PORTRAITS AS SURVEILLANCE INSTRUMENTS:
from anthropometry to biometric faces

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Abstract

As a cultural creation, the face has a long history. Our relationship with the face is through its images: Mirrors, reflections, photographs, visions. The experience about the face deserves a genealogy, a careful attention because it is the product of a cultural construction that establishes the social status granted to the person. Different mediums of the image persisted in making faces visible or recognizable. The anthropometry of the 19th century established a new relationship between the face and the Self. Photography allowed us to explore, measure and classify the images of the face and of the human being. This explains the fascination with photography in Bertillon and Darwin. At the same time, the arrival of photography also opened the way to the era of the democratization of the face. But the images of faces that we will approach in this article are images produced by techniques of reconstruction and facial recognition based on biometric and genetic data. Biometrics seeks to recognize individuals through physical and behavioral traits, articulating an image technique with mathematical techniques. Even portraits have become instruments for surveillance. This responds to the conditioning of an apparatus that captures and determines behaviors and discourses. As Giorgio Agamben argues, certain apparatus have imposed themselves as spatial optical articulations, but also epistemic, political and ideological, capable of assuming a specific conception of the vision and position of the subject in front of the world. We define the face as an apparatus. If the history of the portrait pictures theory, as proposed by W. J. T. Mitchell, in relation to the history of the development of the process of individuation of the self, genetic biometrics dissolves it completely, since it is not a measure of the human but its negation.

Keywords

Portrait; Anthropometry, Biometric image, Face, Visual Culture.

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Resumo

Como criação cultural, o rosto tem uma longa história. Nosso relacionamento com o rosto processa-se através de suas imagens: espelhos, reflexões, fotografias, visões. A experiência acerca do rosto merece uma genealogia, uma atenção cuidadosa, porque é o produto de uma construção cultural que estabelece o estatuto social concedido à pessoa. Diferentes meios da imagem insistiram em tornar os rostos visíveis ou reconhecíveis. A antropometria do século XIX estabeleceu uma nova relação entre o rosto e o sujeito. A fotografia nos permitiu explorar, medir e classificar as imagens do rosto e do ser humano. Isso explica o fascínio pela fotografia nas obras de Bertillon e Darwin. Ao mesmo tempo, a chegada da fotografia também abriu o caminho para a era da democratização do rosto. Mas as imagens de rostos que abordaremos neste artigo são imagens produzidas por técnicas de reconstrução e reconhecimento facial baseadas em dados biométricos e genéticos. Reflectem a imposição de um rosto incorporando perfeitamente os discursos onde todos os cidadãos se tornam suspeitos em potencial. Isso responde ao condicionamento de um dispositivo que captura e determina comportamentos e discursos. Como argumenta Giorgio Agamben, certos dispositivos se impuseram como articulações ópticas espaciais, mas também epistêmicas, políticas e ideológicas, capazes de assumir uma concepção específica da visão e da posição do sujeito diante do mundo. Definimos o rosto como um dispositivo. Se a história do retrato apresenta a teoria, conforme propõe W. J. T. Mitchell, em relação com a história do desenvolvimento do processo de individuação, a biometria genética dissolve-o completamente uma vez que não se constitui como uma medida do ser humano, mas a sua negação.

Palavras-chave

Retrato; Antropometria; Imagem biométrica; Rosto; Cultura Visual.

Introduction

At the end of the 19th century, Alphonse Bertillon, an employee of the Prefecture of Paris, invented the *signalement anthropométrique*, a system of recognition of people based on the detailed measurement of height, feet, hands, noses, ears as well as photography Front and profile (Figure 1). The combination of these measures constituted only information that allowed finding the wanted person among millions. Bertillon's techniques posed a real transformation of forensic practice. But the photographic medium also became a revolution in the scientific field. For example, in 1872 Charles Darwin's book *The Expression of Emotions in Man and Animals* presented a detailed study illustrated through photographs of the human gestural universe. The image was an incomparable ally to display its taxonomic impulse. Bertillon himself put it into practice when he began to photograph front and profile the suspects and criminals whose images became part of extensive archives. But the arrival of photography also opened the way to the era of the democratization of the face. The social explosion of photographic portrait corresponds to the combination of an increasingly comfortable use technique and the access of a growing population to the awareness of its uniqueness (Le Breton, 2010: 42).

Alongside this process, social conflicts during the 19th century led to the growing interest of States to control a population that "took the streets". Just as photography personalized subjects, it was also a vehicle for its control. Name and image became the two key elements of the photographs as an undisputed medium bearer of police practice. Recognizing faces became a state matter and photography was their main ally. In 1878, Alphonse Bertillon developed an anthropometric

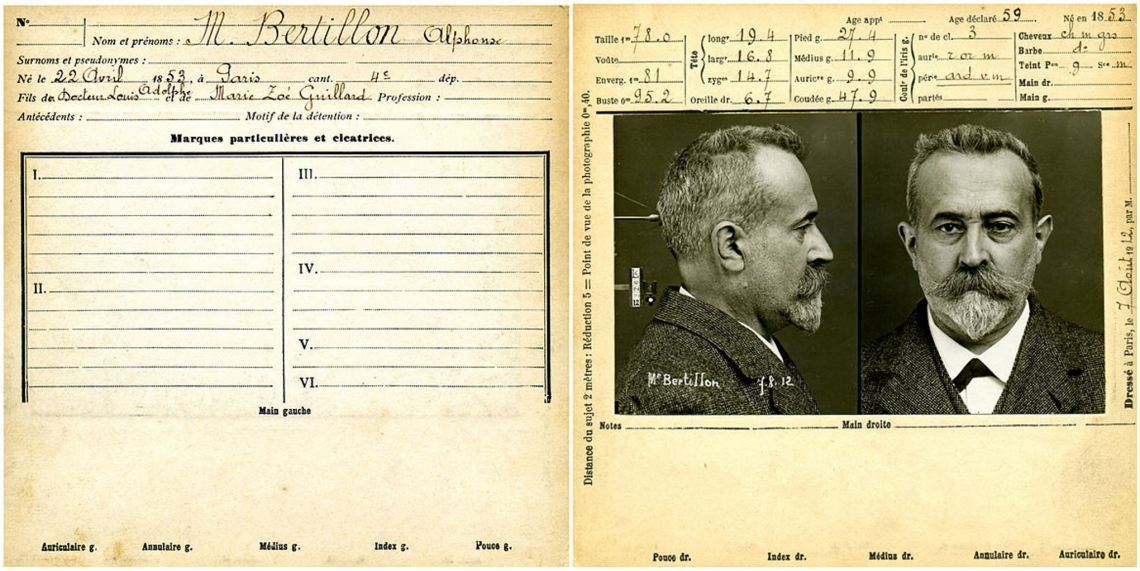

Figure 1 — **Alphonse Bertillon.** Self portrait, 1912. Reproduction of image, via Getty Images.com.

system that became the basis of current facial recognition control systems. Bertillon's idea was simple but effective. A file of the detainee was created, it was identified from a series of measures of his body and he was photographed. It establishes a series of basic parameters for the photographs of the faces of the detainees: maximum collection of information and absence of emotions. As Bertillon himself points out a *physiognomic rictus* is obtained, a facial contraction that characterizes individuality better than any other expression (Le Breton, 2010: 47).

Photography is a medium of the image. As such, it is intimately connected to the development of imaging techniques. The face of the pictorial portrait shows a deadly face with which we are obliged to establish some type of communication through the medium. The frontal gaze was a central element since it gave shape to a true body concept that also transformed the image concept (Belting, 2007: 156). The portrait is not a document but a medium of the body that exhorts the viewer to participate. It is a medium to activate the gaze since it is conceived as an exploration and description of the subject. Later, with photography, the analogy between image and body was elevated to the index category of the body, since it was based on the confidence that the image was capable of representing the real human body of the

human being. The images of faces that we will approach in this article are not portraits. They are images produced by new mediums and techniques of the image. They respond to the conditioning of new apparatus of the gaze that have been imposed as optical spatial articulations, but also epistemic, political and ideological, capable of assuming a specific conception of the vision and position of the subject in front of the world. In that sense, it is suggestive the recovery that Agamben makes of the concept of *oikonomia*, its translation into Latin as *dispositio* in the theologians and the inheritance of these in the concept of *apparatus* in Foucault. This genealogy of the concept of *oikonomia* refers to an economy, that is to say «to a set of praxis, of knowledge, of measures, of institutions whose purpose is to manage, to govern, to control, to guide, in a sense that is intended useful, behaviors, gestures and thoughts of men» (Agamben, 2007: 8). The pictures of the face are part of an apparatus of the gaze where image, trace, similarity and body are concepts to review. As W.J.T. Mitchell argues, a new version of the pictorial turn has taken place in our time, exemplified by the process of cloning, which has become a powerful metaphor as well as a biological reality with profound ethical and political implications (Mitchell, 2009: 20). The portrait and the face as the place of difference translate the uniqueness of the individual. No space is more appropriate to demarcate that singularity. But the history of the face, which is also the history of its images, as a process of individuation of the self, dissolves in the era of the biometric image.

Give/Impose a Face

In recent years, a large number of image techniques have made it possible to give a face to people from the past. This is an interesting example of analysis in regard to the use of images, not only in the forensic field but in the humanities. The fascination to give a face is the fascination to find a gaze. The search for these faces oscillates between forensic and indexical practice and the evocation of a gaze produced by the pictorial medium. Both the portrait that proposes a gaze that looks at us, and the works in which we find ourselves as voyeurs, both types of staging

prove to what extent the western culture of the image was fascinated by the gaze, whether public or private (Belting, 2007: 74).

A Cambridge research group, using a facial reconstruction technique, has given life to the face of a man who lived 700 years ago in that locality of England. His remains were found among 400 burials under the Old Divinity School of St. John's College, in Cambridge, during the excavations carried out between 2010 and 2012. The reconstructed face, called *Context958*, belongs to a man over 40 years old (Figure 2). The study of his bones allowed to determine that he had been a worker and put a face to a person not belonging to the nobility. The face of *Context958* was reconstructed through techniques that allow the scanning of the skeletal remains, thus giving shape to the face and appearance that a third person may have had. The frontal gaze evokes without a doubt the insistence of the pictorial portrait in investigating on the look. These techniques are not exclusive to the contemporary world, different procedures have been going on in the process of reconstructing f aces, as is the case with the skull of Johann Sebastian Bach or the peculiar case of mortuary masks. An emblematic case is that of *Mengele's Skull* (Keenan & Weizman, 2015), an iconic case in the history of the development of forensic techniques for human rights. That high voltage skeleton, as Ferrándiz calls it, is a skeleton that allowed us to go beyond the witness's voice to find that of the bones. These techniques, as Keenan and Weizman put it, do not offer immutable truths and have also built an «elaborate aesthetic and an effective art of persuasion».

Reflecting on contemporary visual culture means understanding that the image is presented in a specific cultural context and is determined by a whole series of material, technical and spatial factors. These factors are what structure the medium of the image, its supports and apparatus where they are incarnated. With the passage to the digital the question of support becomes decisively more complex. The ways in which an image can be produced, reproduced, visualized, manipulated, archived, transmitted and shared depend on the nature of the supports (Andrea Pinotti & Somaini, 2016: 138). New media of the image confront us with the

Figure 2 — *The face of Context 958.* © Dr. Chris Rynn, University of Dundee. Image reproduction, via University of Cambridge.ac.uk.

complex relationship established between them as well as media from the past, such as photography or cinema. Facial recognition techniques and systems based on complex algorithms that operate from colossal databases of photographs that circulate in the networks or are captured by security and surveillance cameras introduce new questions regarding the medium of the image and the images of the body. The current medium of facial image has become highly complex apparatus. That is why the history of images and the gaze can also be considered as a history of the techniques of the gaze and the apparatus. As W.J.T Mitchell points out, the images are not mere ornaments of discourse but structuring analogies that give form to a whole episteme (Mitchell, 2009: 51).

An example of these new technologies is the discovery of the skull of Richard III of England in a parking lot. The facial reconstruction of his skull revealed how the king would have looked like (Figure 3). The historian John Ashdown-Hill said that seeing him was «almost like being face to face with a real person». The member of the Ricardo III Society, Philippa Langley said that it did not seem the face of a tyrant because «he's very handsome. It's like you could just talk to him, have a conversation with him right now» (*Reconstructed face of Richard III*, 2013: para. 8). The comment is almost a physiognomic impression in the sense given by Lavater in

Figure 3 — Facial reconstruction of King Richard III based on the bones unearthed beneath a parking lot in Leicester, England. © Richard III Society. Image reproduction, via National Geographic.com.

his book *Physiognomische Fragmente* (1775-78): the first impression that gives us distinctive signs with moral qualities. The language collects those images and metaphors, "lost look", "sinister eyes", "cruel mouth". Langley immediately identifies the physical features of Richard III with moral virtues that — we could say — were attributed to the monarchs in the *Espejos de Príncipes* and Emblems. In fact, the specialists who participated in the reconstruction of the face of Richard III, after having identified the remains by medium by a DNA test, pointed out that when they saw the face they felt in the presence of the King. The physiognomist does not look for the individuality that distinguishes one face from another but classifies the singularity under generalities, to classes of characters, subordinating the singular in general (Le Breton, 2010: 57). A semiological method that turns certain particular features of the human face into clues, to the point of being able to "wear a face".

The project *Face Cages*[1] of Zach Blas alludes to the violence of the biometric measurement to which we are subjected daily (Figure 4). In this project, Blas summoned four queer artists to generate biometric diagrams of their faces that were then constructed in 3D in metal, material that by itself evokes the bars, prisons, objects of torture. The objective of this work is to demonstrate the way in which these seemingly infallible measurement technologies are actually boxes in which they try to reduce individuals: the violence of matching biometric data with subjects that do not fit within those parameters. Biometric measuring machines generally fail to recognize non-normative features on which violence and criminalization are then exercised. In the exhibition "Stranger Visions" (Figure 5) by the artist Heather Dewey-Hagborg, we are confronted with faces printed in 3D, reconstructed from the DNA found in chewing gum and cigarettes in the street. To what extent can you define characteristics of the human face from genetic traces and what are the limits of genetic surveillance? One of these technologies, *Snapshot*, which consists of a system created by the company Parabons Nanolabs, does not need real witnesses to produce an image of a suspect's face since it uses the traces of his DNA. Dewey-Harborg points out that the analysis of the procedures applied by this technology process algorithms that demonstrate a clear racist bias. «Snapshot does not offer descriptors of specific facial features, only a visualization to stereotype». For example, one of the first portraits by *Snapshot* in 2011 featured the face of a man 92% African West, 8% of northern Western Europe. As Harborg points out, «There are no descriptors of specific facial features here. This is a generic portrait of an African-American male that serves to publicly disseminate the visualization of a stereotype». These technologies are classification technologies that are based on racial discourses and are articulated with devices of the gaze defined by the principle of vigilance and control. From anthropometry to genetic surveillance, it seems evident the way in which certain apparatus have been imposed as capable of assuming a specific conception of the vision and the position of the subject in front of the world. As we mentioned in the case of *Face Cages*, Harborg also suggests the

Figure 4 — **Zach Blas**. *Face Cage 3*: endurance performance with Micha Cardenas, 2013-2016. Photography by Christopher O'Leary. Image reproduction, via ZachBlas.info.

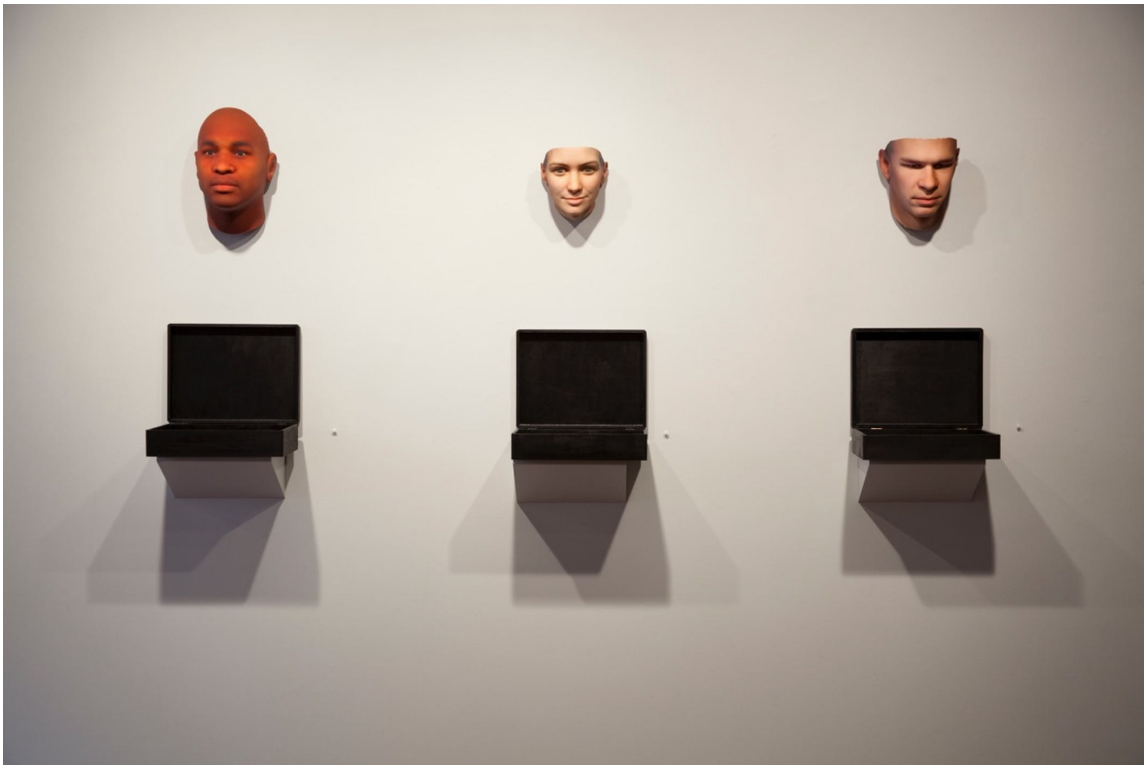

Figure 4 — **Heather Dewey-Hagborg**. *Sample 2*: Stranger Visions portrait based on the DNA sample from a cigarette butt collected on Myrtle Avenue in New York City. Image reproduction, via Dewey Hagborg.com.

way in which these technologies use algorithms that are incapable of addressing differences in terms of gender, since they operate based on the sex of people and not on their gender. That's why «to the women, the program tends to represent them with an angular face or thin eyebrows, and makes obvious mistakes. The appearance of a person who has modified his sex cannot be determined by his chromosomes» (Otal, 2016: para. 37).

The apparatus as an «instrument of action that is concretized in practices, which in turn trigger processes of subjectivation that in the contemporary tend to be altered and become processes of de-subjectivation, reduction from subjectivity to an abstract position in a society that tends to become increasingly panoptic» (Agamben, 2007: 13). Although it seems a science fiction theme, facial reconstruction based on genetic data is a reality. The procedure known as montage of molecular photos is used to reconstruct faces of criminals through their DNA. In 2015, for example, the

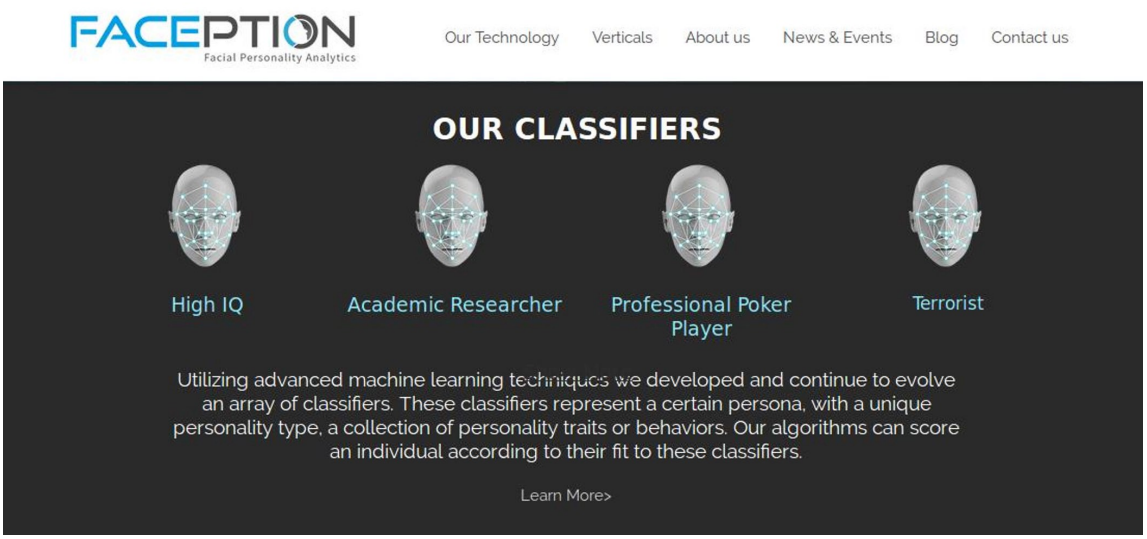

Figure 6 — *Faception*: homepage caption, via Faception.com as accessed on 12/10/2018.

firm Ogilvy & Mather created a campaign in Hong Kong called *The Face of Litter*, using the technology of *Snapshot* DNA to reconstruct the face of citizens who throw garbage on public roads from the remains of their DNA in the waste. The company Parabon Nanolabs, founded in 2008, is again the one that offers the development of this type of technologies that use DNA. From the perspective of Visual Culture, we can affirm that the mediums are more than just technical materialities. They are culturally and historically situated and contribute to the way in which images circulate, are produced and transformed. With the internet, the circulation and production of images became global and are characterized by their appropriability and ability to be shared. The modes of production of images within visual culture 2.0 are crossed by the logic of the trace and the evidence. The image techniques used for scientific, forensic and military practice are also a new visual culture that invades as gesture and practice elaborated and fascinating sites, YouTube accounts, Instagram and forums where thousands of users accumulate their images as a global archive of Free access for companies such as Google, Facebook or Microsoft. These control technologies at airports, companies and institutions are marketed by companies such as NEC's NeoFace Watch that allows automatic recognition of the face through photos, images from security cameras, video recordings and webcams.

Something that was firstly conceived for the cameras to recognize faces and smiles, was applied to social networks where it is possible to label the faces that are identified in the image as human, thus, setting the culmination of the process of individuation of the face. If photography democratized the face, the new digital media seem to impose it, embodying to perfection the discourses on security itself where all citizens become potential suspects. That is why the face can be understood as an apparatus. An image capable of reducing and standardizing or reducing and identifying the individual. These new techniques of image production evoke Bertillon's metric photography as well as 19th century anthropometry. But as Agamben suggests Bertillon's apparatus did not allow crime to be prevented but to condemn the culprits. That was the basis for the security concept of the Physiocrats: only when the crime has been committed can the State intervene. Currently there is an absolute and unlimited control of the biometric data of all citizens. The direct relationship that is established between genetic determinant, image of the face and personality is proper not only of the idea of the measurable and visible, formal and structural dimensions of the human face but of its direct connection with determinants of behavior, completely excluding any explanation social, cultural, historical, religious or identity. The biometric images respond to the field of what W.J.T Mitchell denominates bio-images, those that comprise of the field of the genetic manipulation and question the old categories of image and similarity. Images are no longer recognized within the dualism of the apparent and the real, the false and the true. The concept of apparatus proposed by Agamben can be applied to these technologies of the image of the face. These kinds of technologies are not exclusive of state control over spaces such as airports and streets, but they are also widely used in the private sphere. Facial recognition services are offered to control workers in companies. Google and Facebook have launched to the competition in this field.

On the one hand, *Google* has launched *FaceNet*, a system created by training neural networks on a database of 260 million images. According to Google, the

system is able to recognize a face 99.96% of the time. The result was obtained by testing an algorithm with a base of 13 thousand portraits on the Internet, among which FaceNet had to find those that belonged to the same person. For its part Facebook presented *DeepFace*, naturalizing for its users the development of a facial recognition technology, with a 97.25% efficiency compared to 97.5% of human efficiency. A particular case is that of the Israeli company *Faception* (Figure 6) it proposes a facial recognition system that, in addition to identifying us by our face, seeks to decipher the features of our personality and our possible behavior. According to the company, this system uses learning algorithms to predict the behavior of the individual. One of the slogans on his website is more than suggestive: "We live in a dangerous world". The interesting thing about these systems is that they add the contributions of artificial intelligence to be able to predict and decipher human expressions and behaviors. Human behavior is reduced to the projections of an algorithm. *Faception* is a contemporary version of the ancient physiognomic tradition. Although it also seems like the facecrime in the Newspeak of the 1984 novel by George Orwell: «In any case, to wear an improper expression on your face (to look incredulous when a victory was announced, for example) was itself a punishable offense. There was even a word for it in Newspeak: facecrime, it was called» (Orwell, 2016: 79). Orwell's crime scene is one captured by security cameras and police forces in protests, in airports, in social movements of struggle, among non-normative groups. To give face to the Other is to sign it inside the global visual file. As Agamben points out, «The growing multiplication of security devices reflects a change in political conceptuality, to the point that it can legitimately be asked not only if the societies in which we live can still be described as democratic, but also and above all if they can still be considered as political societies» (Agamben, 2014: 20).

Desecration of the face

In front of software like *Faception* which declares the direct relationship between the face and the criminality, the face and the personality — we find from the field of art and visual studies a project like *Escaping the Face: Biometric Facial*

Figure 7— **Zach Blas**. *Militancy, Vulnerability, Ofuscation.* Tableau vivant detail, Facial Weaponization Suite: a Mask-Making workshop, performative Nanorobotics Lab, UCSD, June 7th, 2013. Image reproduction, via ZachBlas.info.

Recognition and the Facial Weaponization Suite. Zach Blas poses as a criticism of biometric facial recognition systems, based on the construction of collective masks. Taking the biometric data of the participants of the workshop, the result obtained is a collective mask, which allows participants to use the faces of others. The concept of mask is suggestive. Masking can at first sight be a gesture of concealment. But that concealment is also a liberation from the demands of imposed identity. The face, says Blas, has become a "mode of governance" and at the same time an oppressive force. The collective mask, as a subtraction of the identified face by the security cameras, is not the disappearance of the individual but the pointing of the face as a space of resistance and struggle. The techniques of producing images give us a face; they impose a face on us. So «If the face is a policy, undoing the face is also another policy, which causes the real becomings, a clandestine future. Undo the face is what same as crossing the wall of the signifier, leaving the black hole of subjectivity» (Deleuze & Guattari, 2008: 192).

We associate the face in a way too natural and familiar with the expressions of our self and that of others. But as David Le Breton points out, people have not contemplated his face since always or under the same conditions or the same fears. The images of the face are inseparable from their own existence. The feeling about the face deserves a genealogy, a careful attention since that feeling is the product of a cultural construction by which, from modernity, the social status granted to the person is determined. In the Middle Ages, the face was not the object of a specific value. The body was not the limit of a person, but a cosmogony.

The 12th century saw the birth of autobiography, as a symptom, as the birth of the person, owner of his own memories, of his own images, of a face that shelters him, that yearns, dreams or forgets. Slowly the face acquires psychological, expressive features. From the Renaissance on, the face is given a special place through portraiture. The modern human being possesses the body as a factor of individuation, separate from the others, from himself and from the cosmos (Gutiérrez De Angelis, 2016). Anthropometry established a new relationship between the face and the Self, a new measure of the human. Photography allowed us to explore, measure and classify the images of the face and of the human being. These images were based on observation, privileging measurable criteria that were given a central importance to establish relationships between physical features and behavior. The images of the body and face became measurable variables, in a territory of control and surveillance. If the history of the portrait pictures theory, as proposed by Mitchell, in relation to the history of the development of the process of individuation of the self, genetic biometrics dissolves it completely. Biometrics seeks to recognize individuals through physical and behavioral traits. When articulated with an image technique and a specific medium, it applies mathematical and statistical techniques on the physical or behavioral traits of an individual to recognize and identify. Unlike anthropometry, biometrics does not propose only the measurement of the human being but the biological knowledge of the individual. The new measure of the human is nothing but its denial. How to undo that imposed face, static, devoid of

ambivalence and gaze? Agamben has suggested the provocative concept of "desecration", coming from the sphere of Roman law and religion. According to Roman law, things that belonged to the gods were sacred. As such, they were subtracted from free use. Sacred designated the exit of those things from the sphere of human right. On the contrary, desecrating meant restitution to the free use of humans. The desecration of the face, as a device, becomes an urgent matter. Restitute it as a space of sovereignty, too.

NOTES

1 Project homepage available at http://www.zachblas.info/works/face-cages/.

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