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The Gravity of Weight

## The Super-Recognizers

Some people never forget a face.

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### KEY POINTS

- We use faces for recognition, but discriminating one face from another involves a network of brain regions.
- Super-recognizers are as good at remembering faces as those with face blindness are bad.
- Tests for face recognition can be administered online or in a lab but differ from real-life identification.
- Super-recognizers may have a role in person identification for law enforcement.



"The Return of Martin Guerre" is a film based on the true story of an impostor who comes to a small village and pretends to be someone he is not.

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In a small village in 16th-century France, Martin Guerre abandons his family, crosses the Pyrenees to fight for the king of Spain, and disappears "without a trace," leaving his wife "neither wife nor widow" (Davis, 1983).

Almost nine years later, a man claiming to be Martin Guerre comes to the village. Initially, he is welcomed by his wife and the townsfolk as he is well-informed "with accurate memories" about Martin's life. Eventually, over time, suspicions arise. This man is ultimately found to be an impostor

when the actual Martin Guerre, who had lost a leg in the war, returns with a wooden leg. The imposter, alas, though repentant, is sent to the gallows (Davis).

The story, based on historical facts (Davis), has been recounted through the generations. It has been fictionalized and adapted into a French film, *Le Retour de Martin Guerre* (1982), as well as the American one, *Sommersby* (1993.)

The time of Martin Guerre was one without photographs, identity cards, fingerprinting, birth certificates, or even regularly kept parish records (Davis). Surprisingly, the imposter's ruse lasted three years, though it was unknown when his wife suspected the truth.

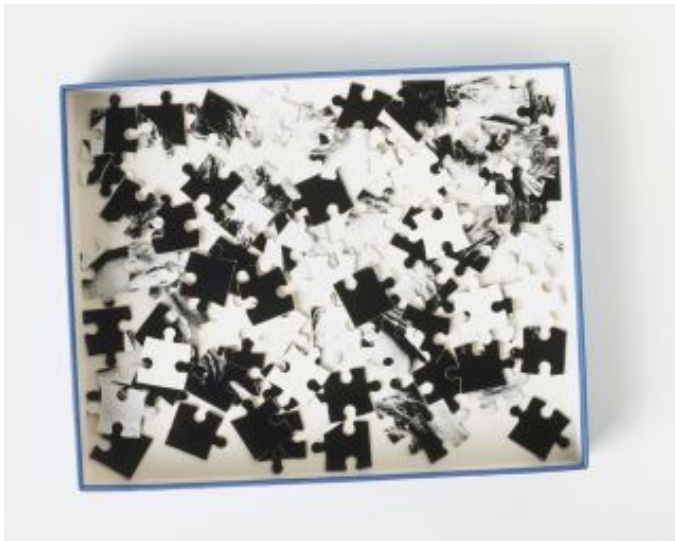
There are many ways people recognize each other. For example, when Odysseus, dressed as a common beggar, returns home to Ithaca after almost 20 years, his elderly nurse, Eurycleia, recognizes him from an old scar on his leg (Homer, *The Odyssey*, Book XIX).

The face, though, is generally the most important means of recognizing a person. *Recognition* is a "re-knowing" etymologically (OED). The ability to appreciate whether someone is familiar or not "is fundamental to our social functioning, a cornerstone of humanity" (Ramot et al., 2019). It involves retrieving and processing memories, experiences, and feelings, i.e., the "grammar of a face" (Belting, 2017).



"Yea, verily, thou art Odysseus; illustration from 'The Story of Greece' by Mary Macgregor. English artist: Walter Crane, 1913. Private collection. Eurycleia, Odysseus's elderly nurse, recognized him by a scar on his leg when he returned after almost 20 years.

Source: Photo credit: The Stapleton Collection/Bridgeman Images. Used with permission.



Jigsaw puzzle pieces replicating Albert Einstein's face, view from above. Our ability to recognize faces is complex and involves an integrated network of brain regions.

Source: Photo credit: Dorling Kindersley/UIG/Bridgeman Images. Used with permission.

We can gain considerable social information, including age, gender, attractiveness, mood, and even trustworthiness from a face. Further, it is a face that makes an unclothed body erotic; otherwise, body parts are merely anatomy (Karasu, 2017).

But a face can change with expression, lighting, and, of course, age. An oil painting portrait or a photograph can "suspend the flow of time" cross-sectionally (Belting), but even so, paint can crack or change texture and "develop a sense of history," and a photograph can fade (Weschler, 2023).

Oscar Wilde's Dorian Gray retains his

adonis appearance as his portrait ruthlessly ages, leading Dorian to spiritual and psychological ruin (Wilde, 1890).

There is considerable variability among the general population with respect to remembering and recognizing familiar from novel faces (Ramot et al.), with a strong genetic component (Dunn et al., 2020).

Those with *prosopagnosia* (i.e., face blindness), whether *developmental*, without evidence of any known lesion or neurological impairment, or *acquired* by trauma or disease, (Barton and Corrow, 2016; Russell et al., 2012), are particularly bad at faces. For them, faces lack familiarity, and they need to rely on other aspects, such as voice, clothing, patterns of gait, hairstyle, etc., to recognize someone (Karasu).

There are a select few, though, who never forget a face, i.e., who have "extraordinary face recognition," even when they have not seen a person in many decades. These are the *super-recognizers*, first identified by Russell et al., (2009).

"Overall, these 'super-recognizers' are about as good at face recognition and perception as developmental prosopagnosics are bad," wrote Russell and his colleagues. Neither Martin Guerre nor Odysseus would have fooled them.

What determines facial recognition?

*First-order information* involves distinguishing a face from other objects (i.e., face detection.) *Second-order information* refers to how one face differs from another (Taubert et al., 2011). Faces also have *configural properties*, such as the distance between our features and their placement relative to each other, as well as specific *featural properties* (e.g., eyes, nose, mouth) and *surface information*, including skin pigment and texture, or eye color (Tanaka et al., 2016).



"Tree of Life," by British artist Bryan Charnley, 1989.

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Discriminating one face from another is exceptionally complex; it involves a network of brain regions, including the fusiform face area, anterior hippocampus, inferior occipital gyrus, and the entire occipital-temporal region that integrate "visual, auditory, memory, and social circuits." The stronger the connections among these areas, the better subjects perform on facial recognition tests. (Ramot et al.).

In general, we perceive faces "holistically, i.e., as an "amalgamation" rather than as a "collection of discrete features" (Tanaka et al.). Researchers have found that super-recognizers tend to have a bias toward fixating on faces (i.e., *face salience*), which may facilitate social interaction and even extroversion (Linka et al., 2022).

They may also "sample more information" across a face than most people (Dunn et al., 2022), making use of all facial features, including the eyes, eyebrows, and mouth (Tardif et al., 2019). One study differentiated *critical* (e.g., lip thickness, hair, eye shape,



and color) from *noncritical* (e.g., mouth, skin color, nose) features in determining facial identification (Abudarham et al., 2021).



"The Lovers," by Belgian artist Rene Magritte, 1928. Museum of Modern Art. The face is one of the most important means of recognizing someone.

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Whether those who are super-recognizers are a distinct group or lie along a continuum remains open to question. Currently, there is "no fundamental definition or consensus" about diagnostic criteria, resulting in considerable heterogeneity in research findings (Ramon, 2021). Subsequent research will determine whether super-recognizers process facial information *qualitatively*, and not only quantitatively, in different ways. (Nador et al., 2021).

Tests such as *Before They Were Famous* and the *Cambridge Face*

*Memory Test* are often used as screening tools (Russell et al., 2009). More recently, the *UNSW Face Test* can screen for super-recognizers (Dunn et al., 2020). Tests administered online or in a laboratory setting, though, may differ substantially from "real-world" recognition, where there is additional information, including body shape, gait, facial motion, or even tattoos. (Bate et al., 2019).

Further, the cognitive basis for the unusual abilities of super-recognizers is "entirely unclear" (Ramon). For example, there are "key shortcomings that limit our understanding," particularly whether they can be useful in law enforcement (Ramon et al., 2019).

For a discussion involving forensic investigation, see Mayer and Ramon, 2023, and for differences in response latency and accuracy of response between super-recognizers and forensic examiners, see Towler et al., 2023.

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