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The Individual and the Stereotype: From Lavater to the War on Terror

Abstract
This paper examines the technologies of surveillance and biometrics and the resultant slippage between the individual, the type and the stereotype. The stereotype emerges from between the general and the individual as a coherent, simplified, easily readable idea.

There have been many attempts to find a particular characteristic that is unique to an individual that enables absolute identification. Alphonse Bertillon sought it in a combination of body measurements. Later this was superseded with fingerprints which are now in doubt. There also has been a search for clues on the surface of the body to classify type, giving rise to a belief in a separate species; the born criminal. With the lack of certainty of the uniqueness of the individual identifiers despite the increased surveillance, blurring continues to occur between the individual and the stereotype.

Biography
Current position at the University of Sydney, Sydney College of the Arts, involves the introduction of digital 2D and 3D visualisation into the faculty's research and into all areas of the undergraduate curriculum. Trained in new media, interactive art and sculpture, I work across biometrics, fine arts, history and criminology with a cross-disciplinary PhD in these areas. As a visiting artist at Sydney's St. Vincent's Cardiopulmonary Transplant Unit, I developed (with Victoria Ryan) art projects for donor and recipient families and young people awaiting transplant, and presented papers on this work. A residency at the Sydney Children's Hospital allowed me to extend fine art practices of hospitalised youth, with an outreach project in digital art practices for homeless adolescent and a project using video for self-efficacy for anorexics. Exhibiting profile includes public interactive sculpture at such Sydney sites as Darling Harbour, Taylor Square, Oxford Street and South Dowling Street, and on the lake in Canberra, participation in the South Sydney Council Sculpture Program and the Festival of Sydney. My present project is an animated history exploring alternative, creative approaches to visual representation of historical discourses with the intent to make this material accessible to younger audiences fluent in ICT technologies.

The Individual and the Stereotype: From Lavater to the War on Terror
Introduction
Since the late 1960s artists have sought to unravel the complexities of the gaze and to demonstrate that there is no simple, or even necessary connection, between seeing and knowing, or the observer and the observed. Scientific claims to objectivity have been contested in numerous ways - from historical investigations into the construction of photographic truth that reveal the underlying power structures and social practices - to efforts to redeploy the techniques of surveillance in quite different directions. Artists such as Bruce Nauman, Sophie Calle, Nancy Burson, and Julie Gough have engaged with such discourses on individual identity and the functioning of modern surveillance systems and have sought to disorder such scientific certainties along with the monolithic power structures that have grown up around them.

This paper explores nineteenth century criminology and current surveillance and biometrics, examining stereotypes of criminality that were formed over two centuries and are still in use. If nineteenth century criminology set the stage, and the twentieth century elaborated the theory of criminal deviance, many of these ideas were successfully integrated into the core of biometrics.

Much of the early material focuses on the face or facial expression but it also takes in systems of body measurement that were popular well into the twentieth century. I shall look at the work of Lavater, Gall, Lombroso, Bertillon and Havelock Ellis before examining current biometrics.

The physiognomist Lavater, responding to the momentous cultural shifts of the Enlightenment, attempted to codify facial features and expression into a system that could be universally applied.[1] Barbara Stafford's study of Lavater situates his work as a form of Enlightenment 'body criticism' - a type of 'corporeal connoisseurship' that 'diagnosed unseen spiritual qualities by scrutinizing visible traits.'[2] To Stafford, Lavater invented a uniquely modern bodily lexicon, that sought to create continuity between the interior of the body and its exterior.

Lavater aimed to rationalise, categorise and master a whole range of visual phenomena during a period of chaotic cultural shifts and deep anxiety about the truthfulness of the visual world. The rise of physiognomy was intimately tied to a revolution in communication of the late eighteenth century that cast doubt on the idea of visual truth.[3] In his *Essays on Physiognomy*, Lavater argued that facial expression provided the most direct access to character and he extended the anatomical logic of the face to the whole body, which he divided into a tripartite structure composed of animal, moral and intellectual life.[4]

Lavater drew on Camper's attempt to establish the modern geometry of ideal beauty, his 'facial index', where the upright face of Greek statues represented the ideal, with the subject's facial angle situating it within the Great Chain of Being. This hierarchy of race was perhaps the defining feature of Camper's work and it allowed Lavater to simplify his own system of classification, feeding into the scientific racism of the period.[5] This moral mission was inextricably linked to colonial expansion and ushered in an era in which physical appearance would become increasingly politicised.

Franz-Joseph Gall developed Phrenology,[6] a system of head measurement that was influential during the creation of the modern penal reform movement.[7] Phrenology had wide applications, both scientific and popular, for its claimed ability to detect the features of the criminal skull and directly equate the shape of the skull with particular mental faculties. It was responsible for the idea that intelligence could be detected in cranial architecture. The biologisation of behaviour was seen as a central means of reconciling the relationship between the types of crimes committed and the bodies of criminals likely to commit them. While phrenology fell from favour in scientific circles by the 1880s, it continued to represent a coherent theory of society in Australia, a country founded as a penal colony and still shaken by the chaos of nearly a century of migration. Physical anthropologists continued to use skull measurements to support theories of Caucasian racial superiority.

Enthusiasm for body measurement reached new heights in the second half of the nineteenth century, when Cesare Lombroso, an Italian criminologist, claimed to have discovered the physical dimensions of *criminal man*. His most controversial claim was the existence of the born criminal, a type he regarded as atavistic, as an evolutionary throwback to a more primitive species, the *homo delinquens*.[8] Lombroso's evolutionary hereditarian theories served to consolidate diverse institutional populations into a single category of deviance.

At the end of the nineteenth century Alphonse Bertillon,[9] working in Paris had begun to develop a system that revolutionised the archival management of information about crime as well as policing procedures. Bertillonage relied on the idea that criminals could be identified by their physical measurements. Bertillon created a composite system of criminal identification that consisted of body measurements, photographs and a *portrait parle,* a written description of the individual's appearance.

One of the most fascinating books of the early twentieth century was Henry Havelock Ellis' *The Criminal*.[10] This book was intended to introduce the work of Lombroso and the Italian school into the English speaking world. It drew on a range of works from the end of the nineteenth century and was illustrated with drawings and photographs. Seemingly precise methods of individual identification gave rise to stereotypical representations. Many of the photographs in *The Criminal* were manipulated, others were composites designed to illustrate how particular classes of criminals were supposed to look. Markers of criminal degeneracy included gynecomasty, 'atrophy of the genital organs',[11] and masturbation.[12]

Stereotypical representations produced by these systems have been integrated into current biometric technologies. Even though the developers of biometrics fail to acknowledge this history, it is interesting how enduring these stereotypes have been. Biometrics claims to be breaking new ground, particularly in the area of face recognition, and large injections of government funding into the development of technology have raised questions about its utility. Since September 11 2001, the declaration of the *War on Terror*, and the injection of US$ 50 billion by the Bush administration,[13] the biometrics industry has enjoyed unprecedented growth.

Current biometric technologies have drawn on a body of knowledge that has been under construction since the Enlightenment. The most important systems of physical analysis, body measurement and

visual representation developed during the nineteenth century produced a comprehensive set of stereotypes of criminal deviance.

The sciences of physiognomy, phrenology, criminal anthropology and anthropometry all sought causal explanations for deviant behaviour in biology. Physiognomy was a scientific system of face reading that emerged in Europe during the 1790s with the expressed aim of rendering the workings of the mind transparent through an analysis of facial expression. Physiognomists worked from the idea that there was a smooth continuity between thought and appearance and that good and evil showed themselves directly on the countenance.

Phrenology emerged in the early 1800s and attempted to draw up a direct relationship between the architecture of the skull and the workings of the brain. Phrenologists developed a comprehensive list of mental faculties that governed human behaviour, all of which influenced the shape of the skull. By measuring the skull they claimed to be able to account for the type of mental deficiency so commonly encountered in criminals.

By the 1860s the rising discipline of criminal anthropology had extended the insights of physiognomy and phrenology, attempting to produce a list of physical 'stigmata' that characterised the *criminal type*. During the 1890s the idea that criminal behaviour could be reduced to a set of facial characteristics, head shapes and body measurements gained wide support among criminologists, penologists and policing agencies. While physiognomy, phrenology and criminal anthropology had created a generalised set of stereotypes, criminologists turned their attention to anthropometry in an effort to isolate individual physical characteristics which defined the features of criminal offenders.

The New Criminology

In their 1998 book *In the Eye of the Beholder: The Science of Face Perception*, Vicki Bruce and Andy Young have investigated the way mass visual and textual material on criminality has influenced our perceptions at the most unconscious level. Bruce and Young argued that the 'rather seamy history of the *criminal face* has shown that there is little validity in the ability to predict criminal behaviour from facial appearance'.[14] Despite this finding, research participants have been found to consistently use stereotypes of criminality to make judgments about people in their day to day lives.[15] They found that a wide range of observers were in agreement about the facial characteristics that made people *look* 'honest', 'intelligent' or 'reliable'.[16] Stereotypical definitions of physical attractiveness, sex and age are widely shared.

Bruce and Young believe that these stereotypes were derived from a wide range of sources that allowed individuals to correlate 'social information' with physical appearance.[17] Media representations provide a rich source of stereotypes that serve to reinforce the idea that criminals have a particular look, for instance asymmetrical faces.

In a recent TV series on the face, Joan Rivers remarked that 'people who think appearances don't matter simply haven't thought about it enough.'[18] A dermatologist on the same program observed that the villains in Hollywood movies usually have poor complexions, and this sort of casting continues to code ugliness as evil.[19]

While efforts to overturn stereotypes of criminality had made some headway prior to 2001, events in the United States on September 11, allowed their revival in the form of a hunt for terrorists.

Enemies at the Gate

By December 11 2001, the populist rhetoric of the *War on Terror* and the *Axis of Evil*.[20] had been consolidated and the enemies of freedom and democracy had been identified as mad, bad foreigners. President Bush stated emphatically that:

> The great threat to civilization is that a few evil men will multiply their murders and gain the means to kill on a scale equal to their hatred. … they have this mad intent.[21]

Perhaps the most bizarre incident of the *War on Terror* concerned the deaths of three civilians in the remote village of Zhawar Kili, in eastern Afghanistan. Mir Ahmad, Daraz and Jahan Gir were

collecting scrap metal from the war on a hillside when they were killed by a US Hellfire missile, shot from a CIA-run Predator drone.[22] Mr Ahmad had been targeted because he was tall, as tall as Osama Bin Laden the most wanted man in the world. Based on ridiculously scant information about bodily dimensions, remote weaponry was deployed with predictably horrific results.[23]

On October 8 2001, Governor Ridge was appointed to lead the newly established Office of Homeland Security (HSAS), assembled specifically to coordinate the previously separate and independent information gathering, policing, and control bodies.[24] Biometric technologies were singled out as important tools in the *War on Terror* and in the quest for *Homeland Security*, remote scanning devices, video, fingerprints, voice-prints, face prints and 3D facial reconstruction would be at the forefront of national defense strategies.

The Biometric Solution

The reorganisation of national security around biometrics draws on research and technology that has been in development for a little over a decade. Many of the surveillance techniques designed to detect potentially criminal behaviour have provided policing agencies with the power to analyse physical characteristics, identify individuals and trace their movements in unprecedented ways. The main attraction of these systems is that they can be automated or semi-automated, they can handle large amounts of data, and, at least at first glance, they appear to be relatively covert and non-invasive. The weakness of Closed Circuit Television, what biometrics was designed to replace, was that it was often plagued by human error, testing the limits of the average concentration span.

The ideal automated surveillance system relies on digital video for image capture, isolates unique physical identifiers of the subject, and is validated by reference to a specific database, or in some cases, a network of linked databases. The most highly developed systems to date, rely on the mathematical analysis of facial characteristics, hand and palm geometry, retina and iris scanning, the analysis of fingerprints, gesture, gait and voiceprints.

Face Recognition Technology

Face recognition appears to be the most widely discussed technology in the scientific literature on biometrics. There are two main technologies in this field dominated by the companies Viisage and Visionics.

FaceIt (Visionics), works 'by measuring the geometry of the human face, isolating specific facial markers such as the placement of the eyes, nose and mouth and then reducing the information to a mathematically expressed algorithm.'

Eigenface developed by Massachusetts Institute of Technology Media Lab, and marketed by Viisage, uses Principle Component Analysis (PCA). Eigenface works in a method similar to the *portrait parle*[25] developed by Bertillon, in that its primary reference point is a collection of all known variations of each facial feature.

Face Recognition Trials

In September 2001 the FaceIt system was used by police in East London, Britain, with the aim of identifying criminals in the street. Over the course of six months the system's precision was questioned when only one known criminal offender was identified, though the system also delivered three false-positive identifications per day.[26]

FaceIt's ability to capture face images in crowded areas was so poor that on a typical night, it yielded only 457 faces out of an estimated crowd of 125,000 people. It produced no positive identifications or arrests and in the Tampa, Florida trial, fifteen percent of false positives identified subjects as the wrong sex.[27]

Automated Facial Expression Analysis

Paul Ekman who has had a long career in the analysis of facial expression has recently turned his attention to automated systems. From his fieldwork he concluded that some forms of nonverbal

communication were widely shared. Since 1993 Ekman has been working towards the development of a 'computerized neural network system to decode facial expression in dynamic situations'.[28]

In biometrics there have been some attempts to identify people who look 'hostile' or whose facial expression mark them as a security threat.

Gesture Analysis

Gesture Analysis[29] is a semiotically-based technique developed by researchers more concerned with the whole body than a close focus on a single physical feature. Gesture analysts believe that human movements provide an important key to decoding psychological states.

Behaviour Track technology, developed by Loronix, a partner of Visionics, has been designed as an intelligent system of gesture analysis. Based on pattern recognition it monitors defined spaces for movement, and 'learns' to recognise specific forms of behaviour by accumulating a set of often-repeated gestures that can be broadly defined as normal. It is designed to alert security when movement patterns change unexpectedly or when it detects behaviour that matches a template of actions or events classified as suspicious.[30]

Race Profiling

African Americans are more likely to be identified as suspects, stopped and searched by police, and civil rights activists have called this 'DWB syndrome', 'Driving while Black'.[31]

Supported by constitutional law, and a healthy dose of paranoia, biometric technologies have reinscribed longstanding stereotypes of racialised criminality. By October 2001 racial profiling had begun to shift away from African Americans towards a target group considered much more of a threat, Muslims and people of Middle Eastern descent. A typical case occurred when Vadid Zohrehvandi from Dallas Texas, was removed from an aircraft because 'the pilot did not like how (he) looked.'[32]

Conclusion

Automated face recognition, facial analysis and gesture analysis software is underpinned by the idea that certain anatomical characteristics, facial configurations, gestural expressions and behaviours are universal, rather than specific or framed by the context in which they appear. Such broad classificatory systems inherently reproduce longstanding stereotypes of criminality, race and gender that can be traced back to the nineteenth century, particularly the work of Alphonse Bertillon and his predecessors.

While biometric technologies promise a new level of precision in the identification of individuals, they have consistently failed to deliver up offenders. What they have achieved is to inscribe new boundaries of citizenship and privacy based on racialised physical appearance, as well as introduce a disciplinary regime that sets new norms of behaviour.

Clearly stereotypes of the criminal have been surprisingly enduring, so too have the systems of body measurement and facial analysis.

Gary Settles, a mechanical engineer at Pennsylvania State University, is currently developing a portal for use in airports that captures a plume of air that naturally rises from the body and analyses it for 'explosives and chemical or biological agents…drugs, diseases, skin disorders, some cancers, diabetes' and DNA samples.[33] This allows security to shade into forensics or even medicine, folding health and ancestry into criminality.

Although the theories and social contexts I have described are vastly different, there has been a certain consistency to the body of knowledge assembled about the physical attributes and visual appearance of groups of people described as criminals.

This body of knowledge is firmly entrenched in what Stafford has described as the ‘optical fundamentalism’ of the Enlightenment, where seeing and knowing were inextricably bound.[34] Theories such as those put forward by Lavater, interpreted the surface of the body in terms of ancient constructs

in which beauty was regarded as a sign of goodness and truth, and ugliness was interpreted as a marker of the sinful and the monstrous.

The emergence of new techniques of surveillance have broadened classifications of deviance in such a way as to criminalise larger sections of the population whose physical appearance, living conditions and social practices fall outside middle class norms. Such broad classifications have in turn authorised greater surveillance and policing over these groups. The most striking example during the nineteenth century, was the way in which poverty and disease were described as threats to social stability through the theory of the *born criminal*. More recently during the *War on Terror*, people of Middle Eastern appearance have been described as potential terrorists and threats to the safety and security of people in all developed Western countries. Stereotypical representations of physical appearance as an infallible indicator of class, education, mental capacity or even political affiliation have rested on claims to scientific impartiality that have invested the modern scopic regime with tremendous authority.

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