

The Per-CVE (Perception of Color and Visual Esthetics) Study

For centuries, women have used an arsenal of products to color, camouflage and call attention to their face and hair, ultimately controlling their perceived beauty. Egyptian artifacts from as early as 1400 B.C. — including a woman's cosmetics box containing pots of makeup and vases of skin salves — provide clear evidence that cosmetics are not a recent invention or fad. From ancient to modern societies, cosmetics have held a solid place in cultures worldwide for good reason: color is powerful.

The power of color resides in the place where information sent from our eyes is processed: the brain. Instinctual behavior and learned attitudes are combined with judgments or beliefs, such as cultural traditions and personal experiences. Within a split second, all of the cultural, symbolic, experiential and instinctual information is processed in the brain and allows individuals to make judgments about people, situations and environments.

The impact on perceived attractiveness of humans due to attributes such as sexual dimorphism (exaggerated differences between male and female faces) and innate facial features has been studied for decades. But, there are very few scientific studies that examine the impact extended phenotype features (external factors that can change appearance), such as cosmetics, can have on perceptions of others or of ourselves. Considering the tremendous impact these perceptions have in the boardroom, the bedroom, the court of law, the voting booth, the classroom and anywhere an individual may need altruistic acts from strangers, the significance of this area of research cannot be understated. If by applying makeup women can, in fact, selectively alter perceptions of their personality traits, there could be greater rationale for their use.

Together with Nancy Etcoff, PhD., Assistant Clinical Professor at Harvard University and Associate Researcher at Massachusetts General Hospital Department of Psychiatry, P&G Beauty & Grooming conducted a first-of-its-kind study to fill this research void. The Per-CVE (**P**erception of **C**olor and **V**isual **E**sthetics) study is designed to determine how cosmetic colors and the psychology of color are linked to beauty perception, and to better understand how different styles of makeup impact perceived beauty and personality judgments.

Per-CVE Study Methodology

- The study was conducted in two parts with 100 high-resolution color images of 25 women, ages 20-50, who self-identified as Hispanic, Caucasian or African American.
 - A professional makeup artist applied three different makeup looks that provided increasing luminance contrast between the skin and facial features (informally labeled as "natural," "professional" and "glamorous").
 - A professional photographer shot the women displaying a neutral facial expression without makeup and with all three looks, under uniform conditions, and the photos were adjusted digitally.
- The first study included 149 adults (61 men, 88 women) of different ages and ethnicities who were shown the faces for 250 milliseconds.
- The second study included 119 adults (30 males, 89 females) of different ages and ethnicities who were given unlimited time to inspect each face.
- All participants saw the faces in a randomized sequence and rated them based on attractiveness, likeability, trustworthiness and competence.

Per-CVE Study Results

- When viewed at 250 milliseconds, all makeup looks increased not only ratings of attractiveness, but of competence, likeability and trust compared to ratings of the same faces with no makeup (all $p < .0001$).
- On longer inspections, this pattern was observed for two of the makeup looks (natural and professional, all $p < .0001$), but not for the third.
- Faces with the highest luminance contrast (glamorous) were judged to be significantly more attractive and competent (both $p < .0001$), but equally likeable, and less trustworthy ($p < .0001$) than the same faces without makeup.
- While most effects were positive, judgments of trustworthiness increased or decreased depending on inspection time and makeup look.

Results of the Per-CVE study confirm that features of the extended phenotype such as makeup application should be considered in future beauty perception research as it specifically impacts first impressions, both instantaneously and over longer inspections, of perceived intelligence, pleasantness and honesty. This demonstrates that women truly can control the way they want to be—and are—perceived.



Models without makeup and with makeup of increasing luminance contrast.

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