The Paradox of Perception – You do not need THE EYES to SEE the person

ABSTRACT

Covering the eyes of patients in reports or public images is often done to preserve anonymity, dignity and confidentiality. However, human recognition is a complex process involving a variety of sensory inputs that extend far beyond mere visual processing. One can often identify a person based on other non-visual cues, including auditory, tactile, social, contextual, cultural, and emotional dimensions. With regards to the face, blocking out the eyes alone does not guarantee that a person's identity will be concealed. This is because there are many other geometric and anatomical features that the brain is attuned to recognising. In addition, modern AI programmes can often be used to re-insert blocked-out features. This paper suggests that from both an ethical and legal perspective, we need to develop more sophisticated ways of treating patient facial photographs to ensure that they are truly not recognisable to others.

INTRODUCTION

The eyes are conventionally considered the primary sensory organs through which we interpret the world and see others. However, perception is a multifaceted process that extends beyond the physical sight of the observer, and their observation of the eyes of others. This phenomenon challenges conventional assumptions about what it means to "see" someone and calls attention to the diverse ways we recognize and understand others.[1] It is common practice in medicine and dentistry, forensic science, legal cases, journalism, social media, or other situations where one wants to hide an individual's identity to block out their eyes in order to maintain their anonymity. This paper argues that despite that practice, we do not need vision, nor do we need to be able to view the eyes of another to recognise and identify them. It speaks to the idea that understanding or "seeing" someone isn't just about physical sight, and explores how a person can still be "seen" by drawing on psychological, physiological, and social perspectives. We can "see" a person through many different aspects, including other physical features, their actions, words, energy, situation and

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setting, as well as the way they make us feel. It goes beyond just the visual—there's an emotional and intuitive aspect to it, too.

The Role of Non-Visual Cues in Identity Recognition

When people think of recognition, they often associate it with facial features, especially the eyes. However, human recognition is a complex process involving a variety of sensory inputs that extend far beyond mere visual processing. Studies on prosopagnosia (face blindness) demonstrate that people with impairments in facial recognition often rely on several other cues, to identify individuals.[2] These alternative forms of recognition suggest that even with the eyes covered, one can still perceive and identify a person.

The Cognitive Science Behind Non-Visual Recognition

From a cognitive science perspective, the brain has specialized neural systems for processing different kinds of sensory information. Research on the brain's processing of faces (the fusiform face area) indicates that people are wired to recognize faces through visual cues, but other areas of the brain are responsible for recognizing people through sound, touch, and social context. This neural adaptability underscores the brain's ability to shift between different types of sensory data for identification purposes.[3] Furthermore, the brain's capacity for "multimodal integration" allows us to blend information from multiple senses to form a cohesive understanding of an individual, even if one sense—like vision—is not available.

Auditory Cues: The Role of Voice

One of the most prominent non-visual identifiers is a person's voice. Vocal characteristics such as pitch, tone, cadence, and rhythm are highly distinctive and are crucial components of identity. A person's voice often carries the nuances of their emotions, background, and unique speech patterns. Even when someone's eyes are covered or they are out of sight, their voice can reliably trigger recognition, particularly if they have an established relationship with the person.[4] This is why we can easily recognize others on the phone without needing to see them.

Tactile and Kinetic Recognition: The Power of Touch and Movement

In the absence of sight, tactile and kinetic cues can also help identify an individual. The unique way a person walks, moves, or gestures often leaves an imprint on their observer's memory. For instance, the rhythm or sound of someone's footsteps, the way they gesture during conversation, their stance, the tilt of their heads, their form of greeting such as a handshake or a hug, their style of speaking, or the emotional tone of their speech might all reveal their identity. Their mannerisms are usually very familiar to those who know them, and are often so distinct and unique that they may even allow us to recognize strangers and public figures who we have only observed from a distance.[1]

Social and Contextual Recognition

Even without physical sight, we constantly rely on contextual and social clues to make sense of our environment. Context plays a large role in how we perceive and identify others. For example, if a person is at a familiar location or is in a situation with a group of people they know, the surrounding context helps identify who they are. This phenomenon aligns with the idea of "social recognition," where individuals are not only recognized by their physical features but also by their behaviours and interactions within a particular social framework.[5]

Cultural and Emotional Dimensions of Recognition

Cultural factors also play a significant role in how we identify others without seeing their eyes. In many cultures, people are taught to recognize not just the face, but other non-visual aspects of identity, such as voice, gait, or even scent. These learned patterns further reinforce the idea that identity is not limited to physical sight. Moreover, the emotional connection between individuals can serve as a powerful recognition tool. Emotional bonds can create a deeper form of recognition, where the mere presence of another person, irrespective of their visual appearance, triggers a sense of familiarity. This suggests that identity is as much about emotional connection as it is about physical features.[1]

Focusing in on the face – The use of facial photographs in medicine, dentistry and forensic sciences

Facial photography presents a unique ethical dilemma, as faces are difficult to de-identify if one wants to use patient photographs for teaching, at conferences, in publications, as illustration for other patients, or even for advertising purposes.[6] Blocking out of the eyes alone is no guarantee that a person's identity will be protected. Consider the photographs below (obtained from public domain) where the eyes have been blocked out, and try identify the people depicted?

In most cases, identification is still possible. This is because there are a myriad of other geometric and anatomic facial features that the brain is attuned to recognising.[7] These include the distances and angles between structures; eye-to-eye distance; pupil position and eyelid shape; eyebrow arch and thickness; nose shape, width, tip length, nostrils and bridge; mouth width, corners, lip shape, tonicity and fullness; chin and jawline; cheekbone structure; skin tone and texture; skin patterns including wrinkles and unique markings such as dimples, freckles, scarring and pigmentation; hairline; and the size, shape, inclination and visibility of the ears. If teeth are visible they offer even further means of identification.

Unless a person has had extensive restorative dentistry they are often recognizable by their unique dental arrangement, tooth size, angulation and shade, class of occlusion, degree of overjet and overbite, buccal corridors, missing dentition as well as the presence of visible dental restorations.

The use of blocking out eyes has waned, as patients are often recognized by themselves and others in spite of this technique.[8] Some patients remain identifiable even when the eyes, nose, and mouth are also blacked out. This highlights the need for better means of de-identification when using facial photographs.[7] The first and most important requirement is to gain patient consent. This process must cover and describe all possible uses, including the possibility that the illustrations could end up on social media platforms. Patients can then sign full consent or only approve certain uses. They may also be allowed to view the manuscripts or presentations in which their photographs will appear and to withdraw their approval at any time if they are unhappy.[8] With regards to paediatric patients, assent refers to permission or consent from a patient less than 18 years of age and is required in almost all circumstances.[9] This can be written assent from patients 10 years of age and older and verbal assent from younger patients. Patients also tend to feel more comfortable and secure if the photographs are taken on a hospital-owned camera rather than a personal camera or cellular phone.[10] Other methods of de-identification include removing all metadata, cropping of non-essential features, blurring or pixelating the entire face, using silhouette-style settings such as high-contrast, shadowing or cloning and pasting over features. A concern is that with modern AI technology, computers can easily reconstruct people despite partial facial obfuscation using programmed deep learning tools, local binary pattern recognition, 3D shape mapping, or Eigenfaces and Principal Component Analysis (PCA) mathematical formulae.[1] AI may also be used to morph illustrations or the opposite, to fill in body parts that have been blocked out of an image. These methods help in identifying and verifying faces in images, even under varying conditions like different lighting, pose, and facial expressions. In criminal cases, forensic artists use this to create various composite portraits based on a witness's description of the individual features.

Ethical and Legal Principles

Medical and Forensic Ethics mandate covering eyes of patients in reports or public images in a professional responsibly in order to preserve patient anonymity, dignity and confidentiality. Whether the patient is deceased or

alive, concealing identifiable features like eyes can prevent dehumanization. Graphic forensic images should be handled responsibly, avoiding unnecessary public exposure or exploitation. One must also be aware that some cultures have strong beliefs regarding the treatment of deceased individuals and how they should be represented in forensic or medical settings.

The legal requirements for covering the eyes of patients depend on the jurisdiction, ethical considerations, and the purpose of covering their eyes. For example, forensic patient information, including identifiable images, must be protected. However, if forensic photographs are used in court, the decision to cover the eyes depends on whether the identity needs to be protected. In some cases, courts may require unaltered images. If forensic evidence is presented in court or research, ethical considerations must balance the need for transparency with privacy protections. Many countries have patient privacy laws that may require anonymizing patient images, with extra legal protection for minors or vulnerable individuals. Furthermore, if forensic images are released to the media, covering the eyes may reduce privacy violations or legal liability. To this end many journalistic standards require anonymization of crime victims, forensic patients, or suspects by obscuring facial features. It also helps to preserve privacy rights and protect against accusations of defamation.[6]

CONCLUSION

The ability to "see" and identify a person does not depend solely on vision. Through auditory cues, tactile experiences, social context, and emotional connections, humans can recognize and understand others without relying on their own vision or seeing the eyes of the person being observed. The complex nature of recognition involves a blend of sensory inputs, cognitive processes, and emotional bonds that together create a more holistic view of identity. As we continue to explore the interplay between sight, sound, touch, and context, it becomes evident that the recognition of a person transcends the physical act of seeing—demonstrating that the true essence of "seeing" someone lies in the deeper connections we form beyond the visual realm.

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