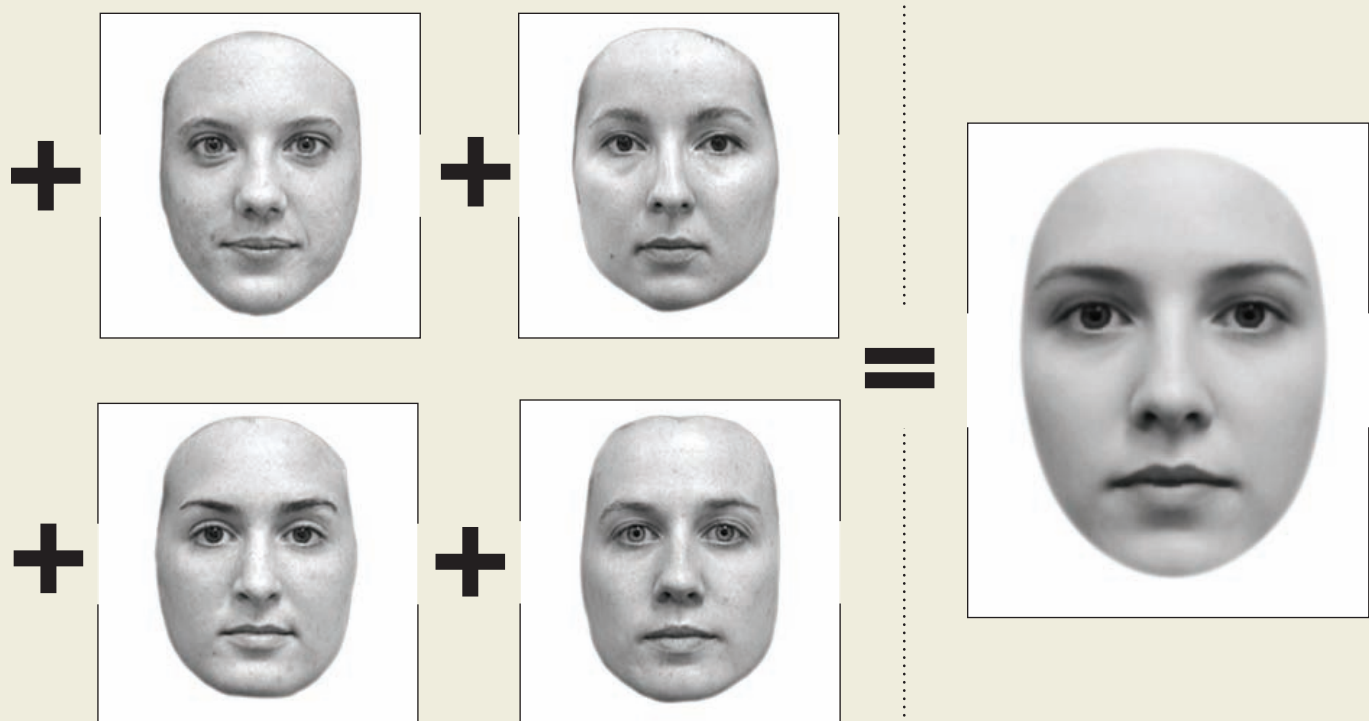


It's up to you

Using multiple photographs of students, Thomas Busey morphed (digitally combined and transformed) all the images together to create the composite face at far right. A professor of psychology and cognitive science at Indiana University Bloomington, Busey says, "Is the morph more attractive than the most attractive individual face? That's really up to the viewer to decide."

More than a pretty face

By Jeremy Shere



Images courtesy of Thomas Busey

I'm sitting next to Thomas Busey, a professor of psychology and cognitive science at Indiana University Bloomington, looking at a picture of supermodel Cindy Crawford on his computer. We're staring at Crawford's face, wondering the same thing.

"So what is it about Cindy Crawford's face that we find so attractive?" Busey says.

He's posing the question in response to the question I'd come to discuss with him: According to science, what makes one face more attractive than another?

Busey's question assumes a few things. First, we do indeed find Cindy Crawford's face attractive. And second, "we" accurately refers not only to Busey and me, but also to nearly everyone—an assumption amply supported by Crawford's long-term success as an internationally famous beauty icon.

And so I sit gazing at Crawford's undeniably attractive image, trying to come up with a plausible answer. It's easy to agree that Cindy Crawford is beautiful—but why? What, exactly, makes her so attractive in the eyes of so many?

It's a tough question, especially for those of us taught to regard concepts like "beauty" (as well as "truth," "gender," "intelligence," "good," "evil," and every other big idea) as cultural constructs foisted on us by corporations, governments, the military-industrial complex, Hollywood, and so on. According to cultural theory dogma, beauty is a chimera, a concept with

no fixed position or universal meaning.

And to some extent, this is true. Standards of beauty do change over time and differ from place to place and across cultures.

For cognitive scientists, though, "beauty" is significantly less pliable. Or, more accurately, for these scientists it's less interesting to think about beauty as an elaborate cultural contrivance than it is to decode in quantifiable terms how and why some human faces are more attractive than others.

So Busey and I sit, staring at Cindy Crawford. In this particular glamour shot, she's looking over her bare left shoulder, directly at the viewer (me). Her lips, painted red, are slightly parted in a generic sexy pout. Her skin is airbrushed to a flawless, peach-pink sheen. Long brown hair frames her face and high cheekbones. It's a beautiful face—there's no denying it. In fact, it's hard not to conclude that people would be struck by the beauty of this face anytime, anywhere.

But the question remains: What special qualities endow faces with such transcendent beauty?

"There is general agreement on which types of faces are most attractive," Busey says, after we've been studying Cindy Crawford for about five minutes. "There are lots of individual differences among attractive faces, of course, but we have been able to pinpoint certain broad facial features that, in a general sense, are viewed as the most attractive."



Cindy Crawford

Photo courtesy of www.sexygirls.com

seems even more apparent when you witness the magic of face morphing—a computer software trick that involves blending dozens of faces together to create a composite. The resulting face may be called typical insofar as it’s an average of all the faces used. Dozens of studies have shown that people rate morphed faces as more attractive than the individual faces used to make the blend.

SUPER SYMMETRY

There’s one problem with the “typical=attractive” hypothesis, though: namely that, despite the appealing faces at the center of Busey’s face collage and the results of face-morphing studies, attractive faces are actually anything but typical.

To explain, Busey clicks over to the Web site of David Perrett, a psychologist at the University of St. Andrews in Scotland, who is an expert on facial attractiveness. Perrett’s “laboratory” on the Web site includes information on a

Simply put, the more symmetrical a face is, the more attractive it appears. Dozens of studies and experiments have shown this to be true across cultures. The symmetry theory also goes a long way toward explaining the allure of Cindy Crawford’s face: With the exception of her famous beauty mark, her face—like the faces of nearly all supermodels—is highly symmetrical.

TYPICAL BEAUTY?

With a click, Busey minimizes Cindy Crawford and in her place appears a strange image: a sort of collage of bald male faces grouped in odd, misshapen clumps across the computer screen.

What we’re looking at, Busey explains, is the outcome of an experiment in which he showed participants pairs of faces and asked them to rate how similar or different the faces appeared. The ratings resulted in the face-collage of men on the screen. The faces break down into four rough categories—fat, thin, young, and old.

“The connection to beauty is that each group, defined by similarity relations, has a center,” says Busey, gesturing toward the faces near the middle of each clump. “What we test is whether those central faces, the ones that people considered to be most like other faces, or most typical, are also the most attractive.”

At a glance, it’s easy to see that the faces at the center of each group are, indeed, easier on the eyes than the faces at the fringes. The effect varies in intensity from group to group—the old/fat face group appears less attractive than the young/thin face group, as you might expect. But in each group, the faces at or near the middle are clearly the most attractive.

Typicality, then, is one possible explanation—the more typical a face is, the more attractive we deem it to be. This

number of experiments and links to interactive, face-based games. (One interaction lets you upload a picture of your face and transform it into faces of different ages and ethnic/racial types. I tried this and recoiled in horror at the image of my adult face rendered to look like a baby.)

In one revealing experiment, Perrett had participants rate 60 female faces for attractiveness, then morphed those faces to create an average prototype face. Then he did another morph, this time using only the top 15 most attractive faces among the original 60—let’s call it a supermorph. When he showed both morphs to the participants, a whopping 90 percent preferred the supermorph image.

In other words, a composite of only the most attractive faces was judged to be more beautiful than an average of all the faces. Combining the regular morph and the supermorph produced yet a third composite that participants found to be the most attractive of all—a super-supermorph.

The upshot, Busey explains, is that what is attractive about the supermorph and the super-supermorph is not that they are typical; after all, in these composite faces, superior attractiveness is over-represented. These faces aren’t beautiful because they look like most of the faces you see around you. What Perrett’s research suggests, and what seems true on a gut level, is that physical beauty is not synonymous with typicality. There’s something else at work in those facial supermorphs.

Busey invites me to look more closely, both at David Perrett's facial composites and, again, at Cindy Crawford's supermodel shot. Soon, with Busey's prompting, I begin to see it: The most attractive faces have parts—eyes, ears, noses, mouths, eyebrows—that are remarkably well-spaced. The most beautiful faces are also the most symmetrical—which is why the morphing process results in a composite face that is noticeably more attractive than the individual faces used to create it.

“When you morph faces and then morph the morphs to create supermorphs, the facial dimensions average out,” Busey says, indicating the perfectly aligned features of Perrett's supermorphed face. “Wrinkles blend away, making the face look younger and healthier.”

Scientists have widely embraced symmetry as the primary marker of facial beauty. Simply put, the more symmetrical a face is, the more attractive it appears. Dozens of studies and experiments have shown this to be true across cultures. The symmetry theory also goes a long way toward explaining the allure of Cindy Crawford's face: With the exception of her famous beauty mark, her face—like the faces of nearly all supermodels—is highly symmetrical. Flip through any fashion magazine or celebrity rag, and you'll find extraordinarily symmetrical faces. Dig out your high school yearbook, find a shot of the homecoming king and queen, and chances are their faces will feature a high degree of symmetry.

ATTRACTION MATTERS

Scientists think that we perceive symmetry as attractive mainly because it indicates genetic fitness. When it comes to the face, as with most body parts, our genes have two opportunities to express themselves—on our left side and our right side. So genetic expression resulting in a well-proportioned, symmetrical face somehow suggests a healthy physical package—one firing on all cylinders, so to speak.

But this argument for the seductions of symmetry is somewhat dicey. “At some point, you have to be careful about reducing everything to genetic fitness,” Busey says. Thanks to the ability to screen for genetic disorders, “modern medicine has virtually eliminated the problems that might come up with choosing an unattractive mate.”

Still, it remains plausible that when we judge one face to be more attractive than another, we're acting on ancient instincts regarding reproductive fitness that lead us to read facial symmetry as aesthetically pleasing. As Busey points out, “Do we ever complain that somebody has a face that's too symmetrical?”

But does it really matter how or why we perceive facial beauty? Some people are attractive, others less so. Most of the people we're around day-to-day are more or less average in appearance, and it doesn't seem to make much difference



Images courtesy of Thomas Busey

Before and After [LEFT] The “real” Thomas Busey, a professor of psychology and cognitive science in the College of Arts and Sciences at Indiana University Bloomington. [RIGHT] A perfectly symmetrical Busey, created digitally.

whether the guy in the cubicle next to yours has a face that's slightly more symmetrical than the woman down the hall, or whether your eyebrows are more artfully balanced than those of the barista taking your order at Starbucks.

Except that those things do matter, in ways large and small. Studies have shown that people seen as more attractive tend to earn more money and generally enjoy more success at work and in social situations. Other studies have revealed that teachers pay greater attention to the most attractive students.

How and why we judge one person or student or co-worker to be more attractive than another does matter, Busey says, because it has real consequences. Our reactions to facial symmetry may be mostly hard-wired, but by knowing that we're engineered to respond favorably to well-proportioned eyes and lips and noses, perhaps there's a chance we won't be tricked by nothing more than a pretty face.

JEREMY SHERE is a freelance writer in Bloomington, Ind.