

Acquired and hereditary prosopagnosia in history, fiction literature, biographies, and celebrities of the present

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Abstract

Prosopagnosia describes an inborn or acquired deficiency of face perception. In probands with this anomaly the ability to recognize even familiar faces is impaired, whereas faces expressing emotions, attractiveness and gender are clearly seen. In contrast to the acquired form, which is easily diagnosed by the sudden loss of a skill, the congenital form is mostly overlooked. Nevertheless, prosopagnosia is very common and almost always hereditary. The term prosopagnosia was introduced in 1947 by Joachim Bodamer, a psychiatrist. He described this phenomenon in soldiers suffering from head injury. Bodamer had also reviewed previous reports on this cognitive impairment. The oldest convincing report was presented by Wigan (1844) describing a man who is not able to remember faces. Once alerted to this phenomenon it is found by chance – sometimes hidden – in a variety of sources as in Lewis Carroll's poem Humpty Dumpty, in one of the poems by Eugen Roth (Germany), in a book review by Oliver Sacks, a neurologist, in autobiographies by Jane Goodall, known for her field studies with chimpanzees. Cases of diagnosed prosopagnosia further include Linus Torvalds, creator of the computer software LINUX, both the bestseller authors Lois Duncan and Heather Sellers, celebrities in live radio/TV programmes, and even one's own close friends. Almost all of the subjects think their problem is unique, and in cases with the very frequent hereditary form, nearly all of the affected individuals were not aware of other impaired first-degree relatives.

Key words: acquired prosopagnosia, congenital prosopagnosia, hereditary prosopagnosia, history, fiction literature, biography, celebrities

Introduction

Humans are extremely competent to recognize someone by the face alone. This high cognitive skill is very robust, very rapid allowing individualizing a face out of thousands of familiar and unfamiliar faces. In contrast, prosopagnosia is a specific inability to recognize familiar faces. The often-used synonym *face blindness* is misleading as the perception of human faces as such is preserved. It was thought that acquired prosopagnosia is rare familiar cases even more so, and for long only three reports about familial segregation were published clearly supporting the heredity of "non"-face recognition (De Haan 1999, Galaburda and Duchaine 2003, McConachie 1976). Thereafter an increasing number of cases with a congenital form, in the absence of any exogenous event, have been reported (first review by Behrmann and Avidan 2005). In 2006, we could show that prosopagnosia is a common cognitive dysfunction and one of the most frequent genetic disorders in humans (Kennerknecht et al. 2006). In contrast to the rare acquired form of prosopagnosia, the inborn form of prosopagnosia is among the most common anomalies in humans with a prevalence of around 2% worldwide (Bowles et al. 2009, Grüter et al. 2007, Johnen et al. 2014, Kennerknecht et al. 2006, 2021a). Highly interesting, these cases almost always run familiar (Kennerknecht et al. 2008a,b, 2011, 2021a). We therefore coined the term hereditary prosopagnosia (Schwarzer et al. 2006, Grüter et al. 2007, Kennerknecht et al. 2006, 2007, 2008a,b, 2021a). So far, there is no generally accepted standard for the designation of different types of prosopagnosia. The terms "congenital", "developmental" and "childhood" prosopagnosia were used differently in the past. However, these terms only take into account either the time of onset such as "congenital prosopagnosia" [Ariel and Sadeh 1996; Hasson et al. 2003; Behrmann and Avidan 2005], "childhood prosopagnosia" [Young and Ellis 1989], pathogenesis such as "developmental prosopagnosia" [McConachie 1976, de Haan and Campbell 1991, Temple 1992, Bentin et al. 1999, de Haan

1999, Jones and Tranel 2001, Nunn et al. 2001; Kress and Daum 2003, Duchaine et al. 2003], or the sequela of brain injury or encephalitis, such as “acquired prosopagnosia.” The term “congenital” only means present at birth; it defines the time of onset but not the etiology which could be hereditary (ab ovo) or acquired during delivery (e.g., perinatal asphyxia). The same goes for “developmental” or “childhood prosopagnosia” which may also be hereditary or acquired.

Once alerted to this fascinating topic, one will easily find more accounts of obviously acquired, congenital or hereditary forms of prosopagnosia when listening to the radio, watching TV, in biographies, fiction, and even among one’s own friends.

Materials and Methods

All sources and examples presented in the chapters *History, Fiction literature, Biographies, and Live celebrities* were found by chance.

The reports cited show that the affected individuals exhibit at least some of the following symptoms, which we consider to be diagnostic (Kennerknecht et al. 2021)

(1) Uncertainty in face recognition: The leading symptom reported by affected people is the irritating lack of confidence in the recognition of faces and the inability to memorize and recognize new faces easily. Other symptoms include the inability to recognize familiar people seen unexpectedly or in crowded places, confusing unknown persons with familiar persons. Anecdotal mentioning of none-recognition of people was not taken as a positive criterion however.

(2) Significantly prolonged recognition time of faces.

(3) Development of compensatory strategies as indicating a longstanding and frequent problem: (i) Adaptive behaviour to cope with the impairment of face recognition; persons with prosopagnosia rely heavily upon other personal characteristics such as voice, gait, clothing, etc.. (ii) Avoidance behaviour: avoidance of places where other people could be met unexpectedly, being first to arrive for an appointment in a restaurant, or looking absent minded whenever walking in the street; (iii) Giving explanations such as “Sorry, I have forgotten my glasses” or “I was absent minded”.

(4) Repeated anecdotal stories of events such as having overlooked familiar people were found to be extremely helpful. Persons with prosopagnosia also typically have problems in following the actors in a movie especially when the scenes change frequently or the characters are similar (e.g., mixing up different inspectors in detective/crime films).

Rational

It should be explicitly shown that prosopagnosia presents itself in daily life in manifold ways. Once the awareness for it is raised, it is easily spotted without systematic search.

Results and Discussion

History

The man behind the syndrome

Joachim Bodamer was born on 26th of June, 1910. He went to school in Stuttgart (Humanistisches Gymnasium). He studied medicine in Heidelberg, Berlin, and Munich. During his studies, he was also a scholar of Karl Jaspers and Nicolai Hartmann. At the Psychiatric Department Winnental in Winnenden – today, Zentrum für Psychiatrie Winnenden, Krankenhaus für Psychiatrie und Neurologie – and for a short time in Emmendingen near Freiburg/Breisgau, he worked as a neurologist and psychiatrist during which time, he wrote scientific papers on the intellectual history of psychiatry and on the pathology of the brain. In World War II. he served as a physician in Russia, France, and Bulgaria. It was then that he came across the phenomenon of acquired prosopagnosia when examining soldiers suffering from brain injuries. After the war he wrote several books on the spiritual situation of modern humans in the technological age. He died July 7th, 1985 in Stuttgart (*biography of Dr. Joachim Bodamer with friendly permission of the family*).

The term prosopagnosia was coined by Bodamer in 1947 referring to the Greek words prosopon (πρόσωπον) meaning “face” and agnosia (αγνωσία) meaning “not knowing or recognizing” (Fig. 1).

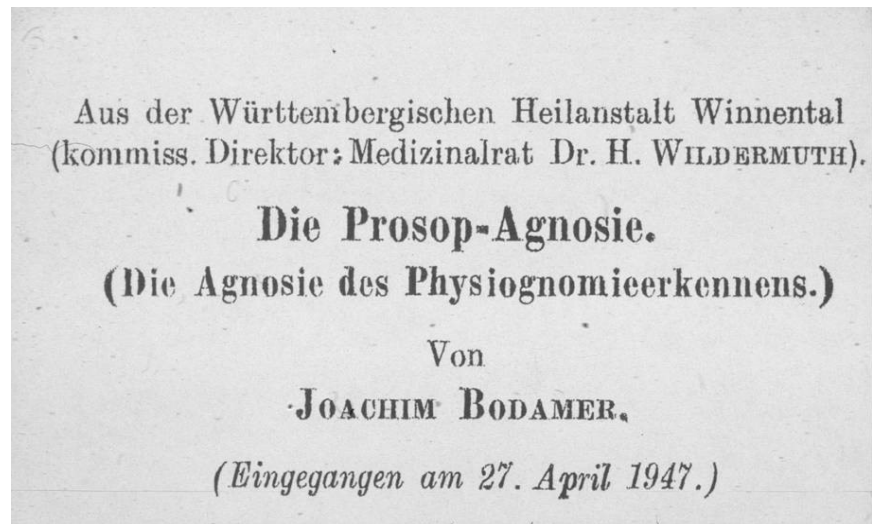


Figure 1. Portrait of Dr. Joachim Bodamer and title page of the paper introducing the term prosopagnosia (Portrait with friendly permission of the family).

One of the typical cases of acquired prosopagnosia as described by Bodamer (1947) and translated by Ellis and Florence (1990) are quoted in the following:

17.1.45. . . . He cannot pick out one of two nurses who are similar, in e.g. outline and dress but different in age and facial appearance, when they are motionless and silent; only when one smiles and he notices her unusually white and regular teeth can he distinguish between them. Before, although he could see all the details of both faces, he could not tell which was the nurse he was supposed to pick out. An experiment was performed with his own wife and some hospital nurses all dressed in uniform—all were roughly of the same size and figure and remained still and quiet. The patient was told to pick out his wife—at first he could not do so for five minutes. Another attempt was made—after passing on to the next lady, he went back and picked out his wife—he said something in her eye expression was known, familiar to him. The patient, faced by his own reflection, noticed the almost imperceptible difference between the left and right sides of his face, . . . but thought his face has changed in a strange way. “Strange . . . I’ve looked at myself often, now, because I look funny, that’s not me any more, although I know that it’s me, but I have a feeling of unfamiliarity”. A, like S, never recognised a portrait previously seen, by the face alone. Again, in looking at a face, he saw clearly only a patch a bit bigger than the eyes, the rest was blurred. A was also attracted by the eyes of unknown faces.

Bodamer even goes back to classical antiquity and here to writings by Thucydides (*The Peloponnesian War*, Book II,49) and by Hippocrates (*On the sacred disease*) to find narratives that may be associated with prosopagnosia. Also Seneca and Hippocrates have been occasionally cited in the context of prosopagnosia (de Haan 1999, Lerner 2004). There is still debate about which infectious agent might have been responsible for the Athenian plague. Furthermore, the plague, epidemic typhus, even Ebola have been discussed (Holden 1996). As was already delineated by Bodamer (1947) and de Haan (1999), the very systematic account of the symptoms given by Thucydides provides evidence for agnosia but not for prosopagnosia.

“For the disorder first settled in the head, ran its course from thence through the whole of the body, and, even where it did not prove mortal, it still left its mark on the extremities; for it settled in the privy parts, the fingers and the toes, and many escaped with the loss of these, some too with that of their eyes. Others again were seized with an entire loss of memory on their first recovery, and did not know either themselves or their friends. (Thucydides, Book II, 49) from Thucydides. The Peloponnesian War. London, J. M. Dent; New York, E. P. Dutton. 1910).

In a letter addressed to his friend Lucilius Seneca the Younger (4BC–65AD) describes an agnostic woman being unaware of her blindness.

"You know that Harpastes, my wife's fatuous companion, has remained in my home as an inherited burden ... This foolish woman has suddenly lost her sight. Incredible as it might appear, what I am going to tell you is true: She does not know she is blind. Therefore, again and again she asks her guardian to take her elsewhere. She claims that my home is dark." (Seneca, Liber V, Epistula IX) (from Bisiach and Geminiani 1991).

It is difficult to find a similarly clear description on agnosia by Hippokrates' *On the Sacred Disease*, said by Bodamer (1947) who simply referred to chapters 14 and 16 without citing the text. Hippokrates explains that the brain is associated with cognition:

Chapter 14, *Men ought to know that from nothing else but the brain come joys, delights, laughter and sports, and sorrows, griefs, despondency, and lamentations. And by this, in an especial manner, we acquire wisdom and knowledge, and see and hear, and know what are foul and what are fair, what are bad and what are good, what are sweet, and what unsavory; some we discriminate by habit, and some we perceive by their utility.*

Chapter 16, *In these ways I am of the opinion that the brain exercises the greatest power in the man. This is the interpreter to us of those things which emanate from the air, when the brain happens to be in a sound state. But the air supplies sense to it. And the eyes, the ears, the tongue and the feet, administer such things as the brain cogitates. For in as much as it is supplied with air, does it impart sense to the body. It is the brain which is the messenger to the understanding. For when the man draws the breath into himself, it passes first to the brain, and thus the air is distributed to the rest of the body, leaving in the brain its acme, and whatever has sense and understanding* [translated by Adams (1849), highlighted by I.K.]

The first well-documented clinical descriptions of agnosia were presented by Quaglino in 1867. Della Sala and Young (2003) refer to Quaglino's observations which demonstrate typical characteristics of prosopagnosia and of accompanying agnosias. All of these cases have in common that they are acquired by traumatic events or strokes.

Clinical observation by Antonio Quaglino:

*Mr. LL, a 54-year-old bank clerk from Turin, a strong and healthy man...on February 28th, 1865...fell unexpectedly to the floor, unconscious... He recovered after several days, but he was blind in both eyes and paretic on the left side. The hemiplegia slowly improved over one month. His sight also began gradually to improve thanks to the use of the waters of St. Vincent that he drank at the resort. I examined him a year after his stroke. Mr. LL appeared in good health and his left side strength and sensation were as good as those on the right. However, his heartbeat was a-rhythmic. At this stage, his near and far vision was excellent, and he could read even the smallest characters extremely well. As he joked, he could have hunted the tiniest birds from the tops of the trees. The macula was unharmed in both eyes, yet he could not clearly discern objects presented to his left side (left hemianopia). However, what dismayed him most was that no sooner had he got out of bed, he saw the faces of all people as doughy and whitish. Moreover, of all colours he could only distinguish white and black. Having presented him with a series of large characters in various colours, in fact, he failed to name any of the colours. Questioned as to whether this defect was congenital, he confirmed that before his stroke he had always had a clear and distinct perception of all the colours. **He had also noticed that he had completely lost the ability to remember faces, the facades of houses, and familiar scenes¹. In a word, he had lost all the shapes and the configurations of things.** I remember, he said, the names of my friends, I recognise them when I meet them, but as soon as they have turned their backs to me, I no longer recall their features* [translated by Della Sala and Young (2003), highlighted by I.K.].

Della Sala and Young (2003) cite an even earlier report by Wigan (1844) describing a man who was not able to memorize faces. This is so far the oldest convincing report on the disorder of face perception. Notably, in this case there was neither a mental picture of anything. As to our experience, the latter is an almost obligatory finding in congenital prosopagnosics (Grüter et al. 2006):

Among the curious defects in the functions of the brain, is one which was brought to my notice a short time ago: A gentleman of middle age, or a little past that period, lamented to me his utter inability to remember faces. He would converse with a person for an hour, but after an interval of a

day could not recognise him again. Even friends, with whom he had been engaged in business transactions, he was unconscious of ever having seen. Being in an occupation in which it was essential to cultivate the good-will of the public, his life was made perfectly miserable by this unfortunate defect, and his time was passed in offending and apologizing. He was quite incapable of making a mental picture of anything, and it was not till he heard the voice, that he could recognise men with whom he had constant intercourse. He was not at all fanciful in the matter, but always in a state of alarm lest he should lose the sense of sight, imagining that the disorder or disease lay in that organ alone. When I inquired more fully into the matter, I found that there was no defect in vision, except that his eyes were weak, and that any long continued employment of them gave him pain. There was no appearance of that morbid vanity which induced a person to affect peculiarities of constitution, but on the contrary, a strong desire to conceal his defect from the world. I endeavoured in vain to convince him that an acknowledgment of the defect would be the best means of removing the unfortunate effect it had produced in alienating friends. He was quite determined to conceal it, if possible, and it was impossible to convince him that it did not depend solely on the eyes (Wigan 1844).

As early as in the bible, in the well known Gospel passage by the evangelist Luke on the road to Emmaus it reads that the disciples recognized Jesus only by the breaking of the bread which may suggest impaired perception.

This can be interpreted from various point of views, e.g. the story may tell us that we are companions in the pilgrimage of a disoriented and disillusioned humanity. From the perspective of neurocognition this might be seen as a "transient" e.g. psychogenic expression of prosopagnosia. Transient prosopagnosia is not an established term, but occurs regularly e.g. when one awakens from anesthesia and does not initially recognize faces.

Pilgrimage to Emmaus (Luke 24:13-35)

¹³ Now on that same day two of them were going to a village called Emmaus, about seven miles from Jerusalem, ¹⁴ and talking with each other about all these things that had happened. ¹⁵ **While they were talking and discussing, Jesus himself came near and went with them,** ¹⁶ **but their eyes were kept from recognizing him.** [...].

²⁸ As they came near the village to which they were going, he walked ahead as if he were going on. ²⁹ But they urged him strongly, saying, "Stay with us, because it is almost evening and the day is now nearly over." So he went in to stay with them. ³⁰ **When he was at the table with them, he took bread, blessed and broke it, and gave it to them.** ³¹ **Then their eyes were opened, and they recognized him;** and he vanished from their sight. ³² They said to each other, "Were not our hearts burning within us while he was talking to us on the road, while he was opening the scriptures to us?"

³³ That same hour they got up and returned to Jerusalem; and they found the eleven and their companions gathered together. ³⁴ They were saying, "The Lord has risen indeed, and he has appeared to Simon!" ³⁵ Then they told what had happened on the road, and **how he had been made known to them in the breaking of the bread.**

[Access 23.3.2020, <https://www.oikoumene.org/resources/documents/luke-2413-35-pilgrimage-to-emmaus-by-guido-dotti>, highlighted by I.K.]

Fiction literature

The phenomenon of prosopagnosia also found its entry into works of fiction, sometimes not being aware of it.

Lewis Carroll (January 27, 1832 - January 14, 1898)

In *Through the looking-glass and what Alice found there* (1871) Humpty Dumpty is suggestive of being a prosopagnosic (Larner 2004):

"The face is what one goes by, generally," Alice remarked in a thoughtful tone. "That's just what I complain of," said Humpty Dumpty. "Your face is the same as everybody else has - the two eyes, so -" (marking their places in the air with his thumb) "nose in the middle, mouth under. It's always the same. Now if you had the two eyes on the same side of the nose, for instance - or the mouth at the top - that would be some help."

Also the following self-descriptions by Lois Duncan (1982) and Linus Torvalds (1969) are clearly suggestive of an inborn form of prosopagnosia, whereas the diagnosis itself is obviously unknown to the autobiographers:

Lois Duncan (April 28, 1934 – June 15, 2016)

As a bestseller author - formerly known by Anglo-American teenagers - she writes in her autobiography *Chapters: My Growth as a Writer* (1982):

"If I meet someone new and analyze his looks, telling myself, "He has red hair and freckles and a hook nose," I will remember the description, but I won't be able to bring to mind a picture of the face. If two people fit the same description, I'm lost. I can't tell them apart. This may sound like a minor problem, even an amusing one, but it can make life a nightmare. My first year in junior high school, I built a reputation as a snob because I never spoke to people in the halls or lunchroom. I wasn't sure enough of their identities to risk it. What if I thought I knew them and really didn't. What if I called them by the wrong names? I had the same problem with teachers. I can recall one traumatic occasion when Mr. Strode, the principal, stuck his head out into the hall as I was passing and said, "Lois, if you're headed for the lunchroom, would you please ask Mrs. Romero to stop by my office for a moment?" Mrs. Romero was my math teacher. She had brown hair and glasses. Miss Jacobis, my science teacher, also had brown hair and glasses. When I reached the cafeteria, two women with glasses and brown hair were sitting together at one of the tables. Despite the fact that I had taken classes from them for a whole semester, I couldn't tell them apart. (pp 31-33)

Linus Torvalds (born December 28, 1969)

The creator of the freely distributed computer software LINUX™, used by millions of private people as well as by large companies, wrote in his autobiography *Just for Fun. The Story of an Accidental Revolutionary* (Torvalds and Diamond 1969):

There is a talk about Linus' poor memory and his inability to remember faces. "If you've watching a movie with him and the hero changes his shirt from red to yellow, Linus will ask, "Who is this guy?" " says Sara" (p. 69) [his sister, annotation by I.K.]

Indeed, many prosopagnosics get lost in movies either when actors change their clothing frequently or when all of them are dressed the same:

Thommie Bayer (born April 22, 1953)

He writes in his German novel "*Singvogel*" (2005) about a friend (which is most probably himself):

*She hates it when I sit in front of the TV. She doesn't accept my argument that I watch TV for a living, just as she never accepts anything that runs counter to her view of things. She ostracizes me like a normal couch potato and thinks she's better than me because she doesn't need the stupid medium of television. **Yet she simply can't concentrate.** That's the secret of her abstinence. **She can't tell the characters apart. Because of people like her, you always have to cast a blonde and a brunette. Two leading roles with the same hair color forbidden.** (pp 37, 38)*

[Highlighted by I.K., translated with www.DeepL.com/Translator (free version)]

Notably the author is not aware of prosopagnosia. He just thinks of poor concentration.

Others know of their diagnosis:

Oliver Sacks (July 9, 1933 – August 30, 2015)

He is a neurologist, widely known for his book "*The man who mistook his wife for a hat*" (Sacks 1985). His above-mentioned book certainly does not deal with prosopagnosia. However, he outed himself in a book review from Campbell Books Publisher (ed.), *Mental lives: Case studies in Cognition*, 1992, as a prosopagnosic:

"... and (for rather personal reasons, perhaps) one of my favorites, a case study by Christine Temple of a "Dr. S." a gifted but agnosic psychoanalyst who is completely unable to

recognize any faces or places - the description of Dr S. is quite marvellous, and made me think I was reading about myself!" (Sacks 1993).

Oliver Sacks also diagnosed Jane Goodall - famous for her field studies with chimpanzees in Tanzania - when she addressed her problem to him.

Jane Godall (born April 3, 1934)

She writes in *"Reason for Hope: A Spiritual Journey"* (Goodall and Behrman 1999) that she and her sister are prosopagnosics thus giving ample evidence for the hereditary form:

"In the course of my travels, one thing detracts from my enjoyment of meeting people. I suffer from an embarrassing, curiously humbling neurological condition called prosopagnosia, which, translated, means I have problems in face recognition. I used to think it was due to some mental laziness, and I tried desperately to memorize the faces of people I met so that, if I saw them the next day, I would recognize them. I had no trouble with those who had obvious physical characteristics -- unusual bone structure, beaky nose, extreme beauty or the opposite. But with other faces I failed, miserably. Sometimes I knew that people were upset when I did not immediately recognize them -- certainly I was. And because I was embarrassed, I kept it to myself. Quite by chance, when talking to a friend recently, I found that he suffered from the same problem. I could not believe it. Then I discovered my own sister, Judy, knew similar embarrassment. Perhaps others did, also. I wrote to the well-known neurologist Dr. Oliver Sacks. Had he ever heard of such an unusual condition? Not only had he heard of it -- he suffered from it himself! And his situation was far more extreme than mine. He sent me a paper, titled "Developmental memory impairment: faces and patterns," by Christine Temple. Even now that I know I need not feel guilty, it is still difficult to know how to cope -- I can hardly go 'round telling everyone I meet that I probably won't know them from Adam the next time I see them! Or maybe I should? It is humiliating, because most people simply think I'm making an elaborate excuse for my failure to recognize them and that, obviously, I don't really care about them at all -- so they are hurt. I have to cope as best I can -- usually by pretending to recognize everyone! And while that can have its awkward moments too, it's not nearly as bad as the other way around. "

Interestingly, Jane Godall can recognize her chimpanzees individually, which clearly demonstrates the human face specificity of this cognitive deficit. This is also supported by an observation by McNeil and Warrington (1993). A 51-year-old patient who developed a profound prosopagnosia after a stroke became a shepherd thereafter and learned to recognize and name many of his sheep. There are also reports of prosopagnosia including animal face agnosia. In case of an acquired form, e.g. after vascular episodes, it shows that the degree of brain deletions varies considerably and additional deficits might arise. Bornstein et al. (1969) describe a 58 year old farmer who after having lost consciousness temporarily could no longer recognize familiar faces neither those of individual cows and calves. Before this event he was able to recognize them instantly, even when the calves were growing.

Luciano De Crescenzo (August 18, 1928 - July 18, 2019)

He is an Italian writer, film actor, director and engineer. He published a long series of books, including novels and popularizations of philosophy. Obviously, he suffered from acquired prosopagnosia and confessed to have been struck some years ago by a mysterious disease of the brain, 'prosopagnosia'. One of his typical behavioral strategies include giving a charming smile when entering a room crowded with people, thus conveying the idea to be complacent with all. [Access 2.5.2021, https://en.wikipedia.org/wiki/Luciano_De_Crescenzo]

Heather Sellers (born September 16, 1964)

Her writings cover a large spectrum of nonfiction, fiction, poems, and craft. With her memoir, *You Don't Look Like Anyone I Know* she gives an insight into her experience with prosopagnosia. Brad Duchaine, a psychologist at Harvard University, diagnosed her (p. 323).

The blurb already summarizes the characteristic indicative symptoms of prosopagnosia which are ascertained in exactly the same expression in very different ethnic groups worldwide (Kennerknecht et al. 2021):

[...] Growing up, unaware of the reason for her perpetual confusion and anxiety, she took what cues she could from speech, hairstyle, and gait, but often failed to recognize her boyfriend, her parents, even her own image.[...]

Typical experiences expressed in the text would include e.g.

You saw me, "he said" "You were looking right at me. And then you just walked right past me like I was a stranger." (p. 33)

And then I saw her shoes. Those boxy white shoes. How could I not have recognized my own mother?" (p. 36)

An example of strategies reads as follows:

" ... This is a real engagement with life, and you have to tell people now, I'm face-blind. [...] There's no crisis in face blindness. It's just a plain, simple, clear thing. Would you please tell people?" (p. 305)

Unless her prosopagnosia was diagnosed she had severe problems with her family

My whole life, my mother and father had pushed the theory that something mental was wrong with me: ... (p. 306)

[Access 2.5.2021, <http://www.heathersellers.com/>]

Others who are thought to be prosopagnosics are surely not, e.g.:

Anton Räderscheidt (October 11, 1892 – March 8, 1970)

He was a German painter and supposedly prosopagnosic (Mir Fullana 2005). Yet he suffered from anosognosia following a right hemisphere stroke. Anosognosia occurs very frequent and is found in 30% of patients with right sided strokes (Stone et al. 1993). As many of the anosognosias, Anton Räderscheidt had agnosias for parts of visual space. This is not part of prosopagnosia as faces as such are clearly seen. And most important it is nowhere mentioned that he could not recognize familiar people. His hemispatial neglect and his recovery is impressively documented by a number of successive self-portraits leaving the left side of his face (i.e. contralateral to the cerebral stroke) blurred. Similar phenomena are also seen in other artists (Chatterjee 2004).

Biographies

Live broadcasting programmes

I came across one of my first subjects with hereditary prosopagnosia by chance when tuning into a live German program. The lady was selected from a panel of active listeners and given the chance to create the title of a live broadcasting program and to take part in one topic based on her ideas. The title given by her was "Von Menschen und Macken" (literally translated "Of people and quirks") saying that she was thinking of just having a quirk or an obsession. Not knowing at that time that she was a prosopagnosic, she introduced herself in the radio program that her problem could be best described by a poem from Eugen Roth (German poet, born January 24th, 1895 in Munich; died April 28th, 1976 in Munich):

Die guten Bekannten

*Ein Mensch begegnet einem Zweiten.
Sie wechseln Förm- und Herzlichkeiten,
Sie zeigen Wiedersehensglück
Und gehn zusammen gar ein Stück.
Und während sie die Stadt durchwandern,
sucht einer heimlich von dem andern
Mit ungeheurer Hinterlist
Herauszubringen, wer er ist.
Daß sie sich kennen, das steht fest,
Doch äußerst dunkel bleibt der Rest.
Das Wo und Wann, das Wie und Wer,
Das wissen alle zwei nicht mehr,*

*Doch sind sie, als sie nun sich trennen,
Zu feig, die Wahrheit zu bekennen.
Sie freun sich, dass sie sich getroffen;
Jedoch im Herzen beide hoffen,
Indes sie ihren Abschied segnen,
Einander nie mehr zu begegnen.*

The essentials of this poem are that two men meet somewhere in a town. They walk together along the street but cannot find out who the other one is, although both are certain that they know each other. Finally, they are happy to have met one another but both hope never to meet again.

I came into contact with this lady shortly after the broadcasting and ascertained that she is a congenital prosopagnosic. Anecdotal stories of her problems are very typical for a prosopagnosic:

"On my 2nd school day my class changed the class room. When I wrongly went to the old class room I did not recognize that there were other class mates and another teacher."

"Whenever I fixed a date with a friend in a restaurant, I had a problem recognising him. I never knew what he looked like and I was always happy when he gave me a sign. I even have a problem recognising my husband in a crowd when I do not know how he is dressed and especially when he does not approach me."

Internet inquiry

Later I have met many prosopagnosics by feedback to www.prosopagnosia.de, all of them with highly characteristic anecdotal stories. Four exemplary self-reports are given below (more reports in Kennerknecht and Trostmann 2022; for German original version see Kennerknecht 2022):

K.B., female, 20 years

I can very well follow movies with actors whom I have already seen in several movies and who do not change their appearance much during the movie or between individual movies. Otherwise it is the voice which becomes more decisive for me in order to recognize the character.

I have only a few friends. When I know that they will be in front of the university's lecture hall every morning, then I go to meet them there knowing it is them. Even if there is a noticeable change in their appearance or when they come towards me, I can recognize them well, whereas the latter has more to do with their movement and gait. In other circumstances I do not recognize them. I am often asked why I do not greet them back or why I simply pass by.

I orientate myself more by unusual things in and around the face, like particular jewelry, birthmarks, hair, eye-catching glasses (pattern, color, shape), than by the mere face.

When I meet someone somewhere unexpectedly it takes me a long time to recognize the person. However, it is much easier if I expect someone to be at a certain place at a certain time knowing that the person to meet also expects me, and approaches me by smiling, waving etc.

Within my family frequently tensions arose when I passed by them without greeting. Two examples: When all of my family walked by on the other side of a one-lane road and I didn't recognize them. Once my brothers run past me by half a meter only and I didn't recognize them. In the house, though, I recognize everyone immediately, because I know they live there and it's no one else. In addition, there are also things like gait, hair, and clothing.

F.M., female, 30 years

People often greet me or speak to me who I cannot really place. In larger crowds I find it very difficult to make out friends or acquaintances. When someone asks me to describe another person, I usually relate to height, hair color and possibly glasses.

Until I read more about prosopagnosia about a year ago (rather by accident), I accepted the condition as lack of concentration or scatterbrainedness, because once I get to know people better, I recognize them even in fortuitous encounters. Actually, I have been able to live with this situation quite well so far, albeit sometimes somewhat unpleasant, for this is how it has been all my life.

Lately, I feel relieved by the thought that this condition has nothing to do with bad memory.

B.G., female, 42 years

It would be a great relief for all affected parties if prosopagnosia was more widely known. It can become laborious to explain the facts to some extent. Usually a counterpart immediately tries to reassure by saying "I have that, too, I can never remember the names either." Then it always troublesome to explain that you cannot remember the names, but the people (in terms of appearance). In daily life, sometimes this can be very stressful. If one moves or has a job in which one has to interact with many different people, but finally is confident of recognizing them after years (hospital, school, politics etc.), then any change can become a strong handicap irritating affected persons and their counterparts and slowing down normal careers considerably.

Just two days ago I had an interesting experience: Three years from now a huge song contest will take place in our country, at which thousands of singers are to participate. Since I am involved in the local women's choir, I had to attend a preparatory meeting. Also present at this meeting were three people from the national level of the "singing hierarchy" whom I already knew from several meetings. When I entered the room and looked, I did not notice them (I did not recognize them). It was only when the main speaker greeted them and announced their names that I "saw them."

S.H., female, 50 years

I came up with a rather vivid comparison of what prosopagnosia feels like.

When you get to know someone, you see the face as a whole, but you do not succeed in memorizing this image as a whole. At best, one remembers details, such as a particular mouth shape, nose, hairstyle or expression (look in one's eyes). Mostly or only such features are somehow distinctive.

However, these details are not particularly suitable to identify a person immediately and without any doubt at a next encounter. To lay emphasis on "immediately" - as described, means that it may "dawn" after some time. The inner picture then becomes clearer and clearer, the face appears more and more familiar. For spontaneous meetings this late recognition is of no use, unfortunately. And an emphasis on "without a doubt" - expresses that the individual features are just not as clear as an overall picture, therefore one often confuses people of a similar type or is not sure whether someone is Mr. A or maybe Mr. B.

For a better understanding you can compare it to a finished puzzle which is shown to you for a few seconds only. Thereafter 80 to 90 percent of the pieces will be taken away. Since the remaining pieces do not make that much sense on their own, details are also easily forgotten. You can try to actively "learn" them, but ~~still~~, the next time you meet you have only a few puzzle pieces to match and not the whole picture.

This came to my mind while listening to the radio, when Madonna sang and I thought to myself that I actually recognize Madonna only by the gap between her teeth.

Celebrities

As prosopagnosia is very common it is not surprising that with time more and more outcomes among celebrities will be published. One of the first prominent persons reported in magazines was Victoria, Crown Princess of Sweden. Wikipedia has even set up a page entitled *People with prosopagnosia, or "face blindness."*

Duncan Bannatyne

Dave Chalk (entrepreneur)

Chuck Close

Paul Foot (comedian)

Stephen Fry

Jane Goodall

John Hickenlooper

Karl Kruszelnicki

Markos Moulitsas

Ken Nakayama

Oliver Sacks

Robert Gascoyne-Cecil, 3rd Marquess of Salisbury

Mary Ann Sieghart

Victoria, Crown Princess of Sweden

Jim Woodring,

Steve Wozniak

[https://en.wikipedia.org/wiki/Category:People_with_prosopagnosia; access 18.3.21; Date of page creation: August 14th 2010]

One of these celebrities, Chuck Close, is of special interest. Unexpected for a prosopagnosic he is famous for his large-scale photo realism portraits. “[...] Close has said, “*I was not conscious of making a decision to paint portraits because I have difficulty recognizing faces [...]*” [https://en.wikipedia.org/wiki/Chuck_Close, access 3.5.21].

I first saw his art in an exhibition in Aachen/Germany. In the accompanying booklet, an interview reveals typical aspects of being a prosopagnosic:

Chuck Close in conversation with Richard Shiff; New York, August 23, 2006, in Close C. (2007).

[...]

RS *When you meet someone in everyday life, do you focus on a part of their face that you find particularly intriguing?*

CC No.

RS *So it doesn't work that way.*

CC *Exactly. That's why I only paint family members, friends and acquaintances. I generally don't take commissions, and I don't paint college presidents or board chairmen. I paint people who are important to me personally. I have to have a relationship with them, they have to be family or close friends, or else artists I feel connected to through their work. So my paintings are very important to me. For other faces, no matter how interesting they may be, I really have no memory. For example, I could spend the whole evening at an event at the Museum of Modern Art sitting across from a really fascinating person and talking to her at length. Afterwards, I'm sure I'd know that her daughter went to Yale and her husband works at Goldman Sachs. By the end of the evening, I would know everything about her. I could fill out an application form for them. But then if I meet that person on the street, even the very next day, I wouldn't be able to say that I spent an entire evening looking at their face. I wouldn't even have a memory of ever seeing her at all. [...]*

[Derived from: Chuck Close (2007). Exhibition May 26 - September 02, 2007, Ludwig Forum für Internationale Kunst, Aachen: *Chuck Close, erwiderte Blicke, Portraits 1996 – 2006*. German-language text collection of the contributions from the catalog *Chuck Close, Paintings 1986/2006*

Translated from German with www.DeepL.com/Translator (free version)]

Not yet listed in Wikipedia *Category: People_with_prosopagnosia* are

William Bradley Pitt (born December 18, 1963)

He is an American actor and film producer. For long he felt that he had a fundamental problem in recognizing faces of persons he met. And as it is typical for face blind people, he suffered from being taken as arrogant. Finally he outed himself in 2013 (Pitt B 2013).

Elfriede Jelinek (born October 20, 1946)

She is an Austrian playwright and novelist. After she was awarded the Nobel Prize in Literature in 2004 she outed herself in a TV talk show (date and format not memorized, personal communication Prof. Dr. Walter Sachsse, Mainz) that she has significant problems in recognizing someone by his face. Now that she is famous, this might become a bigger problem.

Conclusions

Prosopagnosia is far more common than hitherto thought. In contrast to the rare acquired form, the very common congenital form is mostly overlooked probably because of those many non-facial clues for individual recognition. However, in certain instances, when prosopagnosics have to rely on faces only, they

feel that something is wrong with them in comparison to others. It is obviously the curiosity of this face specific cognitive deficit – either in its acquired or congenital, and hereditary form – which makes it a subject of poems, fictions and biographies.

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