to understand better the parameters that affect facial preferences in our choices of female others. The study reported here and the previous work on actresses has been correlational. Experimental work would help establish clear causal links might help tease apart the components of "environmental security." The notion that environmental circumstances can change the attractiveness of physical features in others is novel and important. It deserves further scrutiny.

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#### Notes

<sup>1</sup> Results of the Annual Quigley Publications Poll were found in the *International Motion Picture Almanac* (1933-1963, 1968-1997), the *Motion Picture Herald* (1970-1972), *People Entertainment Almanac* (1995-1997), the *Guinness Book of Movie Facts and Feats* (1993), and *Film Facts* (1980).

<sup>2</sup> Although 80 unique actors were identified by the Quigley Publications Poll, in two instances poll results reported two actors sharing a single position. These two combinations were of Abbott & Costello and Dean Martin & Jerry Lewis. However, Dean Martin and Jerry Lewis each individually appeared in the popularity ratings as well.



<sup>3</sup> Acceptable photographs could not be found for Mel Brooks, Rodney Dangerfield, Lee Marvin, and George C. Scott.

<sup>4</sup> *Length of face, width of face at cheekbones, and width of face at mouth* measurements were only used in calculation of other facial features and not meaningful themselves since image sizes vary.

## APPENDIX

### *Popular American Movie Actors Identified by the Annual Quigley Publications Poll, 1932-1995*

Abbott & Costello, Alan Alda, Woody Allen, Fred Astaire, Gene Autry, Warren Beatty, Wallace Beery, Humphrey Bogart, Pat Boone, Marlon Brando, Charles Bronson, Mel Brooks, Richard Burton, George C. Scott, Eddie Cantor, Jim Carrey, Chevy Chase, Sean Connery, Gary Cooper, Kevin Costner, Bing Crosby, Tom Cruise, Billy Crystal, Macaulay Culkin, Tony Curtis, Rodney Dangerfield, Michael Douglas, Richard Dreyfuss, Joe E. Brown, Clint Eastwood, Charles Farrell, Errol Flynn, Glenn Ford, Harrison Ford, Michael J. Fox, Clark Gable, Mel Gibson, Elliott Gould, Cary Grant, Gene Hackman, Tom Hanks, Dustin Hoffman, Paul Hogan, William Holden, Bob Hope, Rock Hudson, Van Johnson, Alan Ladd, Burt Lancaster, Jack Lemmon, Jerry Lewis, Dean Martin, Lee Marvin, Steve McQueen, Dudley Moore, Eddie Murphy, Bill Murray, Paul Newman, Jack Nicholson, Ryan O'Neal, Al Pacino, Brad Pitt, Sidney Poitier, Dick Powell, William Powell, Tyrone Power, Elvis Presly, Richard Pryor, Robert Redford, Burt Reynolds, Will Rogers, Mickey Rooney, Arnold Schwarzenegger, Frank Sinatra, Sylvester Stallone, James Stewart, Robert Taylor, Spencer Tracy, John Travolta, John Wayne, Robin Williams, Bruce Willis.