PHYSIOGNOMY – A SCIENCE OR A PSEUDOSCIENCE

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1. What is Physiognomy?

Many of us have come across the phrase "judging a book by its cover". We have been told that it is something we should refrain from doing. Judging a book by its cover prevents the book from conveying to us its ideas and topics of discussion. We have a preconceived notion of the book which also hinders our ability to comprehend it besides depriving us of the element of pleasure. However, this entire idea is psychological and is the way our brain perceives things and deals with them, there are no concrete laws or rules supporting it and the whole matter is highly subjective. We are essentially visual creatures. (The visual area at the back of our brains comprises 30 percent of our cortex.)[1] A wrapper powerfully affects not just our interests but even our reaction to the object that is wrapped.

Now, this very act of judging can be and is being used on people as well. Within a tenth of a second of seeing an unfamiliar face, we have a fair deduction of the person's character. The person's appearance, the way he dresses and his mannerisms play a salient role. Quite often the way we deal with an individual depends upon our initial judgement of them. You would say this is normal and much like the act of judging a book by its cover. However, that is not true, especially when it comes to the face of that person. The face, in this case, is similar to the cover of a book but unlike a cover it has certain distinct features which represent the characteristics and moral standards of an individual. The analysis of the face and the understanding of a person's basic traits through his facial features is the central idea of the science of Physiognomy.

[1] Alex Lickerman M.D, Judging a Book By Its Cover, https://www.psychologytoday.com/blog/happiness-in-world/201208/judging-book-its-cover.

According to the Oxford Dictionary Physiognomy is:[2]

NOUN

- A person's facial features or expression, especially when regarded as indicative of character or ethnic origin.
- *[mass noun]* The supposed art of judging character from facial characteristics.

Judging may at times appear to be unethical. But what if it is a skill, which once mastered can do us a world of good? Understanding those seemingly complex facial details will improve our accuracy and enable us to understand the fabric of a person's personality. Furthermore, this judgement will be based on a well established, empirical knowledge rather than a conditioned belief system (an example would be the blonde stereotype or typecasting in films).

2. Application of Physiognomy.

"Your face, my thane, is as a book where Men may read strange matters." — Macbeth, William Shakespeare

People may or may not believe in this concept of physiognomy or face reading but writers quite often, voluntarily or involuntarily, draw from it. In popular and literary fiction alike, writers make use of some of it, perhaps. I cannot recall ever finding a protagonist described as being thin-lipped, a feature mostly present in antagonists. Similarly, thugs with round childish faces are also highly uncommon. Moving on from head shapes to full body types – very few heroes I have read are below average height. We have all heard rumours about the actual heights of some of our leading actors, who play such 'heroic' roles and how special effects are used to make them appear taller on screen in order to adhere to the social constructs that associate heroes with tall and sturdy men. Take a look at those actors as a group and you may find similar facial types.

[2] Oxford Dictionary of English, Oxford University Press (3rd ed.).

Physiognomy has other applications and uses in the modern era because of which this topic has resurfaced in the major framework of discussion and dispute - one of them being its application in the world of Criminology. Physiognomy is an accepted keyword and concept in the field of criminology and criminal justice.[3] A recent study on ***Automated Inference on Criminality using Face Images*** by Xiaolin Wu, Xi Zhang of Shanghai Jiao Tong University has claimed the successful use of physiognomy for the identification of criminals from non-criminals.[4] This has led to global outrage as many saw it as an attempt to enhance criminal identification technology while others such as Kate Crawford, an Artificial Intelligence researcher at Microsoft Research New York, MIT, and NYU called this a study of "literal phrenology" and "a dangerous pseudoscience".

There is massive chance of legitimately bringing in stereotypes and prejudices into the justice system with the help of this concept. A system where offenders are prosecuted for the way they look and not on the basis of the facts and evidence accompanying the case. The way they look is evidence in itself. However, if actually proven that this method is indeed true, this concept could bring in a lot to the study of criminology with which the world shall benefit to a large extent and majorly succeed in keeping crime at bay.

3. Origins of Physiognomy

Physiognomy has its foundations in antiquity. The earliest practice researchers can recall is that of Pythagoras, who at around 500 B.C. was accepting or rejecting students based on how gifted they ***looked***. He once rejected and declined a prospective follower named Cylon because, according to Pythagoras, his appearance was an indicator of bad character.[5] Aristotle was another prominent figure who believed in the concept. We know this from his writings where he mentioned that large-headed people were mean, those with small faces were resolutely or dutifully firm in their stance, broad faces portrayed stupidity and round faces indicated courage.[6]

[3] Helena McFarquhar, Key Concepts in Criminology and Criminal Justice, Palgrave Macmillan, 12th July 2011.

[4] avalible at https://arxiv.org/pdf/1611.04135v1.pdf .

[5] Christoph Riedweg & Steven Rendall, Pythagoras: His Life, Teaching, and Influence, Cornell University Press, 1st May 2008.

[6] Aristotle, Physiognomonica.

The word Physiognomy comes from the ancient Greek words, *gnomon* meaning "judge" or "interpreter" and *physis* meaning “nature”, hence “the interpretation of one’s nature”. It gained immense popularity again in 16th-century Europe or the Renaissance period, as physicians, philosophers, and scientists searched for tangible external clues to understanding internal temperaments. The term was commonly referred to and written as 'fisnamy' or 'visnomy'. Physiognomy's validity was widely accepted at that time as English universities taught it as a subject and in some cases as a science. However, soon the science was dismissed when Henry VIII of England outlawed "beggars and vagabonds playing 'subtle, crafty and unlawful games such as ‘physnomye’ or ‘palmestrye’[7] in the 1530s.

Leonardo da Vinci disregarded physiognomy in the early 16th century as "false", and referred to it as “a chimaera” (a disease) with "no scientific foundation".[8] Nevertheless, he didn’t dismiss it completely as he believed that lines caused by facial expressions could indicate personality traits, for instance, he wrote that "those who have deep and noticeable lines between the eyebrows are irascible".[9]

Italian Giambattista Della Porta (1535–1615) came up with the idea for physiognomy. His widely circulated book on the subject, *De humanaphysiognomia (1586)*, played a huge role in spreading physiognomy throughout Europe. Porta used animals to analyse and illustrate human characteristics. Illustrations in the book depict human and animal heads side by side, implying that people who look like particular animals reflect those creatures’ traits.

In the second half of the 18th century, Swiss Johann Caspar Lavater became the new king of physiognomy. He compiled an examination of faces and portraits into his best-selling book, *Essays on Physiognomy* or *Physiognomische Fragmentezur Beförderung der Menschenkenntnis und Menschenliebe*, published between 1775 and 1778, which included an analysed reading of the face broken down into its major elements, including the eyes, forehead, brows, mouth, and nose. These influential and largely popular essays which were translated into French and English from German were distributed across Europe. The

[7] or Palmistry, which is the art or practice of supposedly interpreting a person's character or predicting their future by examining the palm of their hand.

[8] Guido Visconti, The Genius of Leonardo da Vinci, Orion Press, New York, 1961.

[9] *Supra* note 8.

expression "stuck-up" comes from his work, where a person with a nose bending slightly upwards was read as having a contemptuous, superior attitude.[10]

Despite laying down a huge chunk of the groundwork in Physiognomy, there are a few criticisms of Lavater's work such as his repeated expression of an obvious cultural bias towards the morality of people from other countries. "Lavater idealises the familiar and praises what he knows," wrote one critic, "but finds 'deficiencies' in the faces of Africans, Laplanders[11], and Calmuck Tartars[12]." He idealises what he himself sees and knows and thus people with non-European ethnic origin are treated differently, with contempt in certain cases.

The relations between physiognomy and aesthetics were brought to light in *Essays on Physiognomy,* as Lavater commissioned artist Johann Henrich Fuseli and poet William Blake to provide the illustrations. These illustrations and their circulation led to the generalisation of ideas regarding a "heroic" face and a "villainous" one. What Lavater provided in his works, if considered ideal, then the distribution of such work would lead to the development of a similar feeling of contempt and cultural bias among other Europeans of that time. It may have also fuelled stereotyping, ethnocentrism and racism. This artistic interest in physical character and appearance contributed to the development of theories of the ideal geometric proportions of the face in the late 18thcentury.

The influence of Lavater's work can be seen throughout 18th and 19thcentury European art. In the 18th century in particular, many thinkers and philosophers accepted the idea of the 'ideal' features, explained and illustrated in classical sculptures, which were mistakenly thought to represent how the ancients actually looked. The cultural superiority of ancient Greece was assumed and established through this method and it became synonymous with these features, which were adopted by European artists and depicted repeatedly. 'Others', such as Asians

[10] J. Arianne Baggerman, Rudolf M. Dekker & Michael James Mascuch, Controlling Time and Shaping the Self: Developments in Autobiographical Writing Since the Sixteenth Century, 22nd June 2011, p. 250.

[11] The Sami people (traditionally known as **Laps or Laplanders** in English) are an indigenous Finno-Ugric people inhabiting the Arctic area of Sápmi, which today encompasses parts of far northern Norway, Sweden, Finland, and the Kola Peninsula of Russia.

[12] The **Tatars** are a Turkic people living in Asia and Europe who were one of the five major tribal confederations in the Mongolian plateau in the 12th century CE.

and Africans, were less moral and less beautiful as their appearance were distinctly different from those 'ideal' ones.

Racial profiling[13] was advanced by Lavater who believed the profile to be the best perspective to analyse human personality. And just like him, Della Porta and others while trying to establish what they believed to be a science, intentionally or unintentionally laid the groundwork for an established stereotype which caused more harm than good.

4. The ways in which a legitimate subject or science, known as Physiognomy would be helpful

Physiognomy or Personology has identified six main trait areas which are Thinking, Action, Feeling or Emotion, Automatic Expression, Physical and Current Outlook Trait. These are further subdivided into approximately 50 different behavioural traits, each one with unique physical identifiers. An understanding and reasonable working knowledge of these traits can be extremely useful to everyone - including employers, therapists, managers, teachers, judges, jury-selection committees and also the criminal or justice system because it offers a good understanding of how that person 'takes on life'. Let us look at a few examples.

- **To better understand the wants and attributes of an individual:**
  This would be beneficial to employers and teachers as one could now employ the best applicant and the other could teach and explain methods, concepts after taking into consideration the factors which are revealed. However, we must understand that even in the present day scenario without the actual implementation of this concept physical appearances do play a huge role in getting a person through an interview. For example, we know that obesity is detrimental in such a situation.[14]
- **To judge criminal liability:**
  With the help of exercises similar to that performed by the researchers of the Shanghai Jiao Tong University[15], criminals can be detected far more effectively, which in turn would help us keep such people in check and crime at bay. Also, the development of software such as Faception, a start-up based in Tel Aviv, Israel, has

[13] It is the use of race or ethnicity as grounds for suspecting someone of having committed an offence.

[14] Chamorro-Premuzic Tomas & Adrian Furnham, The Psychology of Personnel Selection, 1st ed. Cambridge: Cambridge University Press, 2010, Cambridge Books Online.doi:10.1017/CBO9780511819308 pages 13-14.

[15] *Supra* note 4.

added to the benefits of judging and predicting individual behaviour through facial recognition and physiognomy. This particular software has the ability to identify people of particular categories which include terrorist, paedophile, white-collar criminal, poker player, bingo player and academician.[16]

- **Helps us understand and work on the dynamics of relationships:**

  There is a lot that goes into making a relationship successful. In this kind of a situation knowing your partner's characteristics helps in forming an understanding relationship. Quite often one tends to have a dominating attitude but the other should understand this intrinsic trait and not allow such a matter to be a reason for disruption. Having knowledge of traits not only helps us understand our partners better but also helps us understand ourselves.

- **To understand how people process life, information, emotions and feelings:**

  Man is a social animal. His day to day activities are filled with interaction and conversation with other members of his surroundings. Quite often these interactions have a purpose, for instance, striking a business deal or coming to an agreement or revelation of a deeply hidden secret. In such a situation Physiognomy helps understand the deep-seated ways in which an individual processes life, emotions and feelings. Knowledge of such a subject can easily be used to an individual's advantage.

- **Offering career guidance:**

  Quite often an individual has trouble in choosing a career which is best suited for him. Here, Physiognomy provides an avenue towards that dream job. Our faces have certain characteristic features which show our aptitude in certain fields and by analysing these features a job is found. For instance, eyes being close together also symbolise focus. Thus, accountancy is a suitable profession for such a person.

[16] Controversial Software Claims to Tell Personality from Your Face, New Scientist Magazine, 4th June 2016, https://www.newscientist.com/article/2090656-controversial-software-claims-to-tell-personality-from-your-face/.

5. Various traits of the face that Physiognomy and its practitioners observe and the inferences drawn from those observations.[17][18][19]

Physiognomy, as previously explained, analyses various features of the face and some parts of the body, for example, the fingers, the eyes, the forehead, nose, ears, chin, etc. Given below are varying degrees of features observed, the inferences that are drawn from such observations and its backing with scientific data.

Firstly, look at your **hands**. The extent of hand co-ordination can be distinguished quite easily by looking at the length of the forefinger, middle and ring fingers. The more even their length, the better the hand and finger coordination is likely to be. People whose fingers have varying lengths have to concentrate harder on what they are doing as they lack the control and coordination therefore they naturally gravitate towards pursuits that are more mental than practical. The study, published in Proceedings of the National Academy of Sciences, found finger size accounted for 20 percent of the difference in characteristics or skill. However, the finding did provoke scepticism.

Another aspect related to the hand would be the ratio between index and ring finger which is believed to be linked to exposure to the male hormone, 'testosterone' in the womb. It is known scientifically as the **finger length ratio** (**2D**:**4D**) and is a sexually dimorphic trait. On an average, men tend to have longer ring fingers and women longer index fingers. Higher the testosterone level in the body, greater the length of the ring finger and the more "masculine" the resulting child, irrespective of whether the child is male or female. The longest ring finger is known as the "Casanova pattern". Professor John Manning[20], author of The Finger Book, said the ratio is a method to judge and measure past exposure to testosterone and future potential.

Ring finger longer than index finger - More often found in men than women, people with longer ring fingers tend to excel on the sports field, especially in running and football,

[17] Naomi R. Tickle, It's All in the Face: The Facts and Fantasies of Face Reading, Daniels Publishing, 1995.

[18] Paul Elsner & Esther Hopper, Who We Are, Personology Foundation of the Pacific; 2nd edition 1st April 1998

[19] Jeremy Laurance, Success Isn't Written in the Stars, It's in the Length of Your Fingers, The Independent, 14th January 2009.

[20] Prof. John T. Manning, Psychologist, University of Liverpool.

scientists at the University of Bath found. A recent study showed autism may be linked with exposure to testosterone in the womb. Autism is sometimes described as the 'extreme male brain' and is four times more common in boys than girls. Finger length might provide an early warning of the condition. Canadian researchers from the University of Alberta have found a correlation between length of the ring finger and levels of physical aggression.

Index finger longer than ring finger – According to scientists at the University of Bath, the traditional pattern in women, long index fingers, can predict a child's academic strengths. The findings were published in the *British Journal of Psychology* in 2007. Studies of sexual orientation have shown that lesbians are more likely to have longer ring fingers, suggesting exposure to higher levels of foetal testosterone. According to Professor John Manning, gay men too exhibited this trait just like many other women as they show feminine finger ratios, suggesting less testosterone exposure in the womb.

Eyes are a window to the soul and nature of an individual. Their shape, placement, whether they recede or protrude and many other factors give us clues to personality traits. People who have their eyes closer together (recall Prince Charles), tend to be less tolerant to mistakes (whether their own or others') than those whose eyes are wider apart (recall Oprah Winfrey's face and eye set). Now, how close is 'close'? Eyes are said to be close if the space between the eyes is less than the eyes' width. Closely set eyes also indicate a tendency towards perfectionism. One could make use of such knowledge by appointing an accountant with a similar trait because such people are also quite focused and are also very time conscious. Wider-set eyes indicate a comparatively easy-going personality with a greater ability to appreciate. A fold of skin over the eye (known as an epicanthic fold – predominant in persons of Asian extraction) which could cover the upper eyelid completely signifies the analytical trait in people. The larger and more distinct this fold, the more analytical the person tends to be, wanting to know 'why'or the reason behind everything. Next time a child or a colleague keeps asking "but why?!" have a look for this trait – the classic answer "just because" will never satisfy them. Individuals with no epicanthic fold at all, tend to rely more on their instincts than on finding the root reason at all times.

People with large **irises** usually express their emotions and feelings very easily. For instance, a baby has very large irises as compared to the sclera (white area) – and he is very quick to notice that all is not right in his surroundings. A small iris is indicative of someone who has trouble expressing feelings. Such people exercise more self-control. In fact, these people,

while comparing themselves to others, might observe many people as being emotionally over-reactive or extremely (in some cases unnecessarily) expressive.

Even the **eyebrows** tell a story. People whose eyebrows are higher up over the eye (a common feature in women) appear less approachable, snooty, aloof and distant – more 'high-brow', as some people call it. To a certain extent they are. They are naturally selective and discerning. On first meeting them, one should refrain from intruding into their space or coming off as over-familiar too quickly. They will decide in good time if they can be comfortable with someone – but when they do, their commitment/friendship is loyal and lasting. Eyebrows that are low over the eyes, unlike the high-brow ones, are indicative of an individual who is more approachable and easy-going. They are more tactile in nature. More information can be found by looking at the shape of the underside of the eyebrow or where the eyebrow arches.

The **nose** is a very interesting appendage to the entire subject. Everything from the way it flares to its basic shape tells us a great deal about someone. An upturned nose tip is indicative of someone who is very trusting but gullible at the same time. 'Having your nose up in the air' is a very common saying associated with such people and this phrase is mainly derived from the study or general perception of physiognomy. This trait is prominent in animation films where mean and snide characters are represented with noses pointing upwards. The cynic, on the other hand, is seen to have a nose tip angled down.

A full lower lip can be an indication of generosity, especially when coupled with large eyes. Someone with a full upper lip is more expressive of their emotions, which could be quite an asset when narrating a story or giving a presentation. People with thinner lips tend to be more objective. They may even feel quite annoyed with lengthy and verbose explanations of things. Lips can also reveal a person's predilection towards impulsivity. In the profile of a person, notice whether the position of the lips projects ahead of the glabella[21] or recedes. If the lips protrude ahead of the glabella, the individual tends to be spontaneous, impulsively jumping into situations without too much thought. They also tend to interrupt conversations or say things without much thought. Individuals whose lips lie behind the glabella are generally more diplomatic. This trait would also be read in conjunction with another facial

[21] The **Glabella** is the smooth part of the forehead above and between the eyebrows.

feature, the nasio-labial fold[22]. People whose chins extend beyond the glabella tend to 'stick their neck out' and confront life head on. A receding chin, on the other hand, indicates an aversion to confrontations. A person's way of thinking can be gauged by looking at the relative angle of the forehead. Someone with a slant-back forehead is usually goal-oriented, quick to think/respond and would be very good in case of emergencies or where prompt action is needed. The downside of this could be indicative of someone who tends to jump to conclusions. Notice how many athletes have their foreheads sloped back. Someone with a vertical forehead is likely to be more means orientated, subjective and sequential in their thinking. They like to think things through before deciding anything and do not rush into decisions. They prefer a step by step learning process. Analysing details and dealing with issues in an orderly manner is characteristic of such people.

6. Recently conducted experiments that support and strengthen the study of Physiognomy

In 1966, psychologists at the University of Michigan conducted an experiment to prove the relation between facial features and personalities. 84 students who were unfamiliar with one another, were asked to rate each other on five personality traits, based entirely on appearance, for a time period of 15 minutes.[23] With regard to the first three traits – extroversion, conscientiousness and openness – the observers' rapid judgements matched real personality scores significantly.

The findings of the research and the links drawn have recently been re-examined notably by Anthony Little of the University of Stirling and David Perrett of the University of St. Andrews. They pointed out that the Michigan studies did not take into consideration factors such as, the participants' postures, movements, clothing and so on. However, when both these men re-ran the experiment using profiles or mug-shots rather than live subjects, they too found a link between facial appearance and personality, though only for extroversion and

[22] The **nasolabial folds**, commonly known as "smile lines" or "laugh lines", are facial features. They are the two skin folds that run from each side of the nose to the corners of the mouth. It is defined by facial structures that support the **Buccal fat pad**. They separate the cheeks from the upper lip.

[23] Frank T. Passini & Warren T. Norman, A Universal Conception of Personality Structure, Journal of Personality and Social Psychology vol 4(1), July 1966, p. 44-49.

conscientiousness traits.[24]

These experiments suggest that our instantaneous judgements really do contain a kernel of truth about the personality of the person. Little emphasises that the link is far from clear-cut. Perrett and he only found a correlation in the cases of extreme personalities. Other studies have failed to find any link with the different aspects of personality. The owner of an 'honest' face, for example, is no more likely to be trustworthy than anyone else.

This association has also been supported by a study published in 2008 by Justin Carré and Cheryl McCormick of Brock University in Ontario, Canada. This study was conducted on 90 ice hockey players. They found that a wider face in which the cheekbone-to-cheekbone distance was unusually large compared to the distance between brow and upper lip was linked in a statistically significant way with the number of penalty minutes a player was given for violent acts including slashing, elbowing, checking from behind and fighting.[25]

They also found a link between the facial width-to-height ratio and the male sex hormone testosterone. According to the results of a recent pilot study by Carré, men with wider faces have higher testosterone concentrations in their saliva.

The critical and as yet unanswered question is whether people judge men with wider faces as more aggressive. McCormick and Carré are studying this, and though the results are not yet deduced, McCormick says a preliminary analysis suggests that they do.

If this pans out, it would mean that men with high testosterone levels, who are bigger, stronger and more dominant, are more likely to have rounder faces – and that we have evolved to judge such faces as aggressive because their owners are more likely to attack us. Carré stresses, however, that the face is only one of many cues that we use to read the intentions of others. "It is not the be all and end all of assessing people."

[24] A. C. Little & D.I. Perrett (2007), Using Composite Images to Assess Accuracy in Personality Attribution to Faces. British Journal of Psychology, 98: 111–126. doi:10.1348/000712606X109648.

[25] Justin M Carré & Cheryl M McCormick, In Your Face: Facial Metrics Predict Aggressive Behaviour in the Laboratory and in Varsity and Professional Hockey Players, Proceedings of the Royal Society B, vol. 275, p 2651,

Proc. R. Soc. B 2008 275 2651-2656; doi: 10.1098/rspb.2008.0873.

Leslie Zebrowitz, a psychologist at Brandeis University in Waltham, Massachusetts, says we humans have a tendency to overgeneralise certain aspects of a person's nature through his facial features.[26] Just like certain moths or butterflies have spots or eyespots on their bodies to resemble the eyes of the predator, to keep them away, the same may be true of our reaction to baby-faced men, who on the first impression are generally judged to be submissive and naive. Just as an eyespot is not an eye, so is a person with a baby face not always babyish, but an observer is likely to respond as if they are. It is a similar case when we consider our reaction to unattractive faces, which according to her is an overgeneralisation of an evolved aversion to people who are diseased or suffer from some genetic anomaly, effects of which are seen on the face. There is also 'familiar face overgeneralisation', whereby people are judged or assumed to have the traits of others who they resemble.

Another researcher who leans towards overgeneralisation is Alexander Todorov, who along with Princeton colleague Nikolaas Oosterhof put forward a theory in which he explains our snap judgements of faces in terms of how threatening they appear. Todorov and Oosterhof asked people for their instantaneous, natural, gut reactions to pictures of emotionally neutral faces. After sifting through all the responses they concluded that two underlying factors made the difference - trustworthy and dominating. They then worked out exactly which facial features were associated with looking trustworthy, untrustworthy, dominating or submissive.

Next, they arbitrarily generated faces on a commercial program called FaceGen and morphed them into exaggerated caricatures of trustworthy, untrustworthy, dominating or submissive faces based on common features which according to their initial experiment attached such attributes to a sample face. An extremely trustworthy face, for example, has a U-shaped mouth and eyes that form an almost surprised look. An untrustworthy face, on the other hand, has the corners of the mouth curled down and eyebrows pointing to form a V. In the next and final step they showed these faces to people and asked them a different question - what emotions did they appear to be expressing? People consistently reported that the trustworthy faces looked happy while the untrustworthy ones angry. Dominating faces were deemed masculine and submissive ones feminine.

[26] L. A. Zebrowitz & J. M. Montepare (2008), Social Psychological Face Perception: Why Appearance Matters, Social and Personality Psychology Compass, 2: 1497–1517, doi:10.1111/j.1751-9004.2008.00109.x.

Todorov and Oosterhof concluded that personality judgements based on people's faces are an overgeneralisation of our evolved ability to observe, derive and infer emotions from facial expressions, and hence a person's intention to cause us harm or not.[27]

Todorov, however, emphasises that overgeneralisation does not rule out the idea that there is sometimes an element of truth in these assessments of personality. "I would not say there is no accuracy at all in these judgements, particularly in the case of dominance," he says. "It is not the case that overgeneralisation and kernel of truth ideas are mutually exclusive."

So if there is a kernel of truth, where does it come from? How are some personality traits written all over our faces? In the case of the ice-hockey players, there are links between facial appearance, testosterone levels and personality but there are possibilities of other links forming as well.

David Perrett, who was one of the researchers of the first experiment, expressed a hunch that the link arises when our prejudices about faces turn into self-fulfilling prophecies - an idea that was investigated by other researchers back in 1977.[28] Our expectations have the ability to influence people to behave in ways that confirm those expectations. For example, if we consistently treat someone as untrustworthy, they end up behaving that way.

"Infants with masculine faces grow up to be children and adults with masculine faces," Perrett says. "Parental and societal reactions to these cues may help shape behaviour and personality. In essence, people would be growing into the character expected of their physiognomy."

This effect sometimes works in the opposite way too, especially for those who look 'cute'. The Nobel prize-winning ethologist, Konrad Lorenz once suggested that baby-faced features, often referred to as 'cute', evoke a nurturing response. This has been supported by

[27] Nikolaas N. Oosterhof & Alexander Todorov, The Functional Basis of Face Evaluation, Proceedings of the National Academy of Sciences, vol 105no. 32, p11087-11092, doi: 10.1073/pnas.0805664105.

[28] Mark Snyder, Elizabeth Decker Tanke & Ellen Berscheid, Social Perception and Interpersonal Behavior: On the Self-fulfilling Nature of Social Stereotypes, Journal of Personality and Social Psychology, vol 35(9), Sep 1977, p656-666.

Zebrowitz's work, which found that baby-faced boys and men stimulate an emotional center of the brain - the amygdala[29], in a similar way.

But there is a twist. Baby-faced men are, on average, better educated, more assertive than their mature-looking counterparts. They are also more likely to be criminals due to their strong assertive character e.g. the face of Al Capone. Similarly, Zebrowitz found baby-faced boys to be quarrelsome and hostile and more likely to excel academically. She calls this the 'self-defeating prophecy effect', where a man with a baby face ridicules and goes against the premeditated expectations of the people in his surroundings, on the basis of his face.

There is another theory according to which our personality moulds the way our faces look. It is supported by a twenty year old study which found that angry old people tend to look cross even when asked to strike a neutral expression. This, according to the study is mainly due to a lifetime of scowling, grumpiness and grimaces which seemed to have left the facial muscles to have developed in that manner.

This theory takes us back to Charles Darwin[30], who referred to how "different persons bringing into frequent use different facial muscles, according to their dispositions; the development of these muscles being perhaps thus increased, and the lines or furrows on the face, due to their habitual contraction, being thus rendered more conspicuous." Once again, Darwin was way ahead of his time. He shows how we get the face we deserve and how to a certain extent it represents our true personality down the years.

Conclusion

The main objective of this paper was to build the credibility of Physiognomy by analysing its multiple facets such as its history, application, fundamentals and so on. After doing so, we can safely say that Physiognomy is indeed a reality. We must agree that its practice consciously or subconsciously has been occurring since time immemorial and for a pseudoscience to go on for such a long time is highly improbable. We also realise that accepting such a science can have a negative impact such as perpetration of racism and

[29] The **Amygdala** are two almond-shaped groups of nuclei located deep and medially within the temporal lobes of the brain in complex vertebrates. Shown in research to perform a primary role in the processing of memory, decision-making, and emotional reactions,

[30] **Charles Robert Darwin** was an English naturalist and geologist, best known for his contributions to the science of evolution.

stereotyping. However, its innumerable benefits should not be neglected. So the question we now ask ourselves is, whether or not it can be used on a large scale, with full faith. The answer we get is a resounding no. The main reason being - though Physiognomy shows us its scientific existence, on many occasions it remains vague, without clear-cut rules and with biased opinions (like those of Lavater). Unless it is further developed and strict rules are formed, it cannot be put to use and there will always be an element of doubt. But once this is cleared, facial recognition, artificial intelligence (AI) and human beings can reach new goals and move towards a safer and a more transparent world.