Average Attractions

Psychologists break down the essence of physical beauty

By BRUCE BOWER

Although these look like photographs of real-life women, they are in fact computer-generated composite faces. Images from top to bottom represent composites of four, eight, 16 and 32 faces. College students rated the bottom two composites as most attractive, even compared with the individual faces that made up the composites.

Images: Judith H. Langlois

*H*ere she comes, Miss America. Her demeanor exudes poise, her figure curves gracefully, her face is incredibly average.

That's right, average. And no, the computer did not jumble the judges' votes, at least not according to Judith H. Langlois of the University of Texas at Austin and Lori A. Roggman of the University of Arkansas at Fayetteville. These two psychologists have provided a scientific answer to a question that has puzzled philosophers for centuries: What constitutes physical beauty? Their surprising answer: The most attractive people are not blessed with rare physical qualities others can only dream about. A knockout face possesses features that approximate the mathematical average of all faces in a particular population.

In other words, Miss America's face is an extremely typical example of all faces, constituting what psychologists call a facial "prototype." Strictly speaking, her beauty is average. And the same goes for handsome male faces.

"This is a very exciting principle," says psychologist Ellen S. Berscheid of the University of Minnesota in Minneapolis. "We can get an empirical handle on facial beauty now."

Until seeing Langlois and Roggman's data, Berscheid, like most other investigators of physical attraction, contended that physical beauty was unmeasurable. Good looks were assumed to be perceived as unified whole, a kind of "gestalt face" that could not be broken down or averaged in the laboratory. "We thought it was impossible to determine whether, say, Cary Grant's ears or Elizabeth Taylor's nose are attractive in an absolute sense," Berscheid remarks.

If Berscheid's about-face foreshadows a widespread adoption of the notion that attractive faces are average, the implications will extend beyond rating the raw beauty of movie stars. For instance, an analysis of groups of children's faces at different ages might provide surgeons with reliable guideposts for reconstructing craniofacial deformities resulting from accidents or inborn defects, Lang-

lois says. Craniofacial surgeons currently operate with no standardized, age-based criteria for reshaping a disfigured face she adds.

*F*or now, the theory of "average beauty" rests on an intriguing facial analysis of 96 male and 96 female college students. Mug shots of the students — predominantly Caucasian, but including some Hispanics and Asians — were scanned by a video lens hooked up to a computer that converted each picture into a matrix of tiny digital units with numerical values.

Langlois and Roggman divided each group into three sets of 32 faces. In each set, the computer randomly chose two faces and mathematically averaged their digitized values. It then transformed this information into a composite face of the two individuals. Composite faces were then generated for four, eight, 16 and 32 members of each set.

Each set of individual faces and its corresponding composites was then judged by at least 65 college students, including both males and females. The students rated composite faces as more attractive than virtually any of the individual faces, Langlois and Roggman report in the March PSYCHOLOGICAL SCIENCE.

Student judges attributed the most striking physical superiority to the 16- and 32-face composites. Composites made from eight or fewer faces did not receive attractiveness ratings significantly greater, in a statistical sense, than individual ratings.

Not only does the averaging of 16 or more faces produce a highly attractive composite image; it also seems to produce a prototypical face. The 16- and 32-face composites in each set looked very similar to each other, and also looked similar to the corresponding composites in the other two same-sex sets, the researchers note. It did not matter that some composites were randomly generated from individual faces rated more unattractive than attractive, while other

composites consisted of a majority of faces judged as attractive.

Although a composite of a different racial group — say, 32 Asian faces — would surely look different from a predominantly Caucasian composite, Langlois predicts that both Asian and non-Asian judges would rate a composite Asian face as very attractive.

"We don't claim to have simulated what the human mind does," Langlois says. "Our digitized images only approximate the averaging process that is assumed to occur when humans form mental prototypes [of an attractive face]."

*T*he finding helps explain numerous recent observations that both infants as young as 2 months old and adults perceive the same faces as attractive, regardless of the racial or cultural background of the person viewing a face (SN: 5/16/87, p.310). In the January DEVELOPMENTAL PSYCHOLOGY, Langlois and her co-workers report that 1-year-olds are happier, less withdrawn and more likely to play with a female stranger judged as attractive by adults than with an equally unfamiliar female rated unattractive. The same infants play significantly longer with a doll possessing an attractive face as judged by adults than with a doll whose face is unattractive to adults.

Faces serve as a critical source of social information, especially for babies, who may prefer an attractive or prototypical face because it is easier to classify as a face, Langlois suggests. In fact, she says, evolutionary pressures over the past several million years may have endowed humans with a built-in "beauty-detecting" mechanism that averages facial features. According to this scenario — which is admittedly difficult to test — humans have evolved to respond most strongly to the most prototypical faces, which most readily yield social information through such facial expressions as happiness or disgust.

On the other hand, people may acquire preferences for attractive faces early in infancy, when the ability to sort diverse stimuli into meaningful categories organized around prototypes is apparently already in place. For example, 6-month-olds respond most strongly to basic vowel sounds — the long "e" in the word "peep," for example — that adults perceive as the best examples of particular vowels. This suggests that specific speech sounds serve as "perceptual anchors" from infancy onward (SN: 7/15/89, p.37).

*W*hatever the case, the principle that averageness is a critical element of attractiveness prob-ably applies to as many as nine out of 10 people whose countenances are considered alluring, Berscheid says. Most exceptions may be individuals in the public eye, such as movie stars, whose appeal sometimes lies largely in perceptions indirectly linked to facial beauty, such as glamour and fame.

Langlois agrees, citing Cher as one such exception. Cher's facial features are clearly not average, but many people view her as attractive, Langlois says. Opinions about Cher's facial beauty are undoubtedly affected by her expressions in photographs, the youthfulness of her face, her glamorous image and numerous media reports describing her younger boyfriends, the Texas psychologist points out.

For similar reasons, raters might judge a sample of movie stars as more attractive than student composites, Langlois asserts. Further research is needed to investigate attractiveness factors that lie beyond the bounds of an absolute measure of beauty, she says.

In the meantime, those of us who muddle by without Cary Grant's ears or Elizabeth Taylor's nose can find solace in the suggestion that attractive faces are, in fact, only average.

And even Cher can take comfort. Neither Langlois nor anyone else has the faintest idea how to quantify charisma. □