

Turning the other cheek: Portraits of doctors and scientists don't show a left-cheek bias

Doctors' absence of portrait-posing bias appears consistent with the important roles of emotional empathy (left-cheek poses) and scientific rationality (right-cheek poses) in medical practice.

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ABSTRACT: When posing for a portrait, most people offer the left cheek. Doctors, however, show no such asymmetric bias. Why? The answer appears to lie in the silent social signals communicated by the two sides of the face. Because the left hemiface is contralaterally controlled by the emotion-dominant right hemisphere, it is anatomically more expressive than the right hemiface. Research confirms that left-cheek portraits convey greater emotion and that people intuitively offer the left cheek when asked to express emotion. In contrast, people offer the right cheek when asked to conceal emotion, with right-cheek portraits judged to be more scientific. Doctors' absence of portrait-posing bias thus appears consistent with the important roles of both emotional empathy (left-cheek poses) and scientific rationality (right-cheek poses) in medical practice.

When posing for a portrait, most people adopt a *Mona Lisa* pose, offering their left cheek [Figure 1]. From Renaissance paintings¹ to high-school photos² to selfies uploaded

to social media,³ left-cheek bias is evident across time periods, irrespective of medium. However, unlike most of the population, portraits of doctors and scientists don't show a left-cheek bias.^{4,5} Given that the two sides of the face typically appear quite symmetrical and are equally likely to suffer blemishes or disfigurement, why would most people favor the left cheek, yet doctors appear unbiased? The answer may lie in the silent social signals communicated by the two sides of the face.

Left-cheek bias for portraits

Fifty years ago, McManus and Humphrey¹ first noted a left-cheek bias in portraits. Their examination of 1474 single-subject paintings, dating from the 16th to the 20th centuries, found that sitters were more likely to be depicted in left-cheek (68% female, 56% male) than right-cheek (32% female, 44% male) poses. The finding was sufficiently novel to warrant publication in *Nature* and has since been repeatedly replicated in other collections of painted⁶ and photographic portraits,² including selfies⁷ and photos uploaded to Instagram.⁸

McManus and Humphrey¹ offered numerous speculations to account for the asymmetric portrait-posing preference. Perhaps it reflects a mechanical bias? As most of the population is right-handed, right-handed artists may favor left-cheek poses because left profiles are easier to compose (smooth abductive arm movements



FIGURE 1. Portrait of Lisa del Giocondo by Leonardo da Vinci (1503–1506; Louvre Museum; public domain).

facilitate drawing a left-cheek profile in a single arc⁶). The artistic setup may also favor left-cheek poses, as right-handed artists hold their palette using the left arm and typically view the sitter over their palette rather than over their moving painting arm. Though intuitively appealing, subsequent research has ruled out such mechanical accounts, finding that the left-cheek bias persists across both left- and right-handed artists,⁶ is evident in photographic portraits,² and is reversed in artists' self-portraits.⁹

Alternately, the left-cheek bias could reflect a perceptual phenomenon: perhaps

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viewers prefer portraits showing models in left-cheek poses. Such a perceptual preference would be consistent with human cortical anatomy. The right hemisphere plays the dominant role in face processing, with the fusiform face area right-lateralized in most right-handers.¹⁰ When sitters are depicted in left-cheek poses, the majority of their facial features appear on the left side of the image, which projects immediately to the right hemisphere, enhancing face-processing efficiency. Again, however, research has ruled out this account, as it cannot explain why the left-cheek bias is reversed in artists' self-portraits^{6,9} or is stronger for females than males.¹ Instead, it seems there is something very special about the left cheek itself.

Emotion and the left-cheek bias

Having ruled out mechanical and perceptual accounts, Nicholls and colleagues⁶ offered a novel suggestion to explain why people favor their left cheek in portraits: emotion. As the lower two-thirds of the left

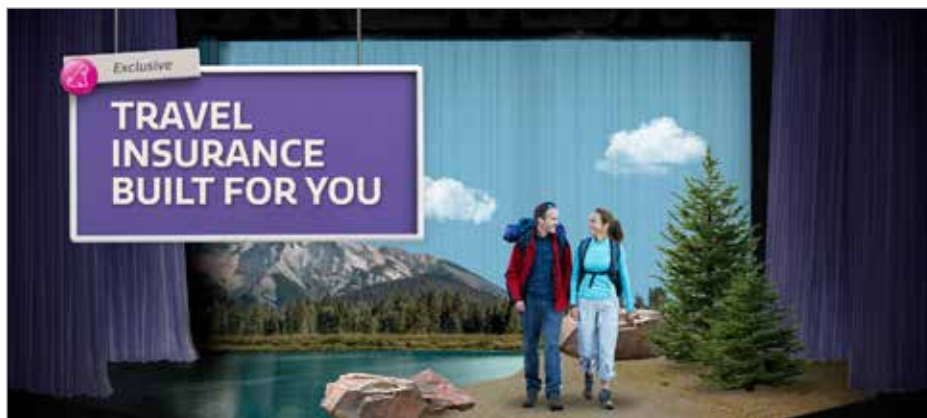
hemiface is contralaterally controlled by the emotion-dominant right hemisphere,¹¹ the left cheek is anatomically more expressive than the right¹² and moves more than the right cheek when we express emotion, irrespective of valence.¹³ Thus, whether smiling or sneering, the left side of the face is physiologically more expressive than the right.

Though few people are consciously aware that the left side of the face expresses stronger emotion, we appear to intuitively understand this anatomic asymmetry. When Nicholls and colleagues⁶ asked people to pose for a photo as a loving family member expressing as much emotion as possible, they offered the left cheek. Yet when asked to pose for a photo as a member of the Royal Society (the British fellowship of scientists and scientific academy), concealing as much emotion as possible so as not to appear smug or arrogant, people instead offered the right cheek. The fact that we offer the left cheek to express and the right cheek to conceal emotion implies an intuitive understanding that the left cheek is

more emotionally expressive than the right.

Given that the left hemiface is anatomically more expressive,^{12,13} left-cheek poses communicate stronger emotion than right-cheek poses. Research confirms that people perceive left-cheek portraits as more emotive and rate models in left-cheek poses as more emotionally expressive than identical models in right-cheek poses.^{14,15} Critically, this bias persists even when the portraits have been mirror-reversed, making a left-cheek pose look like a right-cheek pose and vice versa; the left cheek's greater physiognomic expressivity is evident despite perceptual manipulations.^{14,15} Thus, the relationship is bidirectional: people offer the left cheek to express emotion, and viewers perceive left-cheek poses as more emotionally expressive (see Lindell¹⁶ for a review).

Nicholls and colleagues⁶ consequently propose that emotion underlies the left-cheek bias for portraits. As social mores allow female expression of emotion but discourage similar male expression,¹⁷ males are less inclined to express emotion.¹⁸



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An emotion-based account thus explains why the left-cheek bias is stronger for females than males. Consistently, research shows that people who rate themselves as more emotionally expressive are more likely to pose offering the left cheek.¹⁴ An emotional account also explains the reversed bias seen in self-portraits:⁹ prior to the advent of photography, artists offering their left cheek to a mirror would see it reflected back as a right-cheek pose, explaining why artists show a left-cheek bias for portraits of others but a right-cheek bias for self-portraits.⁶ The left-cheek bias seen across media, from Renaissance paintings¹ to selfies uploaded to social media,³ is thus argued to stem from an underlying motivation to communicate emotion.

Doctors and scientists buck the trend

Scientists and doctors fail to follow the left-cheek bias for portraiture. Nicholls and colleagues first noted that the Royal Society's collection of portraits of scientists (featuring luminaries including Brahe, Einstein, and Newton) shows no cheek bias, arguably conforming to the "popular conception of scientists as unemotional logical rationalists."⁶ Subsequent research has shown that people in right-cheek portraits do appear more scientific;⁵ indeed, identical models are seen to look more like chemistry students when offering the right cheek and more like English students when offering the left cheek, even when mirror-reversed.¹⁹ Academics' web page portraits conform to these stereotypic expectations, with mathematicians, chemists, and engineers showing a right-cheek bias, whereas English academics offer the left cheek.²⁰ Thus, the cheek shown influences perceived academic specialization, with right-cheek portraits appearing more scientific.

How, then, do doctors pose? Do they favor the left cheek, enhancing emotional expressivity, or strengthen their scientific standing by offering the right [Figures 2 and 3]? Just like the scientists in the Royal Society,⁶ portraits of doctors show no cheek bias. Churches and colleagues⁴ examined

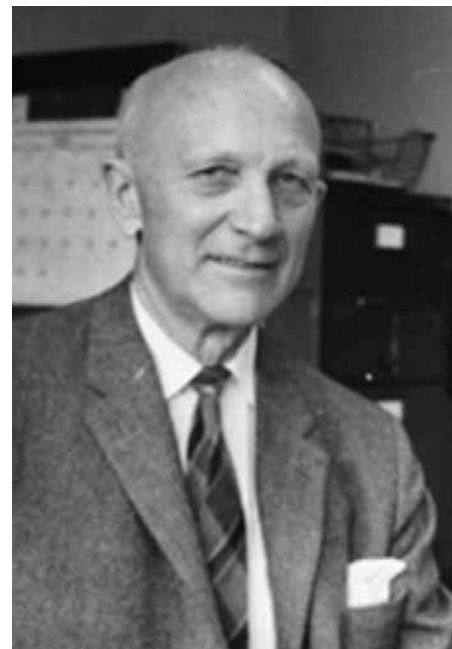


FIGURE 2. Neurosurgeon Wilder Penfield. **LEFT:** Portrait of Wilder Penfield, director of the Montreal Neurological Institute, 1934–1960. Date: 1934CA; type: NEG B/W (McGill University Archives; public domain). **RIGHT:** Portrait of neurosurgeon Wilder Penfield in 1958 (United States National Library of Medicine; public domain).



FIGURE 3. Physician Hippocrates of Kos (460–377 BC). **LEFT:** Portrait of Hippocrates from *Hippocratis Aphorismi*, König, Strasbourg, 1756. **RIGHT:** Engraving of a bust of Hippocrates by Paulus Pontius after P.P. Rubens *ex marmore antique*, 1638. Copyrighted work available under Creative Commons Attribution 4.0 International licence (CC-BY-4.0) <http://creativecommons.org/licenses/by/4.0/>. Wellcome Library, London. Wellcome Images; images@wellcome.ac.uk; <http://wellcomeimages.org>; HIPPOCRATES {460?-377 B.C.}.

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5914 web page portraits of “physicians and surgeons” available via the “Find a doctor” links on two large US health websites, with the portraits presumably chosen to present a strong first impression that helps patients select a doctor. While there is a common conception that surgeons are less emotive than physicians,²¹ portrait-posing biases for the two groups were no different, with neither surgeons ($N = 1288$) nor physicians ($N = 3392$) showing a cheek bias. Thus, doctors are distinguished by their lack of posing bias, unlike the vast majority of portrait collections.¹⁶ The absence of bias appears consistent with the important roles of both emotional empathy and scientific rationality in medical practice.

Conclusions

When posing for a portrait, the pose you adopt communicates more than your best side. Because the left side of the face is anatomically more expressive,¹² left-cheek portraits convey more emotion,^{14,15} while right-cheek portraits appear more

scientific.⁵ Although the majority of portraits show a left-cheek bias,¹⁶ doctors buck the trend, showing no bias.⁴ Depending on the impression you wish to convey, it may be time to turn the other cheek. ■

Competing interests


None declared.

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