Control—Privacy—Agency

COUNTER / SURVEILLANCE

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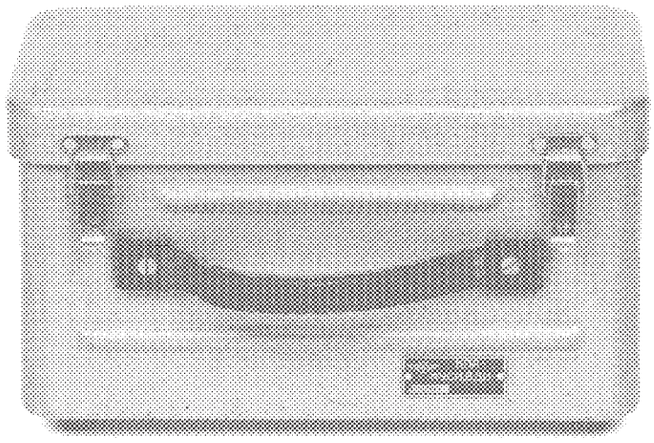
Edited by Marieke Drost and Joes Segal

Wende Museum



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WA7LXM
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DIRECTOR'S FOREWORD

I still remember the stale smell of the basement in Berlin where I first encountered some of the items exhibited in *Counter/Surveillance: Control, Privacy, Agency*. It was packed with surveillance equipment that had once been used by the Stasi, the notorious East German secret police. There were CCTV cameras that formerly monitored people's daily activities, machined metal cases that housed reel-to-reel recording devices, and a pile of walkie-talkies with battery acid oozing out. A few eagle-eyed scavengers had salvaged these spy tools from dumpsters containing the former contents of Stasi warehouses during the period known as Die Wende (1989–1990), when the Cold War order dissolved and a reunified Germany was on the horizon.

In 2002, when the Wende Museum was founded halfway around the world in Culver City, California, the spying devices in that Berlin basement were only just becoming historical objects, no longer overlooked as old and unwanted. Such moments of transformation and change—which is what the German word *Wende* describes—are essential to understanding the course of history. This is the foundational and conceptual starting place of the Wende Museum.

The once functional, then discarded, now preserved spy equipment I first encountered in that dusty basement is now part of the exhibition *Counter/Surveillance*, which explores the historical impact of surveillance and how it continues to influence the present, as well as our possible futures. Notable among the many striking objects in the exhibition is an encrypted typewriter from the Soviet Union (p. 50). Meticulously crafted, it encapsulates the essence of surveillance and countersurveillance in a bygone era. This typewriter, designed to transform written words into coded messages, was not just a tool—it was an instrument of war. On the flip side, an everyday typewriter hidden beneath the bed of a dissident could have been a lifeline, enabling them to dare to communicate in the face of an oppressive regime, to share their stories and realities with the world. The same tool—the typewriter—could be a weapon for control or an amplifier of change.

The very notion of surveillance conjures an image of the watchful eyes of authority figures peering into the lives of ordinary people. It suggests the intricate dance between those who watch and those who resist being watched, and this relationship is also exemplified by many of the artworks in the exhibition. This tension between control and freedom, secrecy and transparency, is a story that weaves through history and shapes the world we inhabit today. Through art, culture, history, and science, we have the opportunity to reflect on profound and difficult questions, and perhaps to participate in the transformations of our own times.

These questions would not have been brought to light without the exceptional dedication of Joes Segal and Marieke Drost as the curators of *Counter/Surveillance*. Through their insights, the profound impact of the Cold War on surveillance practices today is made vivid. Likewise, the efforts of Emma Diffley, Associate Curator, and Matthew Jones, Curatorial Intern, have been instrumental in organizing the exhibition and accompanying catalog. This curatorial team has shaped a cohesive and impactful presentation of this complex and resonant theme. I cannot overstate the value of the hard work and commitment shown by our entire museum staff. Their unwavering support and expertise have been essential in realizing this ambitious project.

Finally, we at the Wende extend our deepest gratitude to Getty for its support of this exhibition and for the opportunity to participate in PST ART: *Art & Science Collide*. It is an extraordinary honor to join in a region-wide conversation about the intersection of science and art, and how they matter in Southern California and beyond, today and tomorrow. Whereas some of the objects in *Counter/Surveillance* were once used to enforce division, they are now part of a project to bring organizations, communities, and individuals together.

— Justinian Jampol
Founder and Executive Director
Wende Museum

CURATORS' ACKNOWLEDGMENTS

As the curators and editors of *Counter/Surveillance: Control, Privacy, Agency*, we would like to first express our deep gratitude and appreciation to our closest collaborators at the Wende Museum. Emma Diffley, Associate Curator, took the lead in the organizational aspects and logistics, from the exhibition design to the publication of this accompanying catalog. Jamie Kwan, Associate Curator, was instrumental in the early stages of the exhibition, organizing loan requests and image reproduction rights. We also received invaluable support from Matthew Jones, Curatorial Assistant, who facilitated the initial stages of the text editing process.

We are grateful to the lenders of the objects and artworks featured in the exhibition and to those who generously helped make our project possible: Galerie Anne-Sarah Bénichou, Paris (Louise Daviot); Benton Museum of Art at Pomona College, Claremont, California (Steve Comba); Bill and Christy Gautreaux Collection, Mission Woods, Kansas (Michele Glen); ChertLüdde, Berlin (Jennifer Chert); Crypto Museum, Eindhoven (Paul Reuvers and Marc Simons); Czech Security Services Archive, Prague (Veronika Chromá); David Graham Du Bois Trust, Special Collections and University Archives, University of Massachusetts Amherst (Kirstin Kay); Dolph Briscoe Center for American History, The University of Texas at Austin (Marisa Jefferson); Federal Commissioner for the Records of the State Security Service of the Former German Democratic Republic (Stasi Records Archives), Berlin (Dagmar Hovestädt, Benjamin Kahns, Angelika Weiss, and Iris Winkler); Historical Archives of the Hungarian State Security Service, Budapest (Réka Haász); Jessica Silverman, San Francisco (Owen Christoph, Katie Cunningham, and Kathryn Wade); Kolodzei Art Foundation, Highland Park, New Jersey (Natalia Kolodzei); Lithuanian Special Archives, Vilnius (Sabina Lisovska); Museum in der Runden Ecke, Leipzig (Jens Wolf); National Cryptologic Museum, Annapolis Junction, Maryland (Spencer Allenbaugh and Vince Houghton); Rajk Archive, Budapest (Judit Rajk); Sarah Miller Meigs Collection, Portland, Oregon (Andrea Lounibos and Ashley Futrell); University Archives and Historical Collections, Michigan State University, East Lansing (Sarah Roberts); and Van Abbemuseum, Eindhoven (Odilia van Roij). In addition to the aforementioned organizations and persons, we would like to express our deepest gratitude to the private archives and collections of Paolo Cirio, Damara Inglês, Graham Fink, Merryl Goldberg, Yang Jian, Verena Kyselka, Gerhard Lang, Francisco Masó, and Xu Bing Studios.

For their generous advice and support, we thank the following specialists who discussed various aspects of the research project with us: Daniel Asen, Sara Blaylock, Kristie Macrakis, Roland Meyer, Abigail Nieves Delgado, Sophie-Charlotte Opitz, Shaun Raviv, Stuart Schrader, and Tamás Szönyei.

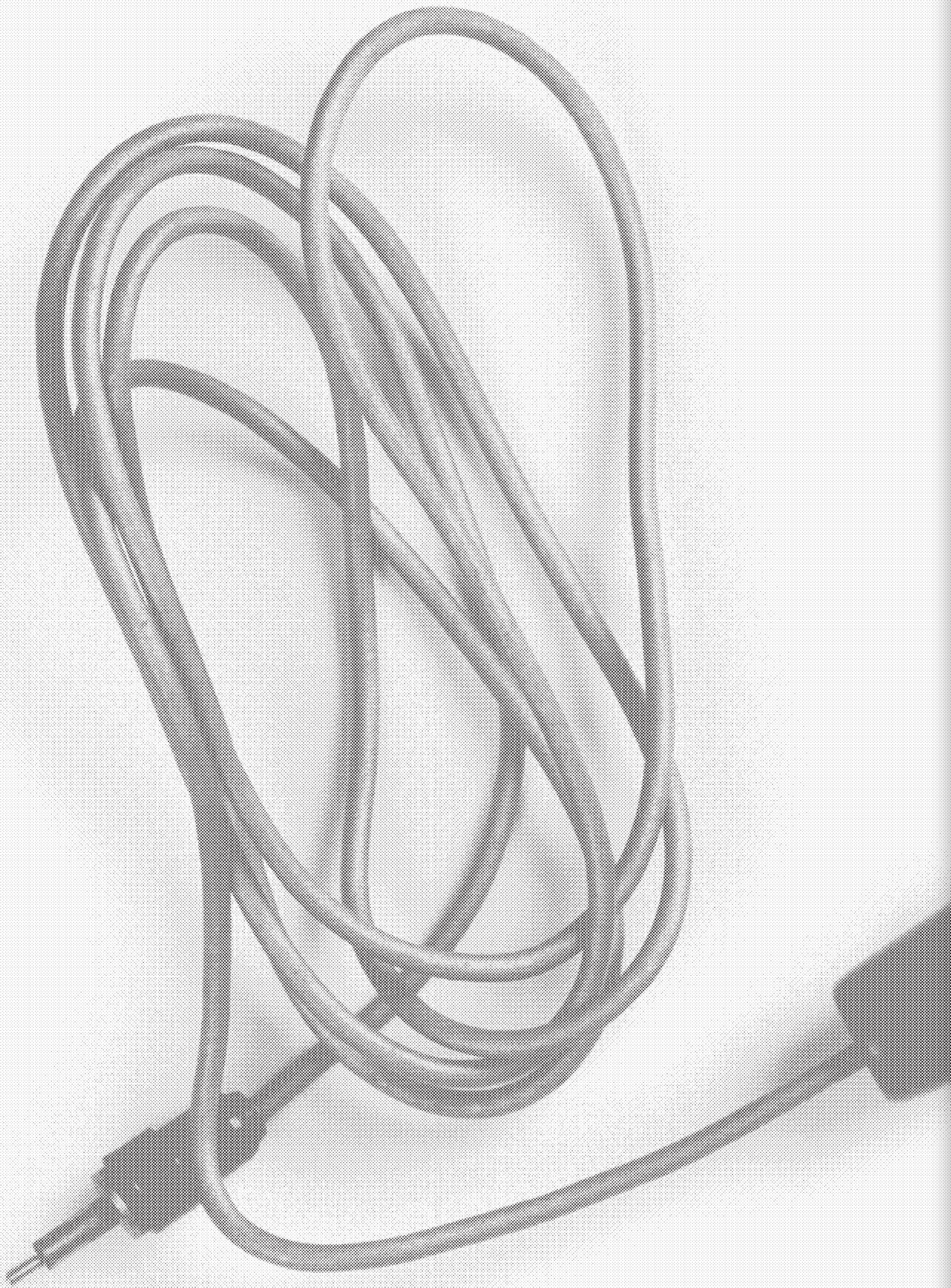
We extend our appreciation to these additional Wende Museum staff members who were directly involved in the exhibition: Michael Balot-Garza, Head of Education; Julian Banks, Head of Facilities; James Canto, Head of Engagement; Andrew Hartwell, Head of Communications; Alfredo Hernandez, Facilities Specialist; Justinian Jampol, Executive Director; Maggie Jonas, Visitor Engagement Lead; Cara Megan Lewis, Deputy Director; Nizhoni McDonough, Visitor Engagement Associate; Christine Rank, Director of Collections; Sarah Richardson, Archives and Digitization Manager; Rachel Rigdon, Events and Programs Manager; Gina Segall, Special Projects Assistant; and Kathryn Ung, Collections Associate.

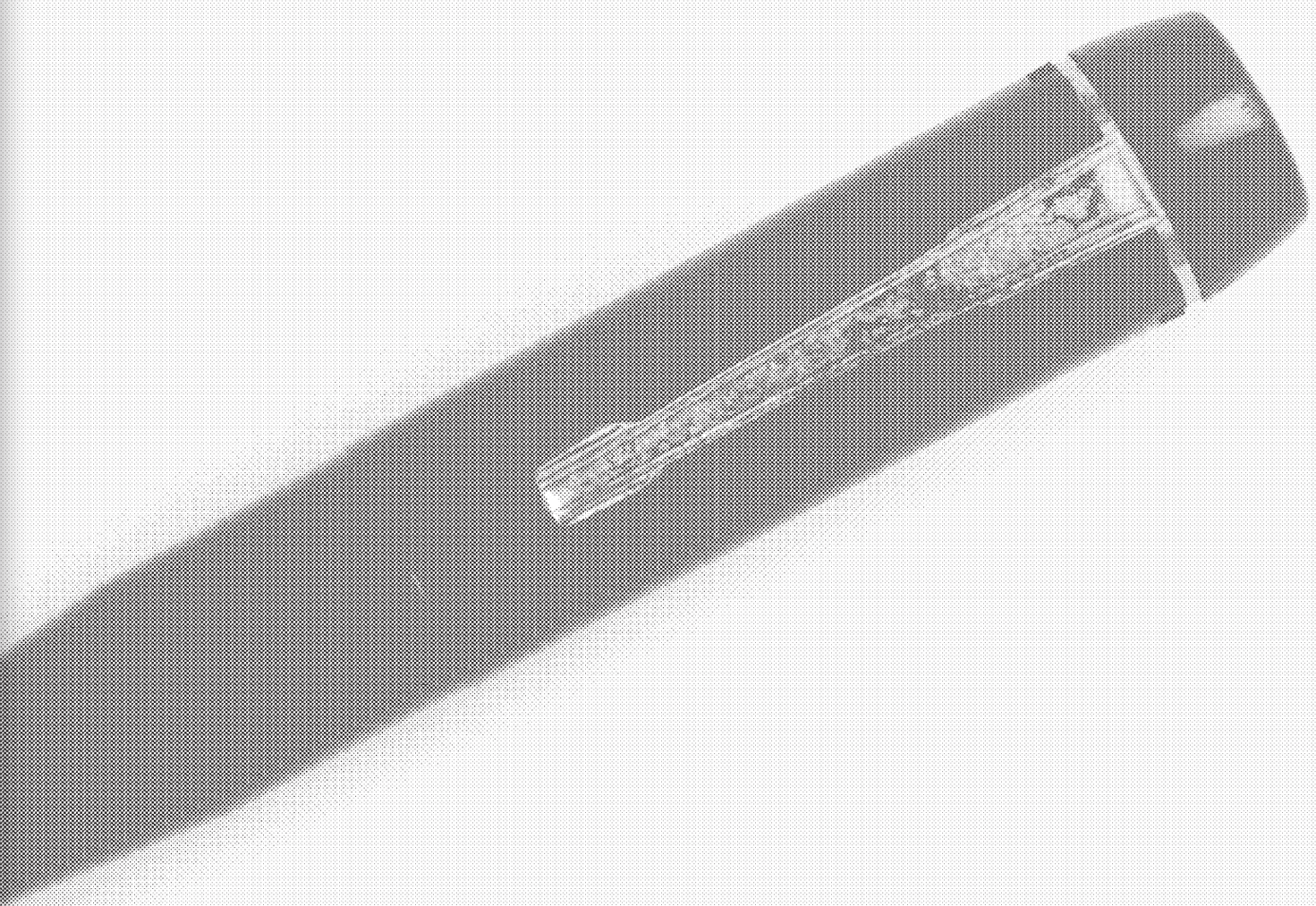
We are sincerely grateful to the artists Ken Gonzales-Day and Liat Segal for their essays in this catalog, and to Paul Reuvers and Marc Simons, founding curators of the Crypto Museum, for sharing their invaluable insights in an interview. We also thank the co-authors of the short texts in the "Countersurveillance" section for their important contributions: Cara Megan Lewis, Matthew Jones, and Nizhoni McDonough. For their continued support of the museum's collection and programming, we extend our gratitude to Arcadia, David Thomson, Skip Victor, and our Board of Directors.

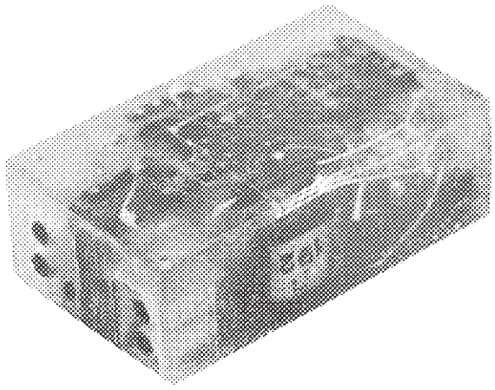
We thank Kimberly Varella of Content Object for the design and realization of this beautiful catalog, as well as Deirdre O'Dwyer, who did a fantastic job editing and, where necessary, reorganizing the essays in the catalog.

Finally, this exhibition would not have been possible without generous support from the Getty-led initiative PST ART: *Art & Science Collide*.

— Marieke Drost and Joes Segal



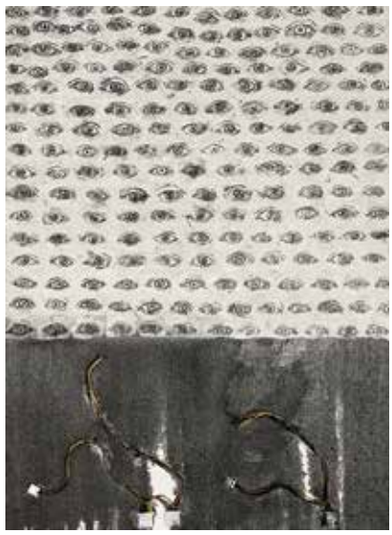




MARIEKE DROST AND JOES SEGAL

INTRODUCTION

Asya Dodina and Slava Polishchuk, *In Your Eyes*, 2011, United States, mixed media on canvas
Courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation

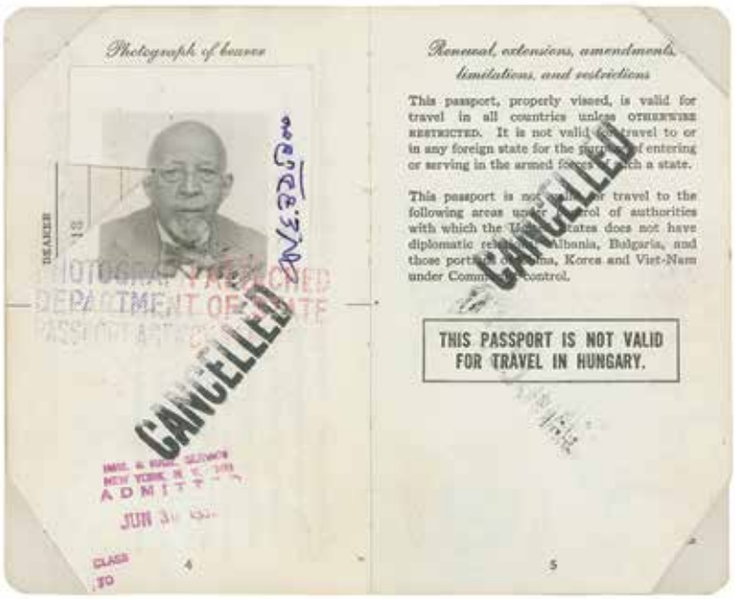


Surveillance technologies are often misleadingly described as unprecedented—devoid of history. *Counter/Surveillance: Control, Privacy, Agency* traces methods of contemporary surveillance to Cold War dynamics, exploring histories and methods of surveillance, both analog and digital, that developed following World War II and up to the present. The *Counter/Surveillance* exhibition and this accompanying catalog demonstrate that, despite obvious power imbalances, dissidents and artists have continuously responded in creative ways to the threats—and opportunities—that surveillance technologies present.

In recent years, technological advances in digital surveillance have tightened control over individuals around the world. While surveillance technologies have long caused concern about invasions of privacy, what is relatively new is that we are being watched by algorithms. Indeed, surveillance is increasingly automated. Devices such as CCTV cameras and voice assistants, which have become common in public and private spaces, are now equipped with biometric technologies such as real-time facial and voice recognition. This combination of classic surveillance hardware with biometric software has dramatically expanded the ability of governments to track individuals. Corporate variants are equally, if not more, pervasive: under "surveillance capitalism," a term coined by Shoshana Zuboff, tech users are nudged to share their personal data, by companies looking to predict, influence, and modify behavior.[1]

The historical threads considered in *Counter/Surveillance* include, among others, "proto-biometric" surveillance methods, scientific research into human vision, pseudoscientific classifications of human variation, and artistic methods for drawing portraits. The exhibition traces the interactions of competing intelligence agencies in the former Cold War East and West, as they traded, spied on, stole, imitated, and reverse-engineered each other's technologies. Exchanges with allies further ensured the worldwide dissemination of surveillance methods.

At the same time, people have always found ways to escape and *counter* surveillance, whether by connecting and communicating "under the radar", repurposing surveillance technologies, or exposing covert operations to the world. The wide variety of civilian and artistic responses on view in *Counter/Surveillance* illustrate that through evading, criticizing, and inventively responding to surveillance—that is, through strategies of countersurveillance—agency can be reclaimed. Ultimately, this exhibition and catalog celebrate human ingenuity. The historic and contemporary artists' projects explored here attest to the power of art to critically reflect on the methods and devices of technology in inspiring ways.



W. E. B. Du Bois's canceled U.S. passport, 1958, United States
Robert S. Cox Special Collections and University Archives, Du Bois Library, University of Massachusetts Amherst

SURVEILLANCE

Generally speaking, surveillance is the gathering of information to control, influence, and manage people's actions and behavior. It encompasses the efforts of property owners to guard neighborhoods and residences, businesses to spy on the competition and sometimes their own employees, and police and border guards to watch suspects and protect national borders. In recent years, following the onset of the COVID-19 pandemic, schools have used activity-monitoring software to surveil students, while various governments have developed contact-tracing apps to track the virus's spread.

Identification technologies have long been a crucial aspect of government surveillance: personal details such as photographs and physical descriptions are gathered through ID cards and passports, and amassed in databases to enable bureaucratic tracking, control, and repression tactics.[2] Governments use surveillance to watch not just crime but also political opposition and dissidence—potentially to suppress it. States have historically refused passports to individuals deemed suspicious. In the United States, the passports of people suspected of sympathizing with communist organizations were canceled during the "Red Scare." In the Eastern Bloc, not only were countless dissidents and artists prevented from emigrating, but most people were forbidden to travel internationally.

Following World War II, the secret services of the Soviet Union and East Germany, respectively the KGB (Committee for State Security) and Stasi (Ministry for State Security), became synonymous with invasive monitoring of people's private lives. While liberal democracies have usually had more limitations on state surveillance than authoritarian regimes, secret services worldwide have tended to cite state security reasons in order to operate in the gray zones of the law, or what philosopher Susan Buck-Morss describes as "the wild zone of power."[3] Intelligence and security services in the United States had few checks and balances in the early Cold War years, but revelations in the 1960s that the FBI (Federal Bureau of Investigation) and other intelligence agencies

were illegally surveilling and harassing activist groups led to government restrictions on intelligence gathering by the 1970s. At the start of this century, that trend was reversed after the terrorist attacks of 9/11, when the budgets and security mandates of intelligence and security services dramatically increased. However, renewed criticism and debate emerged with Edward Snowden's 2013 uncovering of mass surveillance on a global scale by the U.S. government and the intelligence agencies of foreign allies.[4]

Today, the U.S. government still regularly absolves itself of the requirement for a legal warrant to surveil individual telephone records. It also collects digital communications in mass quantities. Law enforcement regularly pursues access to mobile phones, which generally carry troves of sensitive personal information. For some people, surveillance and control contribute to feeling safe and protected, but such measures inevitably come at the cost of privacy and disproportionately target certain groups.

Moreover, surveillance can lead to self-censorship and the repression of free speech and thought. As sociologist Gary T. Marx has pointed out, the mere suggestion of near-total surveillance can be more effective than actual surveillance and use of force. The term "surveillance society," coined by Marx in the mid-1980s, is now commonplace.[5] Civil rights and privacy groups including the Electronic Frontier Foundation and the American Civil Liberties Union (ACLU) have expressed concerns that we are becoming a mass-surveillance society with limited to nonexistent political and personal freedoms. Social media, meanwhile, has changed ideas about privacy, as many people now share personal information because they want to be seen, or watched. Yet, while people may feel they have nothing to hide within a given context, there is the potential for their stored personal information and digital footprints to be used against them under shifting political conditions, or in the case of regime change.

HUMANS AND MACHINES

In recent decades, under the looming specter of the surveillance state, the advent of automated biometric surveillance has led to particularly pressing concerns. Difficult to evade, biometric surveillance identifies and tracks individuals according to bodily characteristics that are hard to modify. The contemporary biometric surveillance toolkit contains various technologies, from fingerprints to DNA analysis, iris and facial recognition, and voice and gait analysis. Many of these technologies have been around for years, some for decades. Today, however, surveillance devices such as cameras and microphones can be linked to biometric databases, and their input is increasingly analyzed in real time by artificial intelligence (AI). As a result, concern is growing that this will result in pervasive networks of smart

devices, potentially enabling all-encompassing levels of bodily surveillance and control.

The outfitting of CCTV cameras with real-time facial recognition led the British politician Charles Walker to warn, in 2023, that "surveillance technology threatens to turn us into walking barcodes or, worse, walking ID cards."[6] Indeed, researchers have been predicting for some time that the use of facial recognition technologies by law enforcement will lead to a "perpetual line-up," despite the well-documented risk of misidentification.[7] While many people continue to willingly use facial recognition technologies as consumers—to unlock their smartphone or tag friends in social media posts—awareness of their surveillance potential is growing, as illustrated in the wearing of masks, the smashing of security cameras during protests, and the legislation limiting, and in some cases prohibiting, the use of surveillance technologies in public spaces.

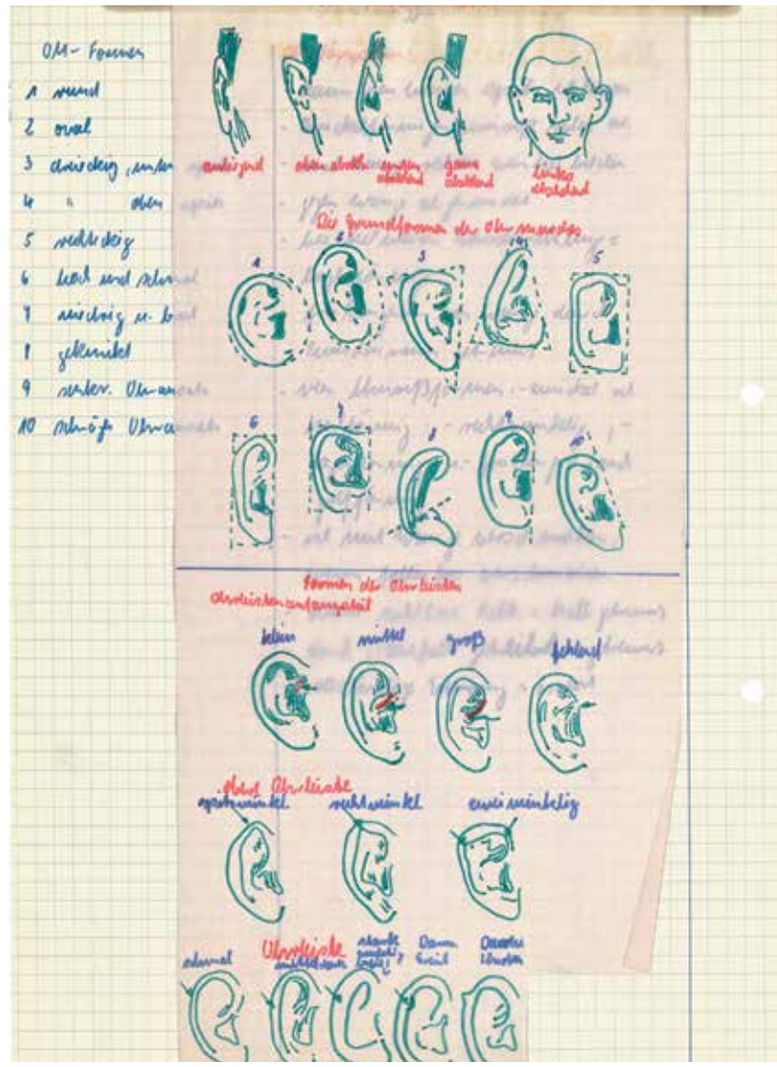
Today, surveillance contributes to social inequality by monitoring people more acutely based on their race or ethnicity, income level, political conviction, place of residence, or religious denomination. Often, borders and war zones provide testing grounds for biometric technologies before their application in domestic contexts. In such spaces, they are tested on individuals without means of refusal, from immigrants and refugees to prisoners. Sociologist David Lyon has proposed that surveillance does more than infringe on individual freedoms: "Surveillance today sorts people into categories, assigning worth or risk, in ways that have real effects on their life-chances. Deep discrimination occurs, thus making surveillance not merely a matter of personal privacy but of social justice."[8] Historian Simone Browne traces contemporary biometric surveillance back to the history of slavery and the policing of Black bodies, showing how surveillance frequently operates in racializing ways.[9] Research by Joy Buolamwini and others indicates that facial recognition technology has a racial bias, and has worked more accurately on white male than on non-white female faces.[10] Its use by police has led to false identifications and the arrests of innocent people.

READING FACES

The international historical roots of facial recognition technologies grow deeper than one might expect. Historical influences include research during the Cold War into human face perception and computer vision; nineteenth- and early twentieth-century policing and forensic technologies; and artistic and physiognomic theories about the human face that go back to the Renaissance. The starting point for selecting the objects in the *Counter/Surveillance* exhibition, however, was the Wende Museum's archive of materials from Checkpoint Charlie, the famous Cold War border crossing

[right] Hand-drawn facial recognition images, Checkpoint Charlie border guard training materials, 1975–1989, East Germany
Collection Wende Museum

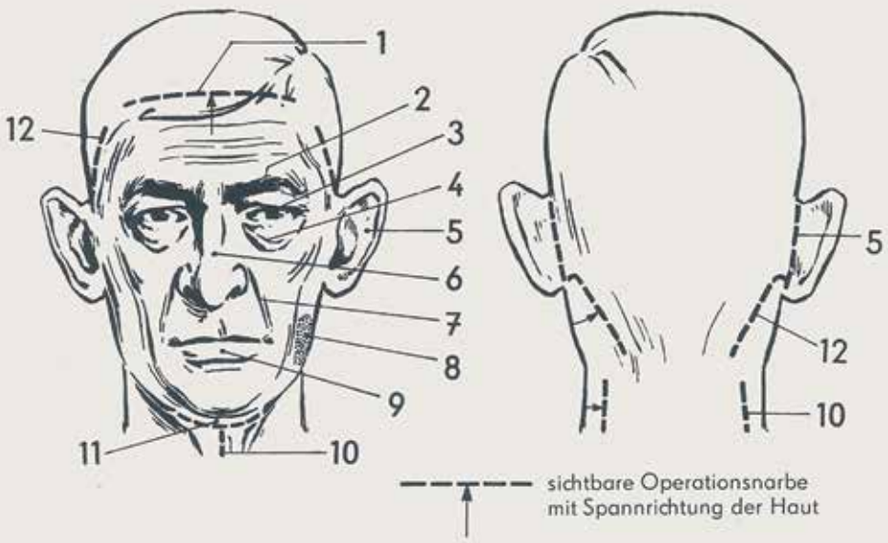
[below] Page from "A Methodological Guide to Identifying Imperialist Spies and Their Agents," 1966, Hungary
Historical Archives of the Hungarian State Security

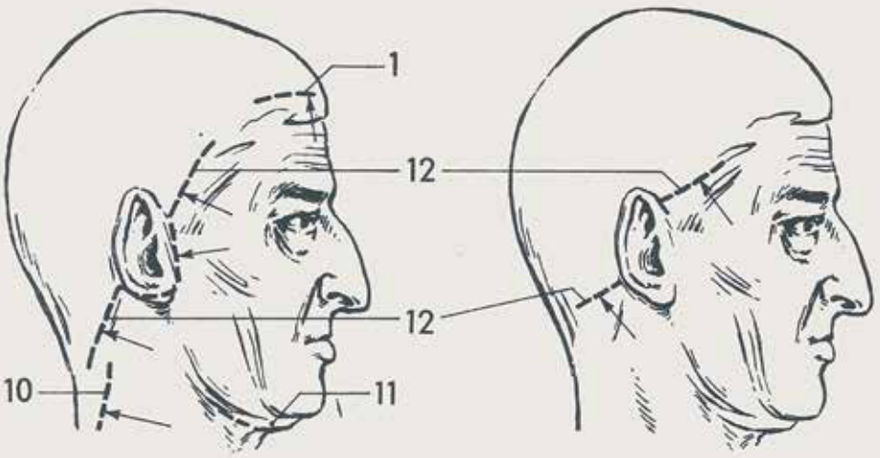


between East and West Berlin, where highly trained East German border guards monitored incoming and outgoing traffic. This archive contains a wealth of analog facial recognition training materials used at the checkpoint in the 1970s and '80s. Among them are manuals and drawings designed to help border guards develop an "expert gaze," capable of seeing through disguises and identifying forged passports.

Similar manuals can be found in archives throughout the former Cold War East and West. *Counter/Surveillance* showcases examples from Hungary, Czechoslovakia, and Soviet Lithuania, as well as manuals circulated by U.S. police training programs operating in the Global South. Such materials extend from border control to identification in secret police work, espionage, and intelligence gathering in general. Pointedly, the title of a Hungarian manual published in 1966 translates to "A Methodological Guide to Identifying Imperialist Spies and Their Agents." Such manuals disciplined the gaze of border control officers and (secret) police, who were taught to isolate facial features and classify them. Their pages typically illustrate rows of noses, eyebrows, ears, and lips, reminiscent of portrait drawing lessons. The accompanying instructions combine practical policing expertise with snippets of physical anthropology, sometimes including references to

Page from *Personen. Bezeichne-beschreibe richtig* [People: Label and describe correctly], published by Interior Ministry of the GDR, 1970, East Germany
Collection Marieke Drost





5.2. Kosmetische Operationen am Gesicht

1 Beseitigung von Stirnfalten
2 Veränderung der Augenbrauen
3 Veränderung der Augenlider
4 Entfernung der Tränensäcke
5 Vergrößern, Verkleinern oder Verändern der Stellung der Ohrmuscheln; Runden angewachsener Ohrläppchen
6 Verschmälerung der Nasenspitze und der knöchernen Nase; Beseitigung von Nasenhöcker und Sattelnase; Verkürzen, Verlängern oder Richten einer schiefen Nase
7 Entfernung der Nasolabialfalten
8 Entfernung von Muttermalen und Fehlbildungen der Haut
9 Verschmälern der Unterlippe
10 Straffung der Haut des Halses
11 Beseitigung des Doppelkinns
12 Spannung der Gesichtshaut (Lifting-Operation)

37

Jeu des Photos-Robot board games,
designed by Roger Dambron, 1950, France
Collection Wende Museum

cultural, ethnic, and racial typologies, and the scientific study of human perception, such as eye tracking research. Unintentionally, the manuals attest to the creativity of the people who tried to trick the system: many contain examples of identity fraud, such as ID cards featuring look-alikes, and revelatory details for detecting passport forgery, disguises, and plastic surgery.

The closely related forensic technology of face-recall kits, developed in the 1950s, '60s, and '70s to make composite portraits, was used on both sides of the Iron Curtain. These kits provided transparent sheets with drawings or photos of various facial features, allowing the user to assemble a portrait. Though they were in part introduced to replace forensic artists, their systems came to be applied by these artists as they blended the semi-scientific system and their own fine art training to make drawings based on eyewitness accounts. Curiously, popular culture inspired the kits—both the British Photo-FIT and the French Portrait-Robot systems derived from board games. Photo-FIT, in fact, was developed by Jacques Penry, the author of several popular books on physiognomy, the pseudoscience that assesses a person's character by reading their face.[11]

There is an equally curious aesthetic similarity between the illustrations in identification manuals from the East and West and physiognomic atlases from earlier centuries. One prominent example of the latter is *Physiognomische Fragmente zur Beförderung der Menschenkenntnis und Menschenliebe* (Physiognomic Fragments for the Advancement of the Knowledge and the Love of Man, 1775) by the Swiss poet and theologian Johann Kaspar Lavater, who associated facial features with innate qualities such as national character and morality. A century later, the Italian criminologist Cesare Lombroso, in his book *L'uomo delinquente* (Delinquent Man, 1876), made the claim that criminals could be identified even before they committed any crime, based on the shape of their skulls and facial features. Remarkably, such ideas occasionally pop up in the history of computer facial recognition,

Unidentified figure with photographic apparatus (electrical light, power unit, camera case), 1950–1959, South Vietnam Collection Vietnam Group Archive, Michigan State University

and even several recently published scientific papers continue to argue that faces can reveal criminal tendencies, political preferences, or sexual orientation.[12]

Meanwhile, the cross-Bloc similarities between analog facial recognition methods trace to their shared origins in forensic and policing methods that predate the Cold War, most notably the Bertillon System, or *bertillonage*, which the French police officer Alphonse Bertillon developed in the late nineteenth century as a standardized method of physical description. Bertillon argued that by using the measurements of certain body characteristics, among them body length, width of the outstretched arms, length of the left foot, and length of the right ear, combined with eye color, hair color, skin color, tattoos, scars, and other characteristics, a person could be identified without a trace of doubt. Bertillon also standardized the photography of suspects by identifying an ideal distance between the camera and its subject when shooting frontal and profile pictures—the documentation known today as the "mug shot." Bertillon helped capture 241 repeat offenders in 1884 alone, and the evident success of his method led to its quick adoption by police around the world.[13]

International aid efforts during the Cold War spread policing methods. U.S. training missions provided courses on fingerprinting, intelligence gathering, and photographic and facial recognition techniques. In South Vietnam, Americans facilitated the establishment of a national ID card system, led by researchers from Michigan State University. Aid from East Germany meanwhile flowed to other countries, including North Vietnam, where the Stasi's technical division helped forge new South Vietnamese ID cards for covert operations.

EARLY COMPUTER FACIAL RECOGNITION

In the 1960s, well into the Cold War, computer scientist Woodrow Wilson Bledsoe, a pioneer of AI, made initial strides into facial recognition software. Working with colleagues in Palo Alto, California, and inspired by police methods such as the identikit system developed by the Los Angeles Police Department in the 1950s, Bledsoe sought to teach computers to recognize and analyze faces. Strikingly, he referenced contemporary research conducted in the Soviet Union. Bledsoe's efforts produced possibly the first computer-generated facial images. Sponsored by the U.S. government through a front company for the CIA (Central Intelligence Agency), this research was not published and remains a relatively unknown chapter in the history of computerized facial recognition.[14] More publicly available research was conducted in the late 1960s and '70s by Toshiyuki Sakai and Takeo Kanade (both at Kyoto University, Japan), Michael D. Kelly (Stanford University), Leon Harmon (Bell Laboratories), and others.[15]

Page from facial recognition project report submitted to King-Hurley Research Group by W. W. Bledsoe, Panoramic Research, Inc., United States, 1964
Woodrow "Woody" W. Bledsoe Papers, Dolph Briscoe Center for American History, The University of Texas at Austin

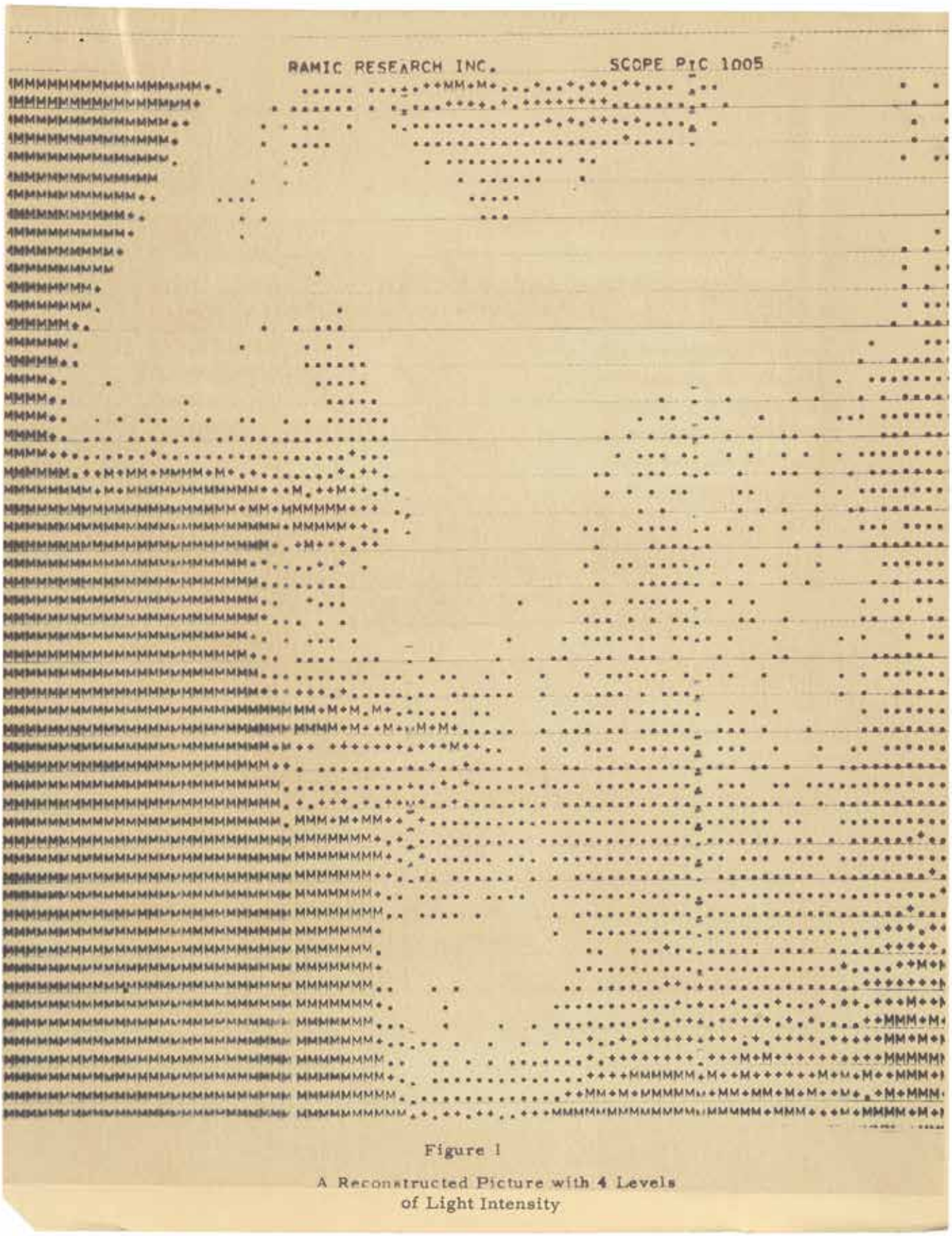


Figure 1

A Reconstructed Picture with 4 Levels of Light Intensity

[top] Serg, *GORKY to WZLR*, 1983, Soviet Union, printed matter Collection Wende Museum

[bottom] Miroljub Todorović, mail art to Robert Rehfeldt, n.d., Yugosalvia, print, handwriting, and stamp on postcard Courtesy of the Mail Art Archive of Ruth Wolf-Rehfeldt and Robert Rehfeldt, ChertLüdde

In the Soviet Union in the early Cold War period, Alfred L. Yarbus was performing highly influential analysis of human perception by deploying eye tracking methods to study how people optically explore complex objects, faces, and scenes. Published in Russian in 1965 and mentioned in Stasi facial recognition study materials, Yarbus's book *Eye Movements and Vision* was widely read in the West following its publication in English in 1967.

In retrospect, it seems a logical step to move from efforts to teach humans a systematic, almost algorithmic approach to scrutinizing faces, into programming computers to look at faces the way humans do. However, while scientific theories about human perception and everyday police practices seem to have had deep impact on Cold War research, automated facial recognition did not take off until the very end of that era, in the late 1980s, as computing power increased, large databases became available, and research into computerized facial recognition software abandoned its focus on isolated facial features.

COUNTERSURVEILLANCE

During the Cold War, dissidents and artists responded to surveillance by operating under the radar in myriad creative ways. Dissidents forged passports, created disguises, and communicated covertly through self-developed encryption codes. To stay safe, they learned to recognize agents' haircuts, outfits, and cars. They sometimes secretly or openly "watched the watchers," for instance during "cop-watching" patrols. They photographed or filmed the activities of secret agents to disclose their modus operandi and sometimes their identities. Essentially, they developed skills mirroring those of spies and secret agents.

Artists' engagement with surveillance has involved works conceived to resist control and recover individual histories. Since the Cold War, inventive countersurveillance activity has continued unabated. *Counter/Surveillance* spotlights a selection of artists who have transformed surveillance methods for their own purposes, creating works that evade, expose, criticize, reclaim, and repurpose surveillance to effectively resist the gaze of control.

~~EVADE~~

Many artists, activists, critics, and dissidents targeted by state surveillance in the former East and West avoided censorship and communicated in secret, even across the Iron Curtain. Through Mail Art, for example, artists in the East connected with their counterparts in Asia, Africa, Europe, and the Americas. Shortwave radio amateurs created global communications networks that evaded oversight through QSL cards, which contained meeting times and wavelengths and were often artistically designed. Musicians from the United States, when visiting the Soviet Union, used musical

Gábor Demszky, *Ferenc Köszeg Chased by the Secret Police*, 1983, Hungary, black-and-white photograph Courtesy of the Art Department Collection, László Rajk's Archive

notation to encrypt information about the names and addresses of dissident musicians, hiding this sensitive information from the KGB in their sheet music.

In recent years, such efforts to escape watchful eyes have become more and more reliant on technology, from encrypted digital messaging apps to photo-scrambling tools. One example is Damara Inglês's *No Face Filter* project (2020/2024), which covers the faces of photographed persons in whirling blue confetti that makes them undetectable to facial recognition tools.[16] Such software is designed to protect anonymity when users post images of protests and other sensitive occasions on social media.

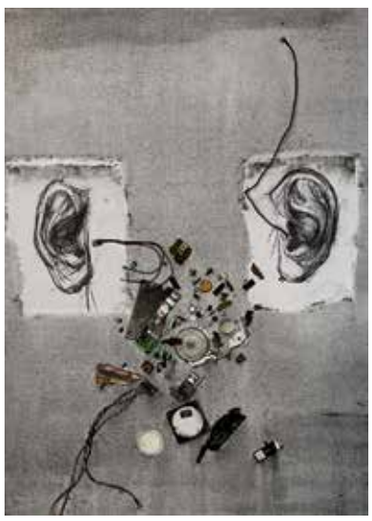
~~EXPOSE~~

During the Cold War, opposition groups sometimes boldly turned surveillance methods and tools against law enforcement and secret police. In 1971, a group of seven U.S. civil rights and anti-war activists, the Citizens' Commission to Investigate the FBI, broke into an FBI office in Pennsylvania. In preparation, the group visited in disguise, learned to pick locks, and cased the building to map the daily routines of law enforcement officers. The hundreds of classified documents they eventually stole and leaked to the press revealed a series of illegal FBI projects for surveilling and undermining domestic political groups and activists. These FBI activities, code-named COINTELPRO (Counterintelligence Program), ranged from infiltration, bugging, and wiretapping to psychological warfare and physical violence. Johanna Hamilton's feature film documentary *1971* (2014) recounts this story largely based on interviews with those involved. Roughly a decade after the Pennsylvania burglary, in 1980s Hungary, members of the Democratic Opposition were followed for weeks by undercover agents, in an operation that seemed more aimed at intimidation than intelligence gathering. In a striking reversal of tactics, the dissidents tricked the agents into running towards a photographer, who took their pictures and then escaped in a car.

These examples are echoed in more recent cases where activists, journalists, and civilians have applied the tools of law enforcement and intelligence agencies to disclose misconduct by these very institutions. To investigate government misconduct and war

[top] Francisco Masó, *Page 06. Volume IV. Tome I, Aesthetic Register of Covert Forces*, 2022, Cuba, acrylic on canvas
Courtesy of the artist

[bottom] Asya Dodina and Slava Polishchuk, *Is Anyone Listening or Am I Talking to Myself?*, 2011, United States, mixed media on canvas
Courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation



crimes through open-source intelligence (OSINT), online communities are employing commonplace apps such as Google Earth as well as reverse-image-search engines and facial recognition technologies. Through such technologies and leaked data, the online sleuths of Bellingcat, a collective that calls itself "an intelligence agency for the people," identified the Russian agents responsible for the poisoning of opposition leader Alexei Navalny in 2020. In a similar vein, activists around the globe are using facial recognition technologies and threatening to reveal the identities of undercover police guilty of assaulting protestors.

Additional artistic examples of exposing the "watchers" include Paolo Cirio's *Overexposed* (2015), a series of reproductions of social media photographs and selfies of nine high-ranking U.S. officials at government agencies including the CIA, FBI, and NSA (National Security Agency). These individuals were responsible for the illegal surveillance programs revealed by Snowden. Cirio has spray-painted their portraits on walls in public spaces in London, New York, Berlin, and Paris to comment on violations of individual privacy and the danger of sharing personal information online—which even the powerful cannot control. Francisco Masó's ongoing series *Surreptitious Stripes* (2017–ongoing) resembles midcentury Color Field Painting but specifically references the patterns on the polo shirts of undercover Cuban police officers engaged in suppressing political demonstrations. Masó's series reveals how these disguises in fact make the agents recognizable to the trained eye.

~~CRITICIZE~~

Many artists aim to create their own space in society, independent from the powers that be. In communist countries during the Cold War period, they not only had to cope with repression and censorship, but also with being part of a surveillance system in which they could be victims, informants, or both at the same time. In his *Masks* series (1972–2018), Romanian artist Decebal Scriba reflects on his experiences in a strict surveillance society that did not allow for free thought and creativity, and effectively muzzled artists.

Yazan Khalili's *Hiding Our Faces Like a Dancing Wind* (2016) reveals the power structures shaping technologies, pointing to histories of the colonial gaze that inform facial recognition apps on smart phones. Yang Jian's *Thank You, Have a Nice Day! 2* (2015) takes its title from the exhibition at which it was first shown, and reflects on the idea of the panopticon, the eighteenth-century English philosopher Jeremy Bentham's envisioning of a circular prison with a central guard tower. Yang explores the potential of constant surveillance using humorous and poetic references to self-regulated conformity and obedience among prisoners.

In Your Eyes and *Is Anyone Listening or Am I Talking to Myself?* (both 2011), by the artist couple Asya Dodina and Slava Polishchuk, combine elements of surveillance and privacy with notions of social

[top] Sadie Barnette, *Mug Shot*, 2021, from the series *FBI Drawings*, 2016–ongoing, United States, mixed media on paper
Collection Bill and Christy Gautreaux

[bottom] Gerhard Lang, from *Palaeanthropical Physiognomy*, 1991–1992/2024, Germany, print on dry plate
Courtesy of the artist

connection and isolation. While the eyes of *In Your Eyes* could be watching you, they could also be screened for biometric identification. In *Is Anyone Listening or Am I Talking to Myself?*, the ears that appear disconnected from a disassembled computer could point to the loss of social connection in a digitized world, or they could be literalizing the idiom "the walls have ears."

~~RECLAIM~~

A number of artists have targeted the distorted narratives compiled by secret agents, in what philosopher and psychologist Rom Harré calls the "file-self"—the many documents that constitute a bureaucratic representation of an individual, such as their birth certificate, driver's license, passport, criminal record, and personal security files. To create *Pigs Like Pigments* (2007), Verena Kyselka compared and contrasted the interpretations and judgments in her Stasi file with her actual biography, noting that her Stasi case officer turned her rather mundane activities and behaviors into suspicious and subversive acts. Sadie Barnette used the FBI's files on her father, Rodney Barnette, as the source for her *FBI Drawings* (2016–ongoing). In 1968, in Compton, California, Rodney Barnette founded a chapter of the Black Panther Party, a movement heavily surveilled by the FBI. In adding drawings and vivid colors to images of her father's files, Barnette reclaims her family's history and dignity. Nedko Solakov's *Top Secret* (1989–90) includes his confession to having once been an informant for the Bulgarian secret service. Solakov's work speaks to how easily people can be lured into supporting an abusive system. The artist regains agency over his own story, taking control of the narrative and giving it new meaning.

~~REPURPOSE~~

Finally, artists can turn tools of control and surveillance into instruments of creativity. Gerhard Lang created the series *Palaeanthropical Physiognomy* (1991–1992/2024) by combining facial features from up to four different photographs using a Minolta Montage Unit, a type of facial recall kit. While the German Federal Police created forensic portraits with such a machine, merging photos of faces to create composite human portraits, Lang has created half-human, half-animal creatures as an alternative path of biological evolution. For *Drawing with My Eyes* (2015), Graham Fink rendered portraits and landscapes by moving his eyes—turning eye tracking software, a technology used to study human visual perception and optimize commercial advertisements, into a tool of art. Xu Bing made the film *Dragonfly Eyes* (2017) by culling from thousands of hours of CCTV footage of unwitting individuals to transform them into actors in a "storyline" that prompts questions about the relation between recorded "reality" and real life.

COMMISSIONED ARTWORKS

The *Counter/Surveillance* exhibition additionally includes newly commissioned artworks by Ken Gonzales-Day and Liat Segal for the site of the Wende Museum. *System Overload* (2024), by Gonzales-Day, is a sculptural and photographic mobile that offers the artist's response to scientific, institutional, and government use of classification techniques that reinforce systemic racism, oppression, and inequality. The work juxtaposes Gonzales-Day's photographs of three-dimensional life casts, portrait busts, and other representations of the human face, as found in international collections, including that of the Wende Museum, with references to systems of surveilling and measuring the human face.

Segal's installation *Hyperreality* (2024) covers the Wende's windows with photography-based abstract drawings generated by a purpose-built machine. As visual encryptions of Segal's personal photographs, the programmatic drawings adhere to a set of rules determined by the artist. Carefully selected as representations of her identity and worldview, the original photographs reflect a tension between our human need for self-representation, communication, and belonging, and our instinctual discomfort at being watched, monitored, and controlled. Visible from both the exterior and interior of the Wende, the drawings interact with natural light and shadows. Evoking traditional stained-glass windows as sited in religious architecture, each window intervention tells a story, though in this case that story is encrypted.

ORGANIZATION OF THE CATALOG

The first part of this publication, "Surveillance," explores Cold War histories through methods and technologies for tracking, listening to, watching, and identifying individuals. In an interview, Marc Simons and Paul Reuvers, the founders of the Crypto Museum in Eindhoven, share their fascination with the material and technical history of Cold War cryptography and spying, and tell the stories behind several devices showcased in *Counter/Surveillance* to reflect on continuities and discontinuities in government surveillance over the past seventy-some years. Moreover, "Surveillance" presents an illustrated wealth of equipment and training materials used by secret services and border guards in the East and West.

The second part, "Countersurveillance," presents the ingenuity of artists and activists in counterbalancing the advances of governments, business interests, and institutions in applying surveillance systems. This section features an essay by Ken Gonzales-Day that offers cautionary tales about the various ways in which historical representations and measurements of the face, both artistic and (pseudo)scientific, are infused with ideas of race, gender, morality, and hierarchy. Liat Segal, in her essay, argues that "we are our own spies," constantly collecting and sharing personal information, and,

in so doing, building a "hyperreality" of digital representations that can come to dominate our reality altogether.

Like the exhibition, this catalog contains a wealth of spy and surveillance materials, some of them quite outlandish, such as the radioactivity detector used by the Stasi to follow suspects whose clothes, car, documents, or money had been secretly sprayed with radioactive material, or the "smelling jars" that preserved the sweat released by individuals during Stasi interrogations, used to subsequently identify them with the aid of specially trained dogs. The artifacts illustrated here provide glimpses—both devastating and wildly intriguing—behind the scenes of the Cold War origins of our "surveillance society," while the illustrated artworks represent wide-ranging responses in resistance to the mechanisms of spying and control. *Counter/Surveillance* reminds us to reclaim the spirit of freedom and creativity as essential to the human experience.

NOTES

1. Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs, 2019).

2. Many countries have introduced biometric passports, resulting in the registration of billions of people in biometric databases. The largest biometric database, the Aadhaar system in India, contains more than a billion identity records.

3. Susan Buck-Morss, *Dreamworld and Catastrophe: The Passing of Mass Utopia in East and West* (Cambridge, MA: MIT Press, 2000), 2–11.

4. Snowden's revelations included files from the "five eyes network": Australia, Canada, New Zealand, the United Kingdom, and the United States.

5. Gary T. Marx, "The Surveillance Society: The Threat of 1984-Style Techniques," *The Futurist*, June 1985, 21–26.

6. Charles Walker, "Live Facial Recognition Technology Has No Place in a Free Society," *The House Live*, October 18, 2023, https://www.politicshome.com/thehouse/article/live-facial-recognition-technology-no-place-free-society.

7. Clare Garvie, Alvaro M. Bedoya, and Jonathan Frankle, "The Perpetual Line-up: Unregulated Police Face Recognition in America," October 18, 2016, Center on Privacy and Technology, Georgetown Law, https://www.perpetuallineup.org/.

8. David Lyon, ed., *Surveillance as Social Sorting: Privacy, Risk, and Digital Discrimination* (London: Routledge, 2003), 1.

9. Simone Browne, *Dark Matters: On the Surveillance of Blackness* (Durham, NC: Duke University Press, 2015).

10. See Joy Buolamwini, *Unmasking AI: My Mission to Protect What Is Human in a World of Machines* (New York: Random House, 2023); and Brandeis Hill Marshall, *Data Conscience: Algorithmic Siege on Our Humanity* (Hoboken, NJ: Wiley, 2022), with a foreword by Timnit Gebru.

11. See, for instance, Jacques Penry, *How to Judge Character from the Face* (London: Hutchinson, 1938); and Jacques Penry and Isobel Ryan, *The Face of Man: A Study of the Relationship Between Physical Appearance and Personality* (London: Rider, 1952).

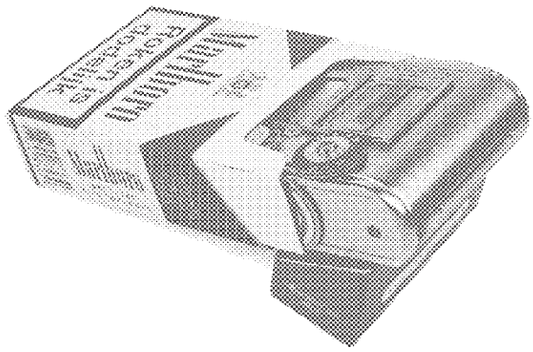
12. See Michal Kosinski, "Facial Recognition Technology Can Expose Political Orientation From Naturalistic Facial Images," *Nature*, January 11, 2021, https://www.nature.com/articles/s41598-020-79310-1; Yulin Wang and Michal Kosinski, *Deep Neural Networks Are More Accurate Than Humans at Detecting Sexual Orientation from Facial Images* (Stanford, CA: Stanford Graduate School of Business, 2018); Paul Lewis, "'I Was Shocked It Was So Easy': Meet the Professor Who Says Facial Recognition Can Tell If You're Gay," *The Guardian*, July 7, 2018; Jonathan W. Korn, Nathaniel J. S. Ashby, and Roozbeh Sadeghian, "A Deep Neural Network Model to Predict Criminality Using Image Processing," unpublished conference paper by faculty at Harrisburg University of Science and Technology; and "HU Facial Recognition Software Predicts Criminality," press release, Harrisburg University, May 2020, https://archive.is/N1HVe#selection-1605.31-1605.203.

13. See Alphonse Bertillon, *Identification anthropométrique* [Anthropometric Identification] (Grandview Heights, OH: Legare Street Press, 2022). First published in the French in 1893.

14. Lila Lee-Morrison explains that Bledsoe's reports only became publicly available when master's student Justin Lange retrieved them from the Dolph Briscoe Center for American History at the University of Texas at Austin around 2013 or 2014. See Lila Lee-Morrison, *Portraits of Automated Facial Recognition: On Machinic Ways of Weeing the Face* (Bielefeld Transcript Verlag, 2019), 58. Lee-Morrison also discusses reasons to think Bledsoe was sponsored by a CIA front organization, the King-Hurley Research Group.

15. See T. Sakai, M. Nagao, and S. Fujibayashi, "Line Extraction and Pattern Selection in a Photograph," *Pattern Recognition* 1, no. 3 (1969): 233–48; M. D. Kelly, "Visual Identification of People by Computer," Technical Report AI-130, doctoral thesis, Stanford AI Project, 1970; Takeo Kanade, *Picture Processing System by Computer Complex and Recognition of Human Faces*, doctoral dissertation, Kyoto University, 1973; and A. J. Goldstein, L. D. Harmon, and A. B. Lesk, "Identification of Human Faces," *Proceedings of the IEEE* 59, no. 5 (May 1971): 748–60.

16. For an introduction to the application of the filter, see "Damara Inglês. Spark AR workshop: No Face Filter," https://www.youtube.com/watch?v=WckuENqvKLs.



MARIEKE DROST AND JOES SEGAL

SPYING ACROSS THE IRON CURTAIN: INTERVIEW WITH PAUL REUVERS AND MARC SIMONS

The Crypto Museum is a collection of formerly secret technologies: cipher machines, bugs, concealed cameras, encryption codes, and interception equipment. For the past two decades, in the Dutch city of Eindhoven, the museum's founders, electronics engineers Paul Reuvers and Marc Simons, have piece-by-piece salvaged espionage, surveillance, and encryption devices and restored them to working order. The collection is meticulously documented on the website www.cryptomuseum.com. Reuvers and Simons regularly organize exhibitions and lectures to realize their goals of sparking interest in technology, preserving the history of espionage and surveillance, and providing cautionary tales about past and present threats to privacy.

MARIEKE DROST & JOES SEGAL

What can you tell us about your motivation to establish the Crypto Museum as a collection of cryptography and spy equipment?

PAUL REUVERS & MARC SIMONS

Our fascination started with an interest in the Enigma machine, used by the Nazis to send encrypted messages that the Allies succeeded in deciphering, after we both read the novel *Enigma* (1995) by Robert Harris. We liked the novel so much that during our next vacation we went looking for Bletchley Park, the English country house and estate that, during World War II, became the center of Allied code breaking. We were soon drawn in by the ensuing history of Cold War cryptography and spying. Moreover, we share a lifelong fascination with and love for technology in general. By building our collection, and researching and restoring objects, we are able to combine these interests.

There is also a less personal motivation. It is important to us that there be informed debate about surveillance. In order to make informed political decisions, knowledge is needed, and that includes technical knowledge.

MD & JS

How do you approach the materials you receive at the museum?

PR & MS

They don't always come with manuals or documentation, and even if they do, we first want to figure it out ourselves. We very carefully take these materials apart and study them. We have to be absolutely sure of how they work and how to connect them, otherwise they might go to pieces immediately. This often requires extensive and meticulous research.

MD & JS

During the Cold War, the technical departments of secret services in the East and the West engaged in a spy and surveillance arms race. Can you name a few important innovations that resulted from this competition?

PR & MS

Both sides of the Iron Curtain developed technology to spy on the other. Sometimes the technology was created by the country that used it, sometimes it was copied from the enemy. For instance, Western agents operating within the Eastern Bloc used Western transmitters to contact their home countries, and we know that the East German Stasi regularly confiscated such devices. If the agent was a Western diplomat, they would be expelled; if it was an East German citizen, they would be incarcerated. Meanwhile, the Stasi had spies in the West who contacted Stasi headquarters using secret transmitters, which in turn could be confiscated upon detection.

Eastern Bloc embassies were often monitored by the West with specifically developed wires and bugs, and vice versa. The other side then developed devices to trace these wires and bugs, so that the original party was forced to come up with new devices that could not (yet) be traced. The Stasi used the knowledge they gained from confiscating spy materials to also spy on their own people—who didn't have access to technologies for detecting covert listening devices and couldn't very well defend themselves against these surveillance practices.

Another significant aspect of this arms race was the competition to make smaller and smaller cameras, microphones, and other such devices. For instance, the CIA paid a lot of money to producers of hearing aids to miniaturize microphones for use as listening devices.

MD & JS

What aspects of these innovations do you consider most striking in terms of technical ingenuity and impact?

PR & MS

Particularly striking to us, especially for the equipment produced in the Eastern Bloc, is the simplicity of many devices. Secret services in the West aimed to develop more and more complex devices, whereas, in comparison, the solutions from the Soviet Union and Eastern Europe were often remarkably simple, possibly due to a lack of money—but no less effective. In movies you often see small transmitters used to eavesdrop in apartments, but in the case of

[left] U.S. Ambassador to the Soviet Union Henry Cabot Lodge Jr. presents the Great Seal that held a Soviet listening device ("The Thing") to Special Meeting of the United Nations Security Council, New York, May 26, 1960

[right] Technical drawing of Great Seal listening device, 1952, United States

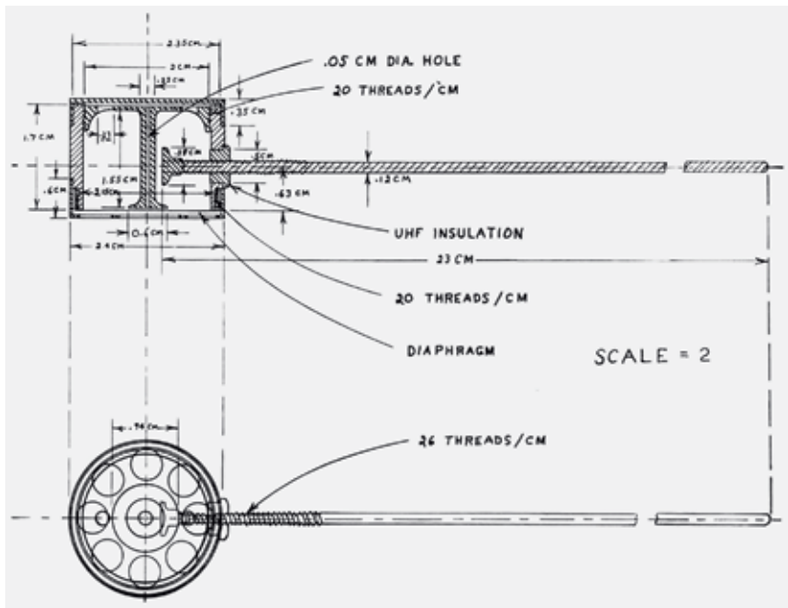
East Germany, and probably most Eastern Bloc countries, wired devices were much more common. Such devices don't make use of radio signals but piggyback on existing cables such as telephone wires. By using existing wires, it was possible to deploy simple bugs that were very hard to trace.

MD & JS

Can you mention some examples of spy equipment that secret services imitated from the other side through copying and reverse engineering?

PR & MS

One of the most fascinating examples is "The Thing." This was a passive device, meaning that it could be activated and deactivated remotely. It was hidden in a wooden relief depicting the Great Seal of the United States that a Soviet youth organization donated in the mid-1940s to the U.S. Ambassador in Moscow. It was used to eavesdrop on conversations in the ambassador's residence for seven years before it was finally discovered. The Americans were surprised by the simplicity of the device and its effectiveness. They had it researched by various laboratories in the United States and Europe in order to develop similar technologies, resulting in the EASYCHAIR devices. It is interesting, by the way, that the different secret services didn't work together—the FBI asked the help of British secret service MI5, while the CIA worked independently on the same project with a small company, the Dutch Radar Laboratory (Nederlands Radar Proefstation, NRP).



[top] Nagra SN miniature recording device, manufactured by Nagra Kudelski, 1970, Switzerland
Collection Crypto Museum

[bottom] Yachta-1M miniature recording device, manufactured by Special Machinery Factory of Kiev, 1987, Soviet Union
Collection Crypto Museum

Another significant example begins with a bug found inside the wooden divider of a desk drawer at an American embassy—where this was, we still do not know. The exterior was covered by a thin layer of veneer closely resembling the wood of the divider. The bug was very effective as it could be activated and deactivated remotely. Only when activated could the bug be traced, with special equipment. The transmitters were probably developed and produced by the Soviets. The CIA had them analyzed and meticulously copied in the Netherlands—including their flaws—after which the CIA used these surveillance radio system (SRS) devices to eavesdrop on foreign embassies. The idea was that if they were discovered, people would think they had been made and deployed by the Soviets. This is the SRS-153 included in the *Counter/Surveillance* exhibition.

Additional examples are the Soviet Yachta recorder, a miniature device that could be concealed under clothing to make covert recordings, which exactly copied the Swiss Nagra recorder, popular with American services. The Kiev 35A, a simple 35mm camera, was another exact copy, this time of the Minox 35 EL, a high-quality miniature camera on the market in the West. It could easily be

Minox 35 EL miniature camera
inside Marlboro cigarettes package,
1974, West Germany
Collection Crypto Museum

carried in clothing or within a package of cigarettes, and it turned out to be very suitable for photographing documents. The Soviet F-21 (also known as Ajax-12) camera was modeled on the West's Robot Star camera, heavily used by spies in both East and West. These small cameras could easily be hidden in a purse or behind the buttonhole of a vest. The Wende Museum's collection includes a camera found within a belt buckle, as devised by the Soviet secret service, and it is probably a F-21 as well.

MD & JS

Not many people might know there were trade relations between the East and the West that involved the exchange of spy cameras and other surveillance technologies. Do you know what this market looked like—who the buyers were, and whether this happened covertly or openly?

PR & MS

There was open trade, but of course on a limited scale. For instance, the West bought ovens and water heaters in East Germany, while East European countries were allowed to buy simple things in the West. Cameras were bought in the West in large quantities because photography was "for everyone."

Furthermore, the Stasi managed to buy very small microphones in the West, including from the brand Knowles, claiming these were essential for their production of hearing aids. But then they were used for eavesdropping on the conversations of alleged dissidents.

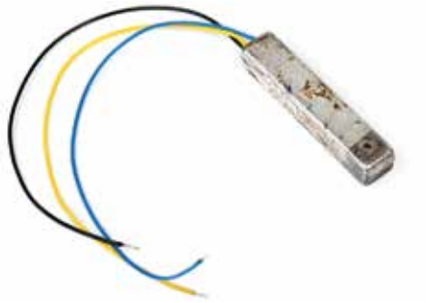
Advanced equipment parts produced in the West were not meant to be shared with the Eastern Bloc. In response, the latter countries often employed the "Hungary route"—there was a strong historical bond between Hungary (East) and Austria (West), and Hungarians were sometimes able to buy Western parts on the Austrian market to bring back to the East. It's also worth noting that big electronics companies in the West, such as Philips, were allowed to open factories in Hungary. Through these factories, Western parts sometimes made it into Eastern Europe.

MD & JS

Can you give some examples of how people were impacted by the devices we are exhibiting?

PR & MS

Famously, the East German reverend and open critic of the GDR regime Rainer Eppelmann discovered, in December 1988, a "bug" hidden behind a defective wall socket in his office—the so-called 31217 radio frequency covert listening device. Ulrich Schwarz,



Listening device used by
Departamentul Securității Statului
(Securitate), 1978, Romania
Collection Crypto Museum

a correspondent for the West German magazine *Der Spiegel*, had given Eppelmann a device for detecting bugs from the West German secret service (Bundesamt für Verfassungsschutz, or BfV), which is how he found out about it. About a month later, Eppelmann and a friend who, unbeknownst to him, was a Stasi informant, found two more devices in his living room: one hidden inside a lamp and the other inside a radio.

Another example is a wired monitoring bug the Romanian secret service (Departamentul Securității Statului, or Securitate) placed within the wall of a Romanian institution and connected to a telephone line. It remained there well past the end of the Cold War. Between 1997 and 2000 (before mobile phones became mainstream), a person working at the institution asked a friend to make a device for recording telephone conversations, as there were regular disputes about the verbal instructions being given. The friend's simple solution involved a portable voice recorder and external microphone connected to the telephone line by means of a separation transformer. It did not require any modification of the telephone set and would automatically start recording upon picking up an audio signal. However, it soon became apparent that the dictation machine was recording not only telephone conversations but any conversation in the room. Initially it was thought that the recorder's internal microphone had not been properly disconnected, but after the microphone was removed completely, all conversations in the room were still being recorded. After following the telephone cables, and cutting through several brick walls, the bug was finally discovered. Further investigation revealed that there was another bug, in the office of the general manager. One of these bugs was anonymously donated to the Crypto Museum.

MD & JS

Which spy techniques and technologies have stood the test of time and are still in use?

PR & MS

Reading letters. The Stasi did that by intercepting letters and packages, carefully steaming them open, and transcribing the contents. Nowadays secret services essentially do the same in surveilling email traffic. Just after the Berlin Wall came down, we saw images of the Stasi steaming open letters, and we thought that something like that could never happen in the West. Now it's being done on a much larger scale and fully automated. The methods are different, but not the aim.

The world has changed a lot since the Cold War, but that is not to say that devices from the Cold War period are now less effective. In order to listen in on people, or follow them, you can use a mobile phone, with various inexpensive devices produced by

manufacturers with factories based in Asia. You don't need manual cameras anymore, because everyone has a digital camera on their smart phone.

The rise of the World Wide Web and social media have certainly brought enormous change, with the amount of collected data increasing exponentially. Instead of dozens of intercepted letters, we are now talking about millions of emails sent daily. The biggest challenge right now is filtering all those emails to identify the right targets. Yet, spying as a strategy hasn't changed that much. Countries are still engaging in clandestine operations across foreign territory to collect information.

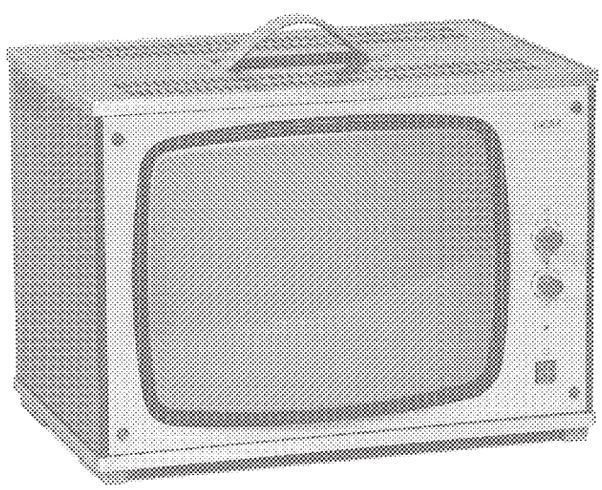
MD & JS

Do you feel that developments such as the introduction of the internet and social media have contributed to more openness and democratization, or have they brought stricter control and constraints on freedom?

PR & MS

Initially, the internet contributed to a bigger, more open world, in which information seemed potentially accessible to all, and where everyone could express their opinions freely. Think, for instance, of Wikipedia—it has certainly contributed to the democratization of access to knowledge. However, the enormous rise of often-unrestricted messages via social media led to a situation where governments started to pose as internet police, imposing new regulations, controls, and fines. Such measures threaten to decrease democracy and free speech. The internet was originally a bottom-up phenomenon, but more and more it's controlled top-down.

In our opinion, governments are the biggest threat to privacy. On the one hand, new laws are being passed that aim to safeguard our privacy; on the other hand, we lose more and more privacy through government control. There are ways to protect yourself against laws being passed that allow governments to surveil and profile individuals on an unlimited scale, but more laws will be introduced to counteract this self-protection. A common argument in favor of surveillance claims that it prevents terrorism and child pornography. This logic is used to convince people that it is necessary to surveil all individuals at all times. But since mass surveillance is clearly not hindering criminals from taking unlawful countermeasures, we are not optimistic about these developments. It seems we are approaching the world of George Orwell's *Nineteen Eighty-Four* (1949), where Big Brother is always watching you. It is important that we find the right balance between crime detection and personal freedom.



SURVEILLANCE

TRUCK

Smelling jars used by Ministry for State Security of the GDR (Stasi), 1970s–1980s, East Germany
Collection Wende Museum

In order to identify and track suspected dissidents, the Stasi experimented with an odor-recognition system. A piece of clothing or a cloth pad wiped with sweat would be collected and preserved in a glass jar, which the Stasi labeled with the suspect's name and file number. The Stasi often broke into homes to steal suspects' underwear. They wiped down chairs used during interrogations at the Stasi headquarters to ensure a strong odor sample. Specially trained dogs would then use the samples to track down their targets.

25053 radioactivity detector used by Ministry for State Security of the GDR (Stasi), 1980, East Germany
Collection Crypto Museum

This radioactivity detector, or Geiger counter, was developed for the Stasi to track dissidents and suspected foreign agents by invisibly marking their bodies, cars, documents, money, clothing, and equipment with a radioactive substance that could be traced by the detector. These tactics exposed the subjects, and occasionally the agents, to the risk of cancer. The Stasi also used nuclear markers to contaminate the floors of spaces where dissidents met, in order to afterward trace their movements. The use of nuclear markers in surveillance was known within the Stasi as Projekt Wolke (Project Cloud).

M-125 Fialka cipher machine,
1956–1991, Soviet Union
Collection Wende Museum

The Fialka is an electromechanical, wheel-based code-generating and decoding machine. Developed after World War II and loosely based on the German Enigma machine, its rotors move to a new position each time a key is pressed, creating a new electrical circuit and an alphabetic substitution. The Fialka incorporates several features from the Enigma but is a much more sophisticated machine. It includes ten rotors in all (each with thirty contacts), its wheels rotate in opposite directions, and it involves more frequent wheel stepping. The rotors can be quickly rewired in the field, and input and output from the machine accelerates via the use of punched paper tape.

Production of the Fialka began in 1956. The Latin-alphabet-based machine pictured here was used in Czechoslovakia; others were exported to other Warsaw Pact countries and Cuba. Use of the Fialka continued well into the 1990s. There are only a few extant Fialka machines today due to their systematic destruction by the Soviet Union and its successor states.

KL-7 cipher machine used by National Security Agency (NSA) with rotor and rotor reader, 1952–1980, United States Collection National Cryptologic Museum

Developed in 1952 by the NSA, the KL-7 is an electromechanical rotor-based cipher machine. It has eight electrical rotors, seven of which move in an irregular stepping pattern when enciphering. Each rotor has thirty-six rotor points, twenty-six of which connect to the letters of the Latin alphabet. Gradually replaced by other electronic machines, the KL-7 remained in use until the 1970s. As was later discovered, the American spy John Anthony Walker Jr. supplied the Soviets with key lists of the KL-7 and other devices, resulting in compromised secret messages. The U.S. government declassified the KL-7 only in March 2021.


FOTO
OPTIK
JENA
Ultraviolettsperrfilter

Border guard passport verification briefcase, ca. 1980s, East Germany
Collection Wende Museum

[opposite] Briefcase with passport forgery equipment used by Ministry for State Security of the GDR (Stasi), 1980s, East Germany
Collection Wende Museum

Identification documents were an important means for Cold War government surveillance. They made it possible to track individuals and control their movements. Much attention was given to detecting forgery and identity fraud and to developing passports that were difficult to imitate. Meanwhile, agents at intelligence agencies were experts at forgery and disguise, as these skills were necessary to operate in enemy territory.

During the Cold War, international visitors to the Soviet Union and Eastern Europe endured endless waiting lines, thorough inspections, and intimidation tactics at border crossings. The aim was to make sure that no one entered the country under false pretenses or smuggled in Western propaganda, consumer items, or "bourgeois-decadent" pop music. Conversely, the border guards had to make sure no citizens of the Eastern Bloc left without explicit permission.

Between 1975 and 1990, Major Peter Bochmann oversaw the passport division at the East German border guard station known as Checkpoint Charlie. He helped develop a system of facial recognition for the training of border guards, and many of his drawings and sketches are today held in the archives of the Wende Museum.

With the goal of developing a universally applicable scientific method of personal identification, Bochman pursued focused research into facial recognition at the Stasi-run University of Law in Potsdam. To train the border guards under his command, he had them pair "flash cards" showing portrait photographs of identical people or look-alikes. He began organizing a didactic display at Checkpoint Charlie in 1988, which was formally inaugurated on October 7, 1989, coinciding with the fortieth anniversary of the GDR. A month later, the Berlin Wall fell. Bochmann remained employed at the checkpoint until August 31, 1990, roughly one month prior to German reunification, when the checkpoint was permanently closed. Bochmann always remained loyal to the GDR, even if he disagreed with certain aspects of the system, especially during the final years of the state. In reunited Germany, he tried to interest various parties (border guards, police, and financial institutions) in his system of facial recognition, but to no avail.

Stills from the instructional film *Grenzpassage* [Border Crossing], produced by the Ministry for State Security of the GDR (Stasi), 1985, East Germany
Collection Stasi Media Library, BstU (Stasi Records Archive)

Grenzpassage is a Stasi-produced instructional film focused on border crossings and passport control. It provides directions on checking passports and shows scenes from the daily lives and activities of East German border guards.

Stills from the instructional film *Fälscher* [Forgers], produced by the Ministry for State Security of the GDR (Stasi), 1987, East Germany
Collection Stasi Media Library, BstU (Stasi Records Archive)

The training film *Fälscher* was produced by a counterintelligence department of the Stasi and shows a businessman from West Berlin forging visa stamps through a photography process involving light tubes, chemicals, and film. Such counterfeit stamps were used to transfer entry notes into forged West German passports for East German citizens wishing to leave the country.

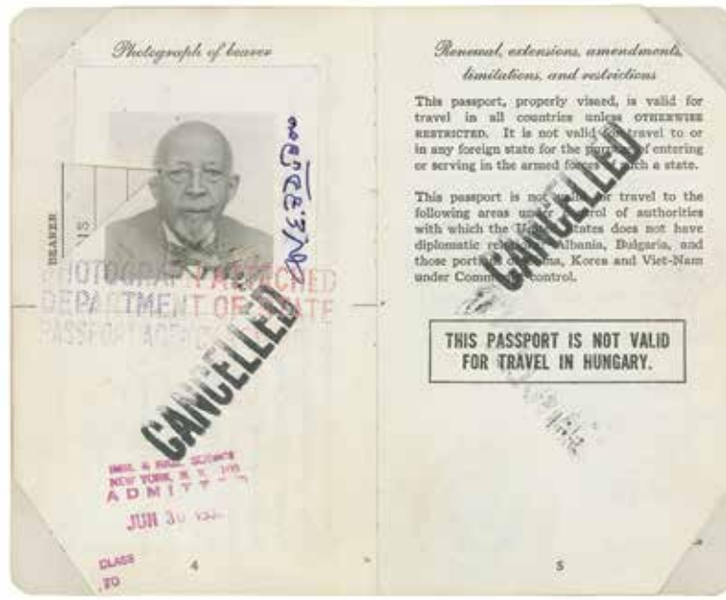
W. E. B. Du Bois's canceled U.S. passport, 1958, United States
Robert S. Cox Special Collections and University Archives, Du Bois Library, University of Massachusetts Amherst

In 1951, the U.S. passport of the sociologist, economist, and civil rights advocate W. E. B. (William Edward Burghardt) Du Bois was canceled due to suspicions he worked for an organization that acted as a foreign agent. This made it impossible for Du Bois to travel abroad.

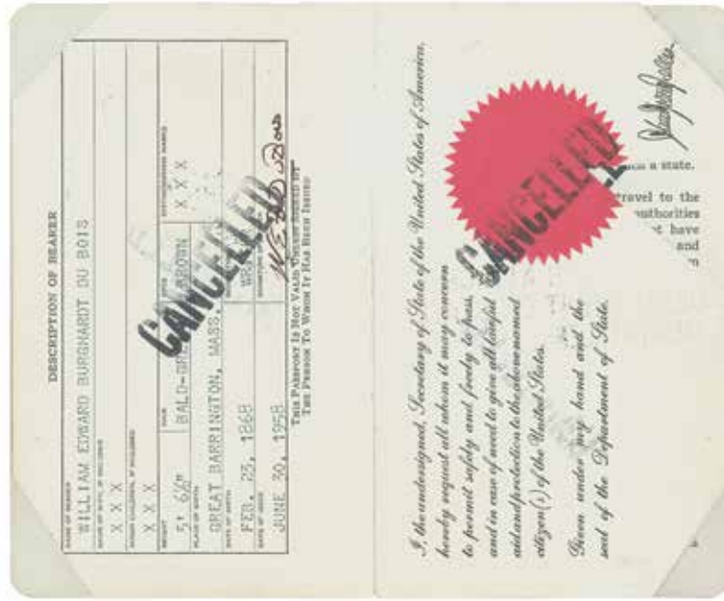
Du Bois rose to national prominence as the leader of the Niagara Movement, a group of activists committed to equal rights for Black Americans. The first Black American to receive a PhD from Harvard University, Du Bois was a professor of economics and history at Atlanta University from 1896 to 1910 and of sociology as of 1932. In 1909, he co-founded the National Association for the Advancement of Colored People (NAACP); from 1910 to 1932, he edited its magazine, *The Crisis*. Du Bois insisted on full civil rights, increased political representation, and access to advanced education. He led activism against lynching, Jim Crow laws, and discrimination in education and employment. He believed that capitalism results in racism, sympathized with socialist causes throughout his life, and was an ardent advocate of peace and nuclear disarmament.

In 1950, he became chair of the newly created Peace Information Center (PIC), which worked to publicize the Stockholm Appeal in the United States, a petition to governments around the world to ban nuclear weapons. The U.S. Justice Department alleged that the PIC was acting as a foreign agent and required that it register with the government. When Du Bois and other PIC leaders refused, they were indicted. After a trial in 1951, the case was dismissed but the government nonetheless confiscated Du Bois's passport and withheld it for eight years, until the Supreme Court decided it was unconstitutional for the State Department to deny a passport to a U.S. citizen for political reasons.

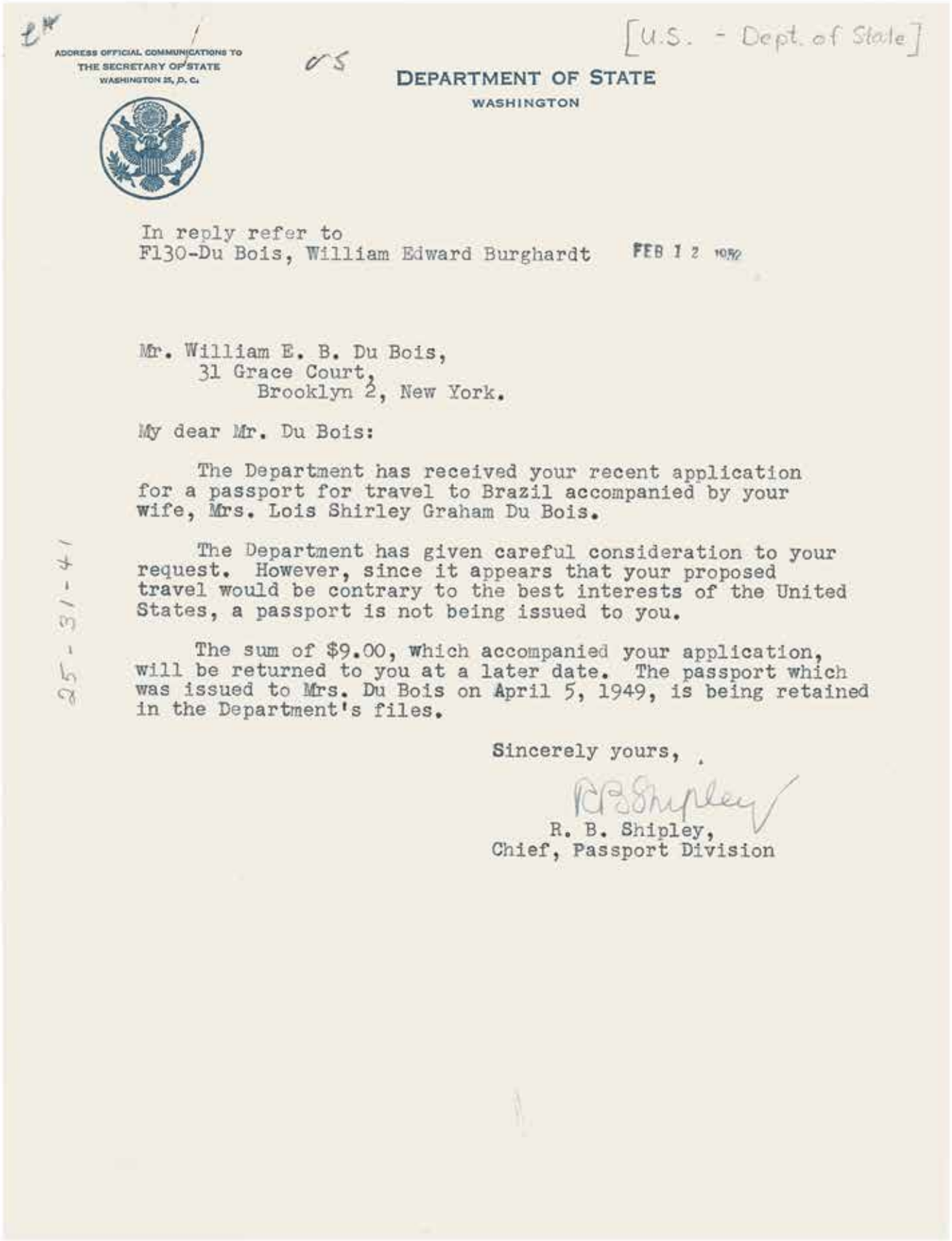

No. 1103544
PASSPORT
United States of America


Photograph of bearer
BEARER
CANCELLED
PHOTOGRAPH REMOVED
DEPARTMENT OF STATE
PASSPORT AGENCY
IMMIG. & NATUR. SERVICE
NEW YORK, N. Y.
ADMITTED
JUN 30
CLASS
ID
4
Renewal, extensions, amendments, limitations, and restrictions
This passport, properly visaed, is valid for travel in all countries unless OTHERWISE RESTRICTED. It is not valid for travel to or in any foreign state for the purpose of entering or serving in the armed forces of such a state.
This passport is not valid for travel to the following areas under the control of authorities with which the United States does not have diplomatic relations: Albania, Bulgaria, and those portions of China, Korea and Viet-Nam under Communist control.
CANCELLED
THIS PASSPORT IS NOT VALID FOR TRAVEL IN HUNGARY.
5


Vienna
PERMITTED TO LAND ON CONDITION THAT THE HOLDER
(C) DOES NOT REMAIN IN THE UNITED KINGDOM LONGER THAN
CANCELLED
IMMIGRATION OFFICER
14 AUG 1958
SOUTHAMPTON
8
Vienna
ČSR
-7.10.58-15
VISUM JEDNORÁZOVÉ
29 ČERVEN 1958
29 ČERVEN 1958
29 SRPNA 1958
PRAHA-RUZYNĚ


DESCRIPTION OF BEARER
WILLIAM EDWARD BURGHARDT DU BOIS
X X X
5' 6½"
BALD
BROWN
X X X
GREAT BARRINGTON, MASS.
FEB. 23, 1868
JUNE 30, 1958
CANCELLED
This Passport Is Not Valid For Travel By The Person To Whom It Was Issued
I, the undersigned, Secretary of State of the United States of America, hereby request all whom it may concern to permit safely and freely to pass, and in case of need to give all lawful aid and protection to the above-named citizen(s) of the United States.
Given under my hand and the seal of the Department of State.
CANCELLED
a state.
travel to the
authorities
have
and

Letter to W. E. B. Du Bois from U.S. Passport Office, 1952, United States Robert S. Cox Special Collections and University Archives, Du Bois Library, University of Massachusetts Amherst



[U.S. - Dept. of State]

ADDRESS OFFICIAL COMMUNICATIONS TO
THE SECRETARY OF STATE
WASHINGTON 25, D. C.

DEPARTMENT OF STATE
WASHINGTON

In reply refer to
F130-Du Bois, William Edward Burghardt FEB 12 1952

Mr. William E. B. Du Bois,
31 Grace Court,
Brooklyn 2, New York.

My dear Mr. Du Bois:

The Department has received your recent application for a passport for travel to Brazil accompanied by your wife, Mrs. Lois Shirley Graham Du Bois.

The Department has given careful consideration to your request. However, since it appears that your proposed travel would be contrary to the best interests of the United States, a passport is not being issued to you.

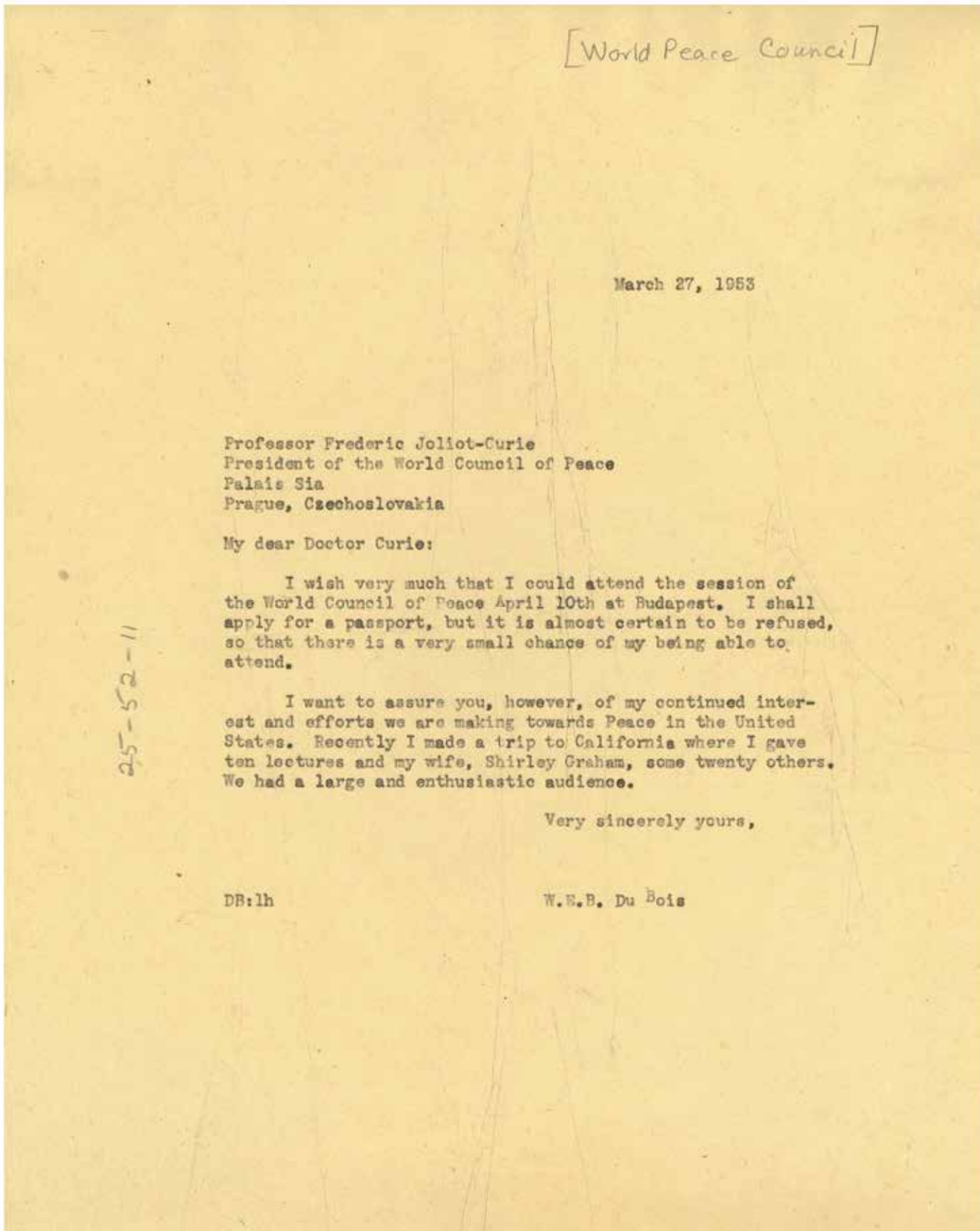
The sum of $9.00, which accompanied your application, will be returned to you at a later date. The passport which was issued to Mrs. Du Bois on April 5, 1949, is being retained in the Department's files.

Sincerely yours,

R. B. Shipley,
Chief, Passport Division

25 - 31 - 41

Letter from W. E. B. Du Bois to President of World Council of Peace, Prague, 1953, United States
Robert S. Cox Special Collections and University Archives, Du Bois Library, University of Massachusetts Amherst



[World Peace Council]

March 27, 1953

Professor Frederic Joliot-Curie
President of the World Council of Peace
Palais Sia
Prague, Czechoslovakia

My dear Doctor Curie:

I wish very much that I could attend the session of the World Council of Peace April 10th at Budapest. I shall apply for a passport, but it is almost certain to be refused, so that there is a very small chance of my being able to attend.

I want to assure you, however, of my continued interest and efforts we are making towards Peace in the United States. Recently I made a trip to California where I gave ten lectures and my wife, Shirley Graham, some twenty others. We had a large and enthusiastic audience.

Very sincerely yours,

DB:lh

W.E.B. Du Bois

25-52-11


DATA
ADDRESS
FS1
FS2
TAS
BSP
BMW
TSA
SMLL
DATS
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DKF
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NTA
SP-DE

Stills from the training film *Revisor* [Auditor], produced by Ministry for State Security of the GDR (Stasi), 1985, East Germany
Collection Stasi Media Library, BstU (Stasi Records Archive)

[opposite] Briefcase with decoder used by Ministry for State Security of the GDR (Stasi), ca. 1980s, East Germany
Collection Wende Museum

Based on an actual case in 1985 involving the arrest of a man code-named Revisor, the Stasi film *Revisor* was produced to educate a small circle of secret service agents in tactics of surveillance, persecution, and arrest. The film shows how to search a residence, how to follow and inconspicuously detain a suspect in public space, and other surveillance skills.

[clockwise from top left]
Aerial compass device, n.d., Soviet Union
Collection Wende Museum

Controlling device for aerial equipment,
n.d., Soviet Union
Collection Wende Museum

Aerial communication equipment,
n.d., East Germany
Collection Wende Museum

VSA-10A rectifier, n.d., Soviet Union
Collection Wende Museum

Rod antenna for field-strenthening measuring device used to pick up radio signals, manufactured by Rohde & Schwarz, ca. 1964–1970, West Germany
Collection Wende Museum

LISTEN

[top] Briefcase used by Ministry of State Security of GDR (Stasi) with secretly recorded audiotapes, 1970s, East Germany
Collection Wende Museum

[bottom] Briefcase used by Ministry for State Security of the GDR (Stasi) with VEB Elektronik Gera voice recorder/ NVA cassette, 1979, East Germany
Collection Wende Museum

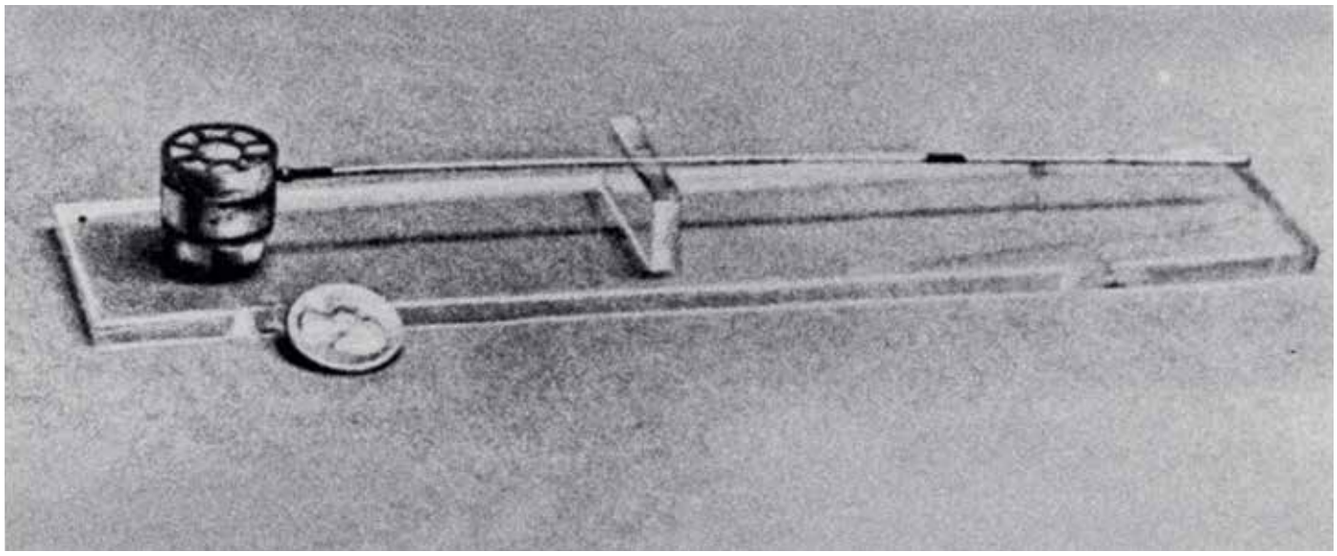
[top, left] Miniature radio listening device used by Ministry of State Security of GDR (Stasi), 1950s–1960s, Switzerland
Collection Wende Museum

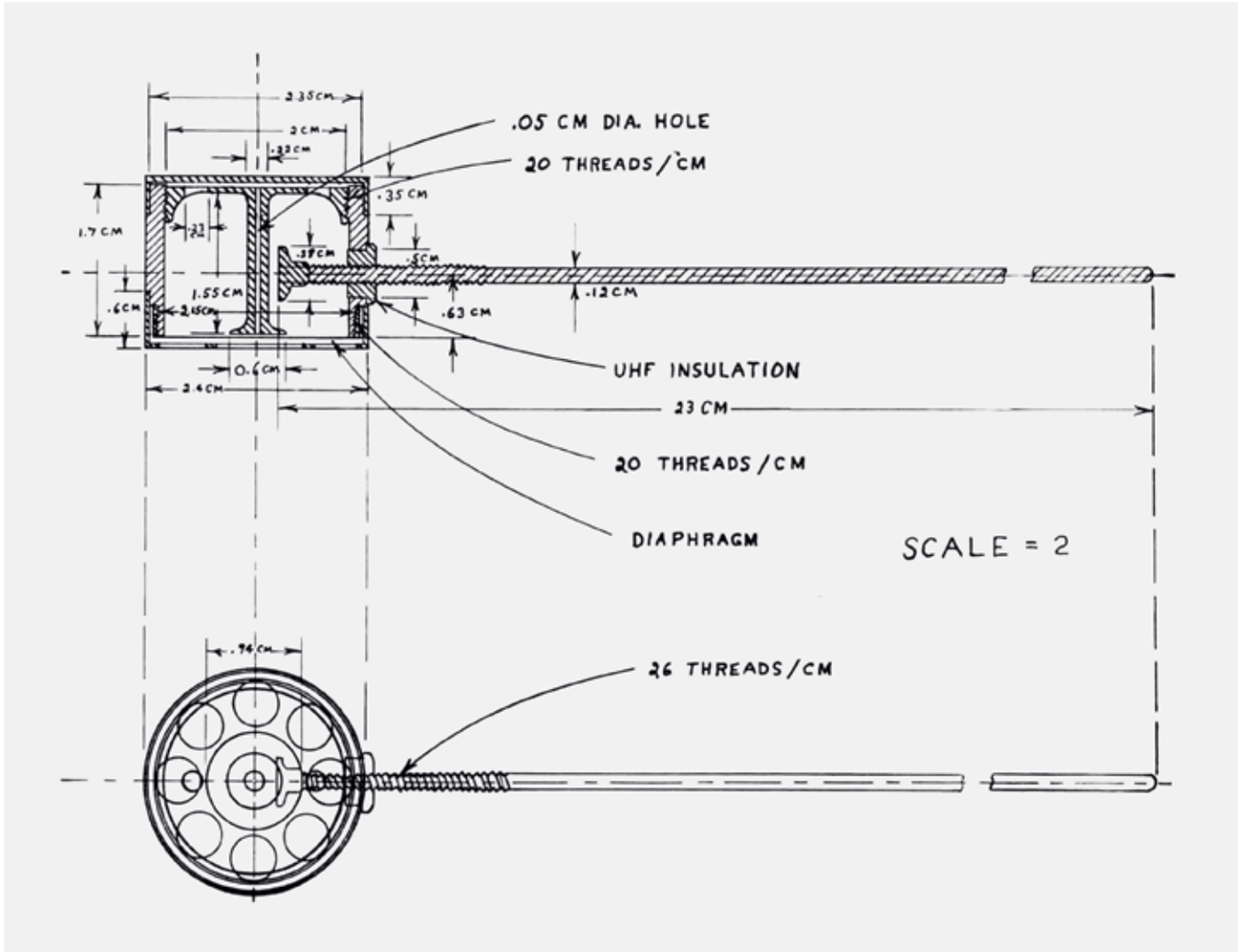
[top, right] Pen microphone used by Ministry of State Security of GDR (Stasi), 1960s–1970s, East Germany
Collection Wende Museum

[bottom] Briefcase containing passport forgery materials used by Ministry for State Security of the GDR (Stasi)
Briefcase Diagnostic Unit, ca. 1970s–1980s, East Germany
Collection Wende Museum

[top] Great Seal listening device
("The Thing"), ca. 1952, Soviet Union
Collection National Cryptologic Museum

[bottom] Technical drawing of
Great Seal listening device, 1952,
United States





Replica of Great Seal opened to show resonant cavity and microphone placement, United States
Collection National Cryptologic Museum

In August 1945, a delegation of Soviet Young Pioneers presented the U.S. Ambassador to the Soviet Union, Henry Cabot Lodge Jr., with a wood carving of the Great Seal of the United States as a gesture of friendship. For almost seven years, it hung on a wall in the library of the Ambassador's Moscow residence while a covert listening device under the beak of the eagle provided Soviet intelligence with valuable information. The discovery of the device in 1952 was a "Sputnik moment" for U.S. intelligence. The sophistication of the "The Thing"—as the device came to be known—baffled U.S. technicians and heightened concern that the Soviets were winning in the race for superior espionage technology.

The Thing was created by Leon Theremin, a Russian physicist and musician whose many inventions include the first functioning television apparatus in Russia (used as a border surveillance device) and the electronic musical instrument called the theremin, which brought him international fame. Theremin lived for a period in the United States, from 1927 to 1938, where he set up a lab and invented devices including gun detectors for the federal prison on Alcatraz Island in San Francisco Bay. For ten years, he toured the country, founded companies, married a dancer, and mingled with cultural, corporate, and scientific elites. All the while, he worked as a spy for his home country.

Upon returning to Russia in 1938, Theremin was immediately swept up in Stalin's Great Purge and sent to Kuchino, one of many secret prison labs. In these labs, called *sharashkas*, convicted scientists were forced to work on military and intelligence projects (as described in Aleksandr Solzhenitsyn's 1968 novel *The First Circle*, in which the character named Pryanchikov is thought to represent Theremin). It was at Kuchino that Theremin created The Thing and various surveillance devices that earned him a Stalin Prize, kept "secret" because his achievements were not made public.

The ingenuity of The Thing is that it has no power source of its own—it was powered and activated by a strong radio signal from outside the U.S. Ambassador's residence. Because it contained no wires or batteries, it was almost impossible to detect. However, after British and U.S. interceptors monitoring Russian radio traffic picked up voices from the Ambassador's residence, intelligence began doing sweeps of the building. They finally discovered the bug in 1952 when the Soviets activated it during one such sweep.

U.S. Ambassador to the Soviet Union Henry Cabot Lodge Jr. presents the Great Seal that held a Soviet listening device ("The Thing") to Special Meeting of the United Nations Security Council, New York, May 26, 1960

The discovery of "The Thing" was not revealed immediately to the public. In secret, U.S. spy agencies struggled to replicate its technology, as did multiple allied intelligence agencies. These efforts led to spin-offs such as the EASYCHAIR Mark I. In 1960, the United States revealed The Thing at a United Nations conference to distract from the downing of an American U-2 reconnaissance plane over Soviet territory.

After his release from prison in 1947, Theremin worked for Soviet intelligence until the 1960s, when he found work at the Moscow State Tchaikovsky Conservatory. There he returned to developing electronic musical instruments, but he was fired in 1971 because electronic music was considered a violation of socialist aesthetics. He next became a mechanic at Moscow State University and continued working on music under the radar. Theremin lived to see the fall of communism and visited the United States one last time in 1991, where he was celebrated as one of the fathers of analog electronic music. He passed away in 1993, at ninety-seven years of age.

Stills from news footage of Special Meeting of the United Nations Security Council, New York, May 26, 1960
Universal Newsreels, Universal Studios

Joanne Pearce Martin, Principal Keyboardist and Katharine Bixby Hotchkis Chair of the Los Angeles Philharmonic Orchestra, playing the theremin, Los Angeles, 2024
Courtesy of the artist

[opposite] Moog Etherwave theremin, 1996–ongoing, United States
Collection Regina Mamou

Invented by Leon Theremin in 1919, the theremin is an electronic musical instrument controlled without physical contact by the performer, or "thereminist." Its metal antennae, typically two in number, sense the relative position of the performer's hands. Oscillators for frequency (tone) are controlled by one hand and amplitude (volume) by the other. The electric signals from the theremin are amplified through a loudspeaker.

The theremin resulted from Soviet research into proximity sensors. After demonstrating the instrument to packed houses on a lengthy tour of Europe, Theremin moved to the United States, where he patented his invention in 1928 and granted commercial production rights to Radio Corporation of America (RCA).

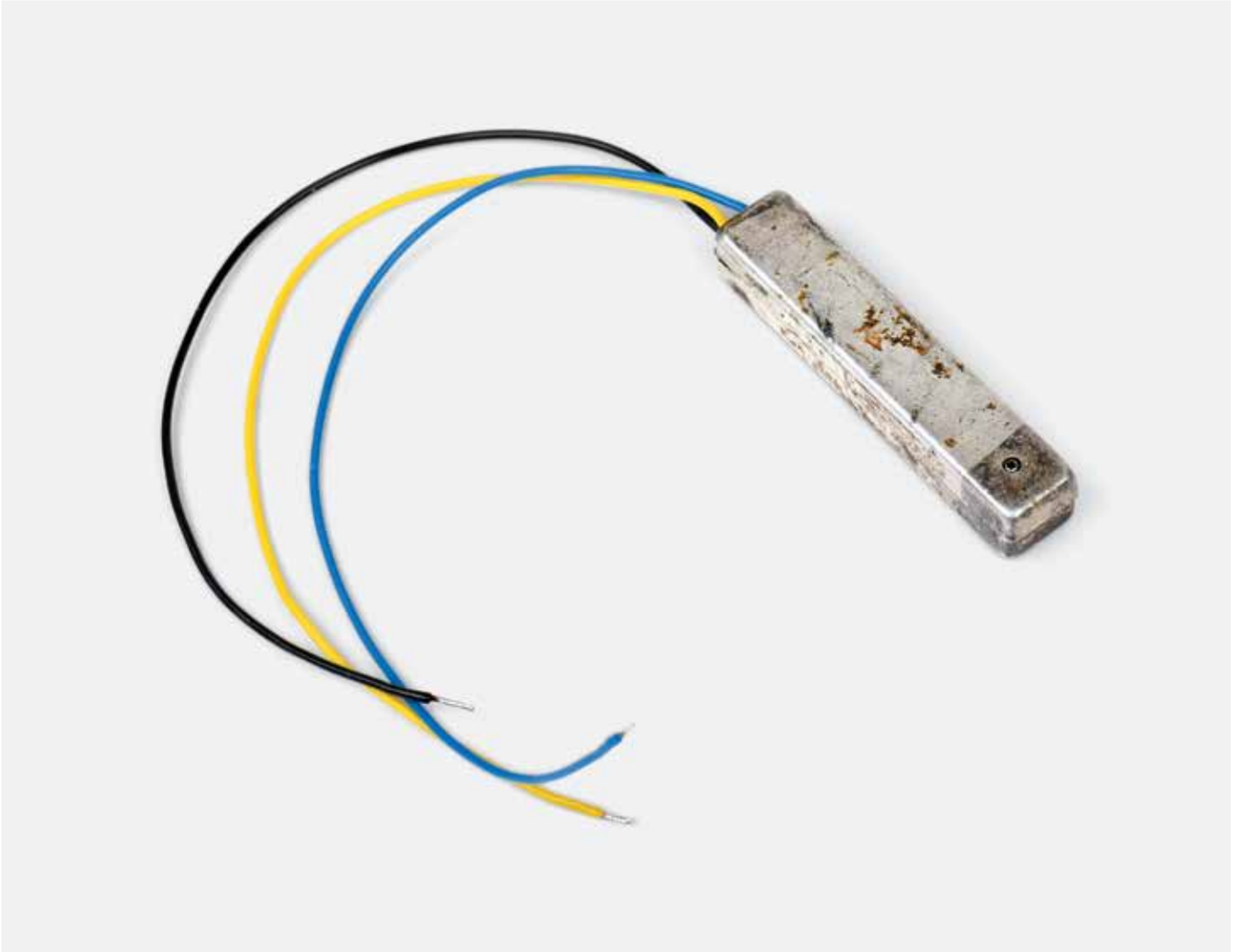
The theremin was hugely influential on the pioneers of electronic music, most notably the engineer Robert Moog, inventor of the commercial synthesizer called the Moog. The theremin has been widely used in science fiction film scores, especially to create a sense of suspense. Composers in the modern tradition who wrote for the theremin include Bohuslav Martinů and Edgard Varèse. In popular music, bands such as The Rolling Stones, Simon and Garfunkel, Led Zeppelin, Frank Zappa, and The Beach Boys have inflected their songs with the theremin's sound.


moog
Blackstar

Listening device used by Department of State Security (Securitate), 1978, Romania
Collection Crypto Museum

The Romanian secret service planted the listening device pictured below inside the wall of a Romanian institution in the late 1970s. It was discovered years after the fall of the communist regime in 1989. Reliant on an analogue telephone line for its power supply and audio signal, it contains only Western-produced electronic components, including a sensitive miniature microphone produced by the U.S. manufacturer Knowles, which the CIA funded.

Commissioned by the U.S. government's Central Intelligence Agency, the Dutch Radar Laboratory developed the SRS-153 listening device based on a Soviet-produced bug found hidden in an ambassador's desk. The CIA also commissioned the Dutch Radar Laboratory to develop the EASYCHAIR MARK I, directly inspired by "The Thing."



[top] EASYCHAIR MARK 1 listening device with antenna, manufactured by Dutch Radar Laboratory (NRP), 1955, Netherlands
Collection Crypto Museum

[middle] SRS-153 listening device, manufactured by Dutch Radar Laboratory (NRP), 1978, Netherlands
Collection Crypto Museum

[bottom] 31217 listening device, developed by the Institute for Technical Research, Ministry for State Security of the GDR (Stasi), 1978, East Germany
Collection Crypto Museum

[top] Nagra SN miniature recording device, manufactured by Nagra Kudelski, 1970, Switzerland
Collection Crypto Museum

[bottom] Yachta-1M miniature recording device, manufactured by Special Machinery, Factory of Kiev, 1987, Soviet Union
Collection Crypto Museum

[opposite, top] TA-57 field telephone, after 1965, Soviet Union
Collection Wende Museum

[opposite, bottom] Alycha listening device, n.d., Soviet Union
Collection Wende Museum

While both sides of the Iron Curtain developed their own surveillance devices, some materials and technologies were copied from the other side. This could be the result of spies acquiring secret information, and it sometimes involved researchers reverse-engineering confiscated or stolen devices. A number of listening devices and spy cameras from Soviet Bloc countries were direct copies of devices and technologies produced in the West, and vice versa.


A4 N2126 I C17-19/25 II C17-17/25

WATCH

[top] Minox 35 EL miniature camera, manufactured by Minox, 1974, West Germany
Collection Crypto Museum

[bottom] Kiev 35A miniature camera, manufactured by Arsenal Factory, Kiev, 1985–1991, Soviet Union
Collection Crypto Museum

The Soviet Kiev 35A is an almost identical copy of the Minox 35 EL, produced in West Germany. Both cameras have an iconic red shutter button at the top. The Kiev 35A is the smallest 35 mm camera ever produced. It can easily be hidden inside a clothing pocket, making it ideal for discreet document capture and other photography by working spies. Its accessories are fully interchangeable with those of the Minox 35 EL, but the product quality of the Kiev 35A is significantly compromised by electronic failures.

Spy belt used by Soviet Committee for State Security (KGB) with attachment for concealed F-21 camera, n.d., Soviet Union
Collection Wende Museum

Robot Star 50 camera, manufactured by Robot Foto & Electronic GmbH and Schneider-Werke Kreuznach, 1971, East Germany
Collection Runde Ecke, Leipzig; Gedenkstätte Museum in der "Runden Ecke" mit dem Museum im Stasi-Bunker, Leipzig

[opposite, from top] F-21 miniature camera with manual timer, manufactured by Krasnogorsk Mechanical Works (KMZ), 1972, Soviet Union
Collection Runde Ecke, Leipzig; Gedenkstätte Museum in der "Runden Ecke" mit dem Museum im Stasi-Bunker, Leipzig

F-21 camera mounted in concealment device, n.d., Soviet Union
Collection Wende Museum

F-21 (or Ajax-12) miniature 35 mm camera, manufactured by Krasnogorsk Mechanical Works (KMZ), n.d., Soviet Union
Collection Crypto Museum

Spy camera case used by Soviet Committee for State Security (KGB), manufactured by Krasnogorsk Mechanical Works (KMZ), n.d., Soviet Union
Collection Wende Museum

The wind-up Robot Star 50 camera was developed in 1969 in East Germany, based on earlier models of the Robot Star from the 1950s. These cameras inspired the design of the Ajax-12 camera, popular within the Soviet KGB and other Eastern European secret services, including the East German Stasi.


T72295

[top, left] Minox-B miniature camera, manufactured by Minox, 1958–1969, West Germany
Collection Crypto Museum

[top, middle] Minox-C miniature camera, manufactured by Minox, 1969–1978, United States
Collection National Cryptologic Museum

[top, right] Tessina-35 miniature camera, manufactured by Siegrist and distributed by Concava, 1957–1996, Switzerland
Collection Crypto Museum

[bottom] Zenit FS-12 photo sniper, manufactured by Krasnogorsk Mechanical Works (KMZ), ca. 1980s, Soviet Union
Collection Wende Museum

A high-quality subminiature camera that fits in the palm of a hand, the Minox-B camera was immensely popular among spies on both sides of the Iron Curtain. Officially replaced by the Minox-C in 1969, it remained in use until the early 1990s.

The Tessina-35 miniature camera can be worn around the wrist like a watch. In East Germany, Stasi agents often concealed it in a pack of cigarettes or a key wallet. In 1972, FBI investigators found a Tessina-35 on one of the "plumbers" who orchestrated the break-in at the Democratic National Committee's headquarters in the Watergate complex in Washington, D.C. The camera was used as evidence in the subsequent criminal trials of the Watergate Seven.

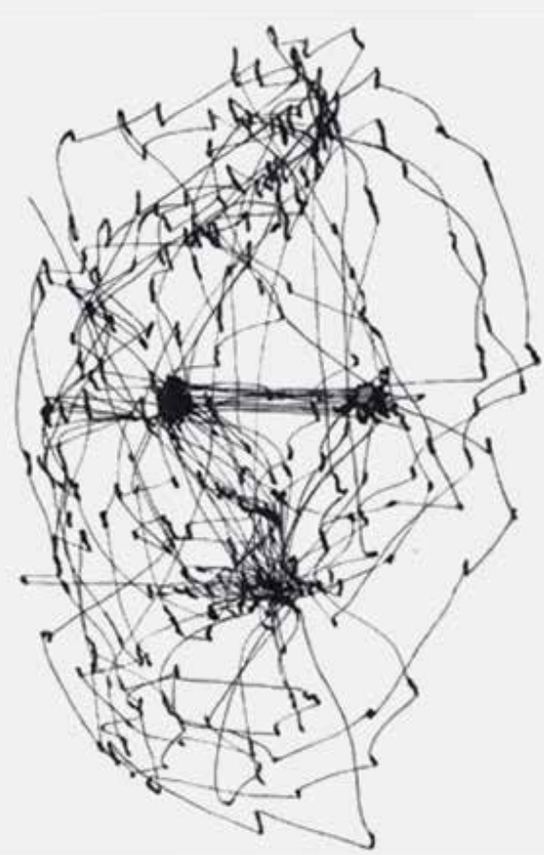
Front and back of Praktica SR-899 camera, manufactured by VEB Kombinat Pentacon Dresden, 1977, East Germany
Collection Wende Museum

Record of the subject's eye movements while examining photograph, reproduced in "Eye Movements During Perception of Complex Objects" by Alfred L. Yarbus, published in *Ogonek*, no. 23 (1959), Soviet Union

[opposite, top] Surveillance camera, n.d., East Germany
Collection Wende Museum

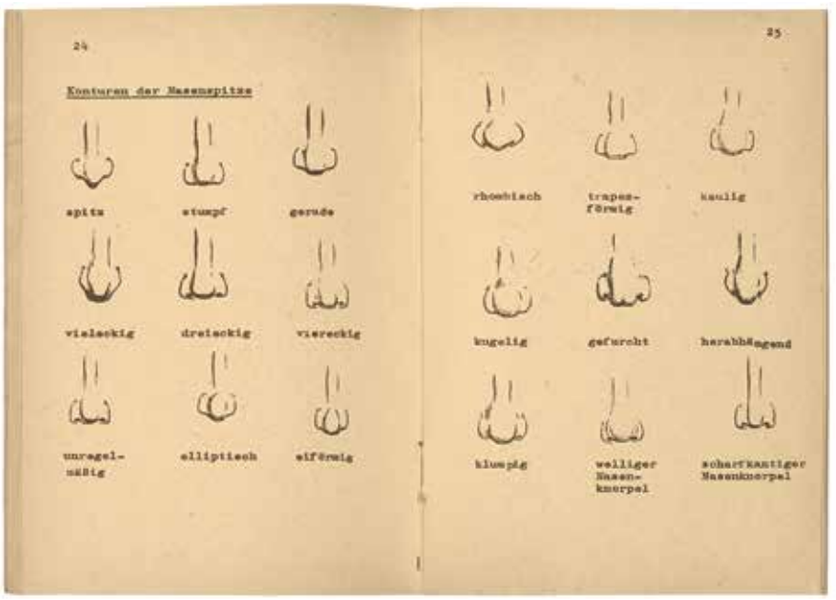
[opposite, bottom] Television monitor, n.d., East Germany
Collection Wende Museum

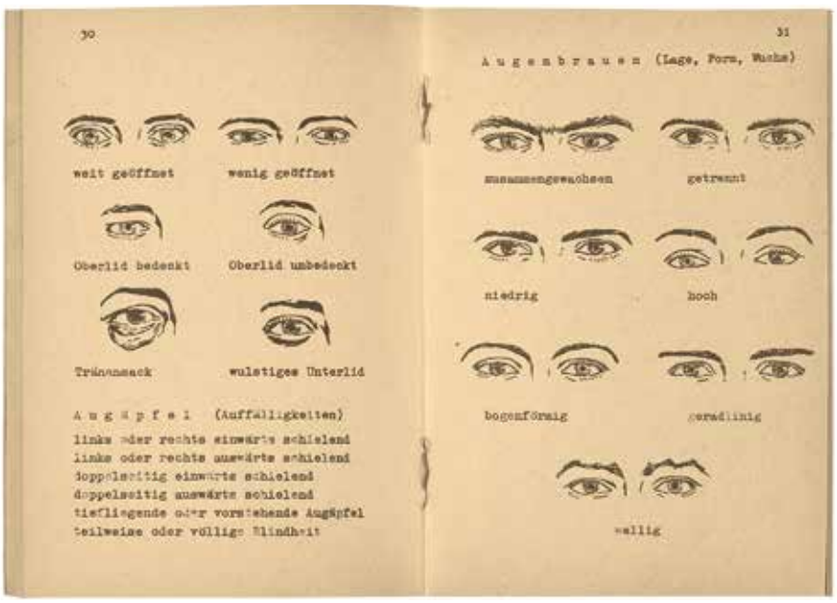
Alfred L. Yarbus was a Soviet psychologist who studied eye movements in the 1950s and '60s. He recorded such movements as his subjects viewed objects, scenes, and artworks. His book *Eye Movements and Vision*, first published in Russian in 1965, describes the trajectories followed by a subject's eye as they performed a task. According to Yarbus, when a subject was asked about an image, their eyes typically focused on the area they considered relevant to the question. Their eyes tended, he noted, to jump back and forth between parts of a scene, object, or portrait, for example triangulating between the eyes, nose, and mouth.

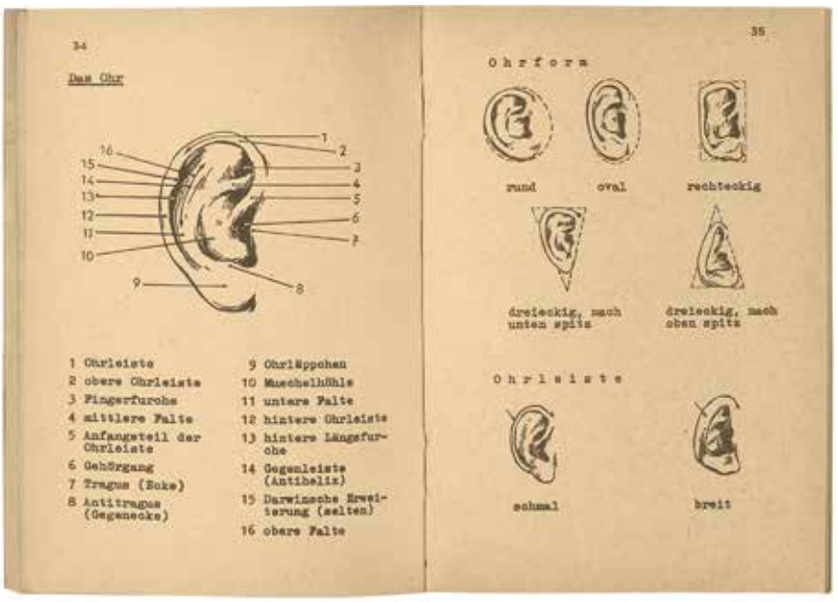


IDENTIFY

[this page and opposite]
Pages from “Merkmale des Äußeren von Personen” [Illustrated manual of facial characteristics], Checkpoint Charlie border guard training materials, 1970, East Germany
Collection Wende Museum







40

Der Mund

Mundgröße

groß klein

Mundwinkel

aufwärts verlaufend abwärts verlaufend
(links, rechts oder beidseitig)

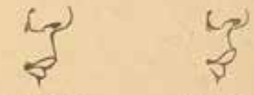
Mundform

offenstehender Mund | herzförmig | schiefer Mund

41

Die Lippen

schmale (dünne) Lippen | breite (dicke) Lippen



vorstehende Oberlippe | aufgeworfene Oberlippe

vorstehende Unterlippe | abstehende Unterlippe

46

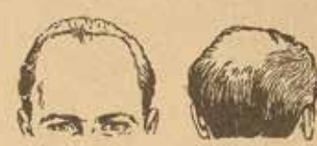
Haaransatz

kreisförmig | gerade

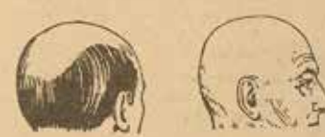
kleine Stirnecken | große Stirnecken

47

Weitere Merkmale sind



Stirnglatze | Wirbelglatze



Haarkranz | Vollglatze

48

Haarfrisur

gescheitelt (rechts, links, in der Mitte) oder
ungescheitelt (glatt nach vorn oder hinten gekämmt)

Eine weitere Unterscheidung wird vorgenommen

- bei männlichen Personen nach:
  - Fassonschnitt
  - Rundschnitt
  - Messerformschnitt
  - Bürsten- oder Igelschnitt
  - Langhaarfrisur
- bei weiblichen Personen
  - Kurzhaarfrisur
  - mittellange Frisur
  - Langhaarfrisur

49

Der Bart

Oberlippenbart

schmal | breit | körrec

Schnurbart

aufgestellt | gerade Bart-spitzen | hängend

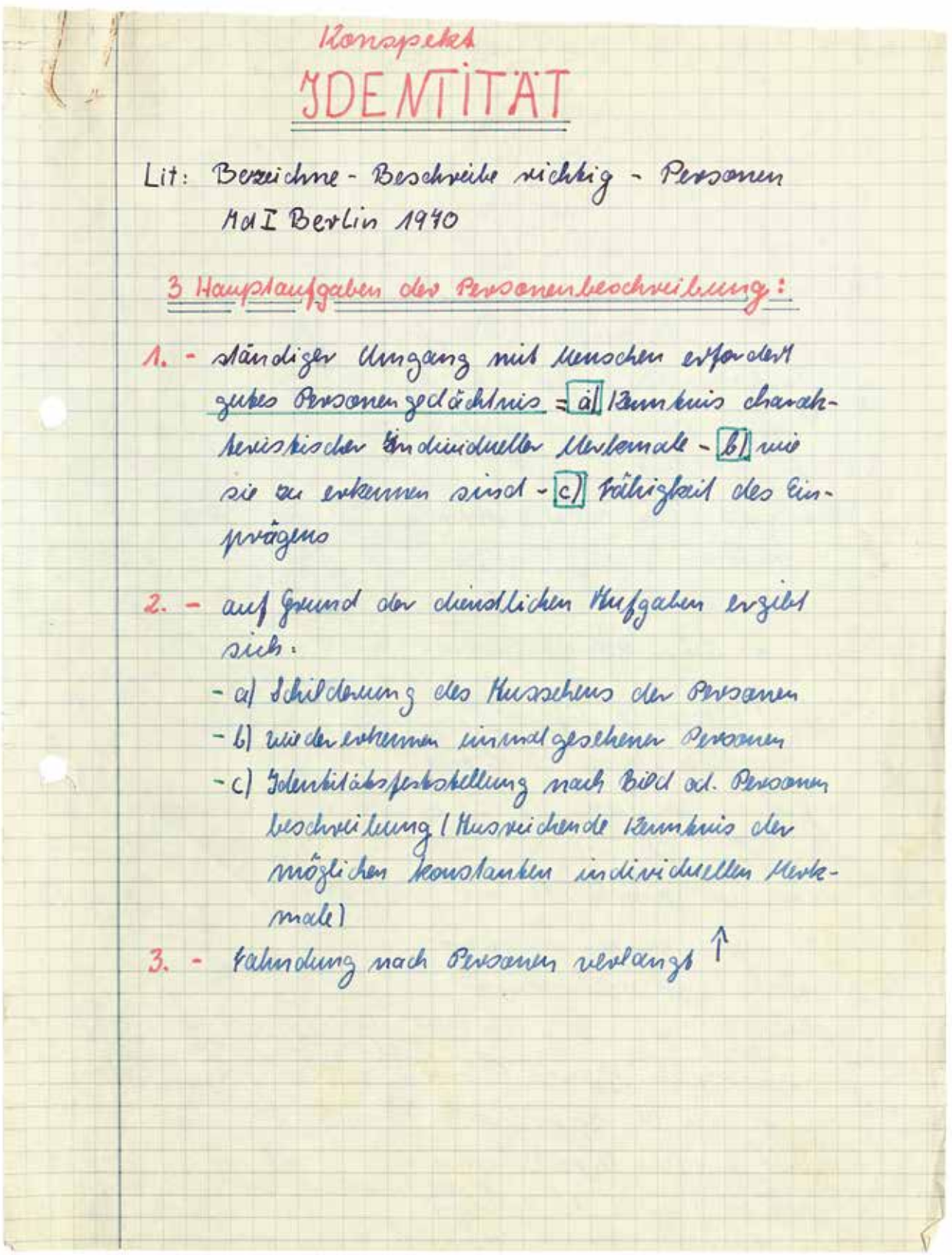
Kinnbart

spitz | breit

Vollbart

Darweiteren sind Koteletten-bärte zu beachten.

[this page, opposite, and following spread]
Hand-drawn facial recognition images and notes, Checkpoint Charlie border guard training materials, 1975–1989, East Germany
Collection Wende Museum



Konspekt

IDENTITÄT

Lit: Bezeichne - Beschreibe richtig - Personen
MdI Berlin 1970

3 Hauptaufgaben der Personenbeschreibung:

1. - ständiger Umgang mit Menschen erfordert gutes Personengedächtnis = a) Kenntnis charakteristischer individueller Merkmale - b) wie sie zu erkennen sind - c) Fähigkeit des Einprägens

2. - auf Grund der dienstlichen Aufgaben ergibt sich:
   - a) Schilderung des Aussehens der Personen
   - b) wiedererkennen einmal gesehener Personen
   - c) Identitätsfeststellung nach Bild od. Personenbeschreibung (Kurzzeichende Kenntnis der möglichen konstanten individuellen Merkmale)

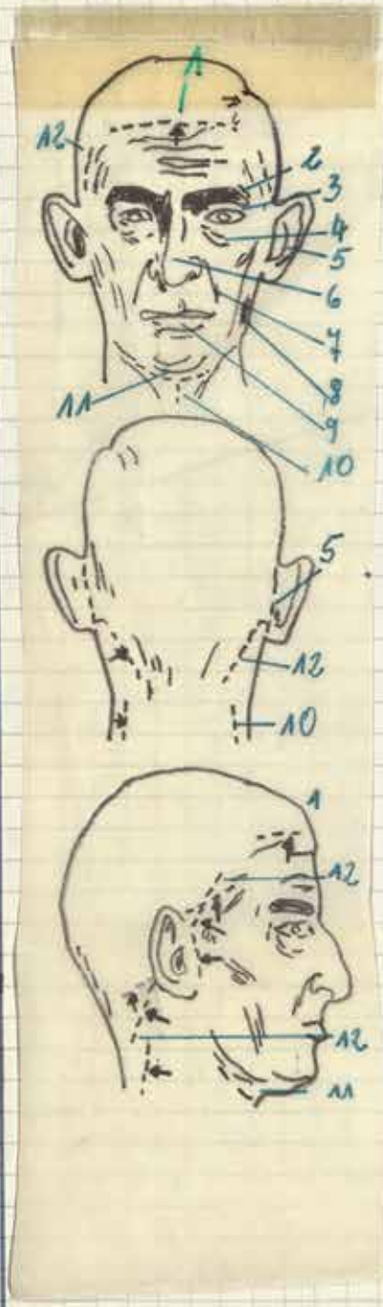
3. - Fahndung nach Personen verlangt ↑

14

5.1. Kosmetische Chirurgie

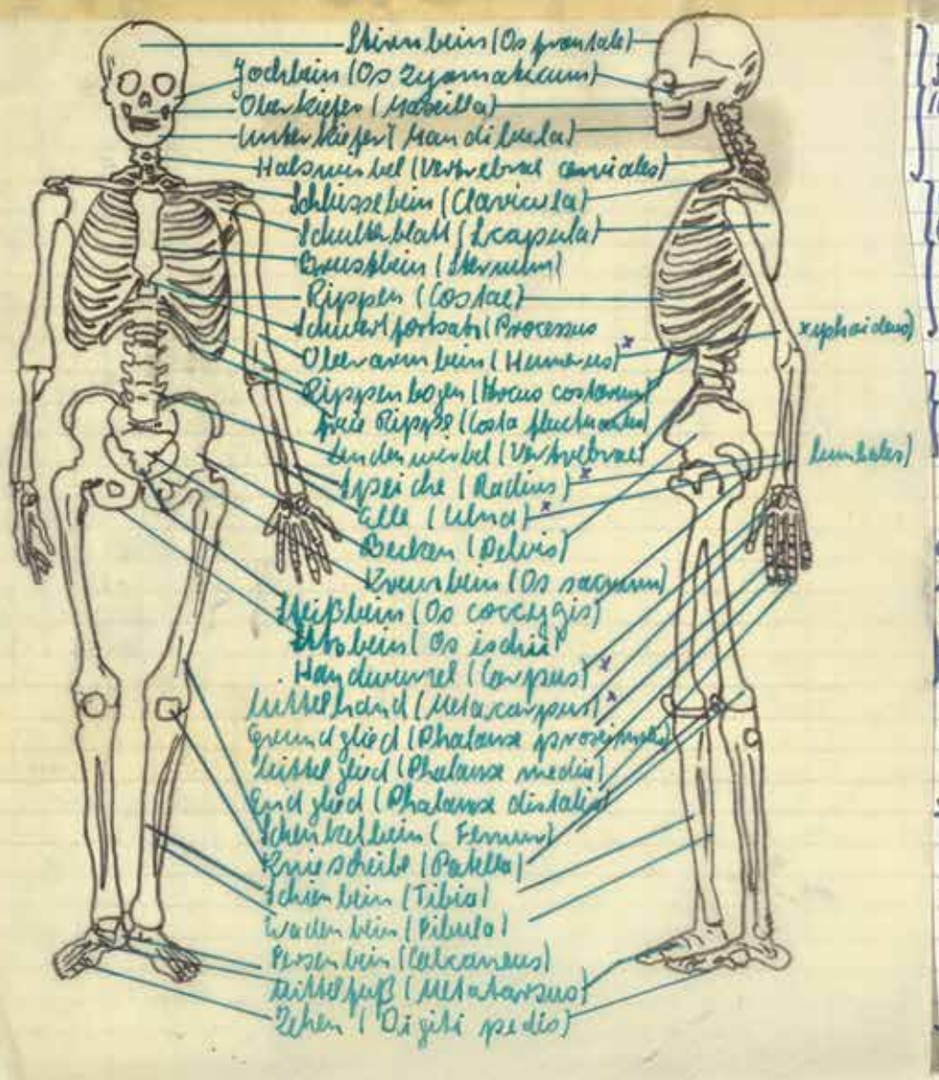
--- sichtbare Op-Narben

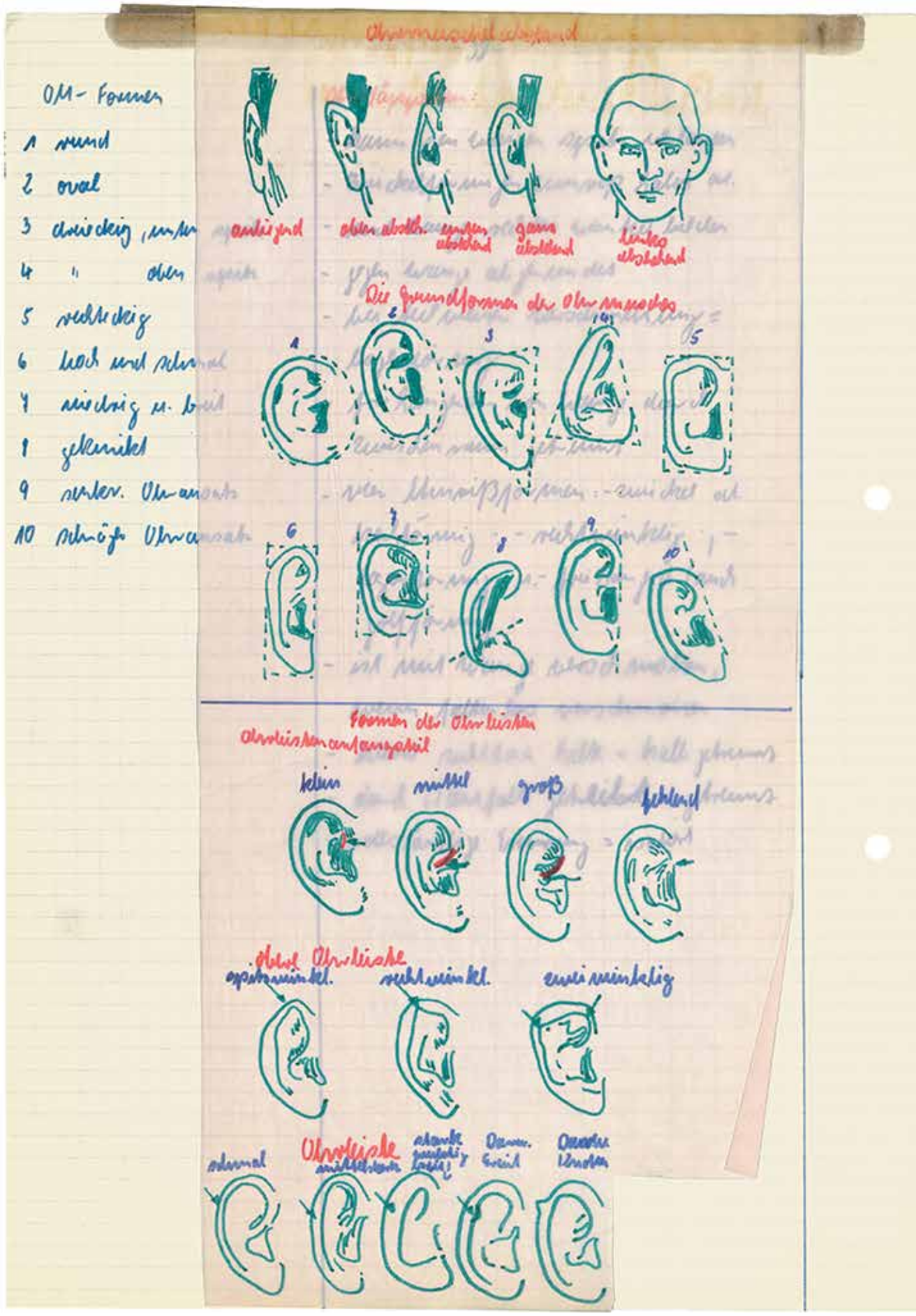
4 Spannnähte der Haut



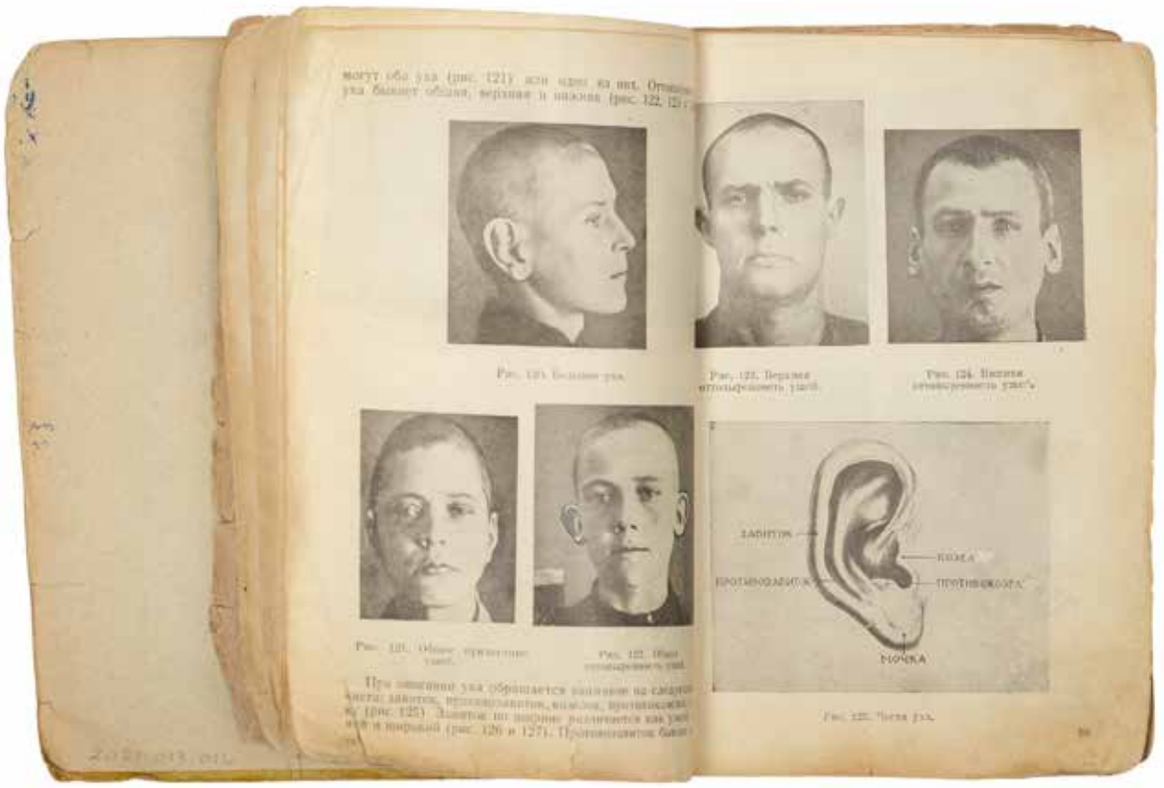
1 Beseitigung von Stirnfalten
2 Veränderung der Augenbrauenlage
3 " " Augenlider
4 Entfernung " Tränensäcke
5 Veränderung der Ohrmuscheln
6 Verschmälerung der Nasenspitze und der Knochen der Nase, Richten, verkürzen u. Verlängerung
7 Entfernung der Nasolabialfalten
8 Entfernung von Muttermalen u. Fehlbildungen der Haut
9 Verschmälerung Unterlippe
10 Straffung der Halshaut
11 Beseitigung Doppelkinn
12 Spannung der Gesichtshaut (Lifting-Dorl)

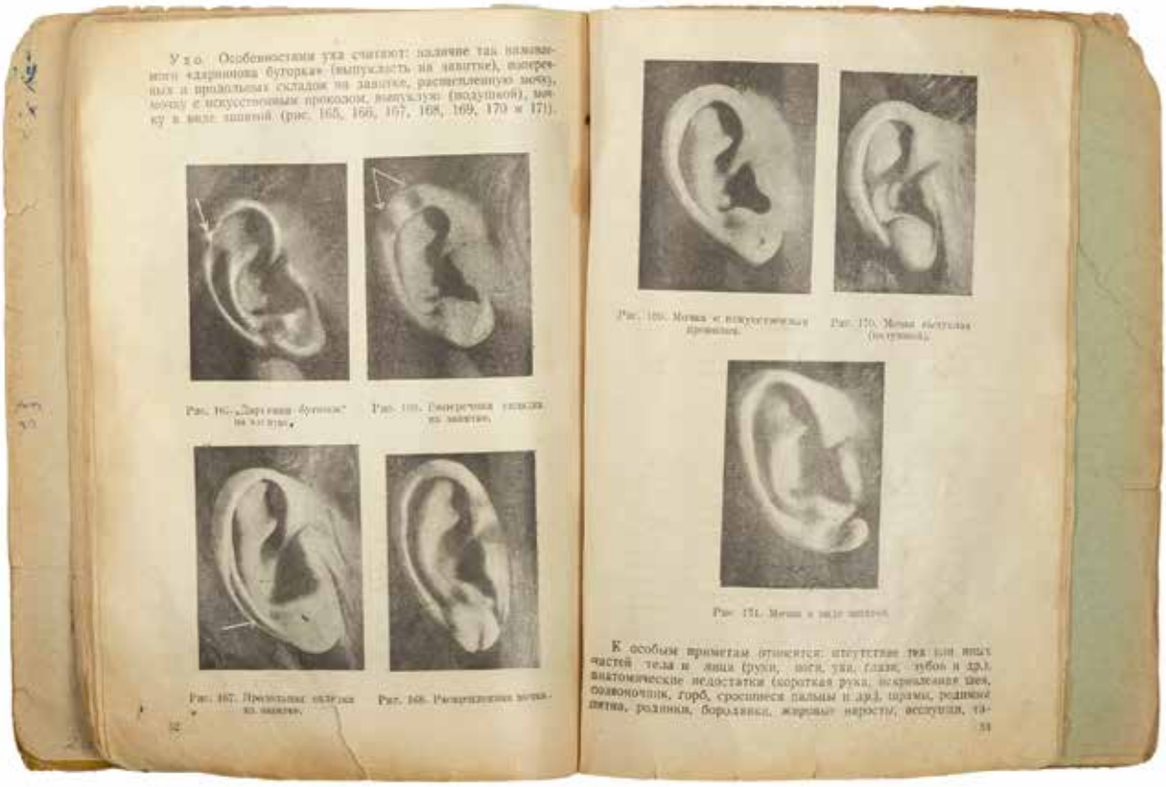
3. Das menschliche Skelett




OM - Formen
1 rund
2 oval
3 dreieckig, unten
4 " oben
5 rechteckig
6 hoch und schm
7 niedrig u. b
8 gekrümmt
9 verkr. Ohr
10 schräge Ohr
anliegend
oben abstehend
unten abstehend
ganz abstehend
hinten abstehend
Die Grundformen der Ohrmuschel
Formen der Ohrläppchen
Ohrläppchen ausgeprägt
klein
mittel
groß
fehlend
oberer Ohrlöcher
Ohrlöcher
einwinkelig
Ohrlöcher
normal
Ohrmuschel
abstehend
Ohrm. Kreis
Ohrm. Kreis

[this page and opposite]
Documentation of facial descriptions, from Higher Military Command School of Soviet Ministry of Internal Affairs (MGB) manual, 1952, Soviet Union
Collection Wende Museum





Ухо. Особенностями уха считают: наличие так называемого «дарвинова бугорка» (выпуклость на завитке), поперечных и продольных складок на завитке, расщепленную мочку, мочку с искусственным проколом, выпуклую (воздушной), мочку в виде шишей (рис. 165, 166, 167, 168, 169, 170 и 171).

Рис. 165. «Дарвинов бугорок» на завитке.

Рис. 166. Поперечная складка на завитке.

Рис. 167. Приклеенная мочка.

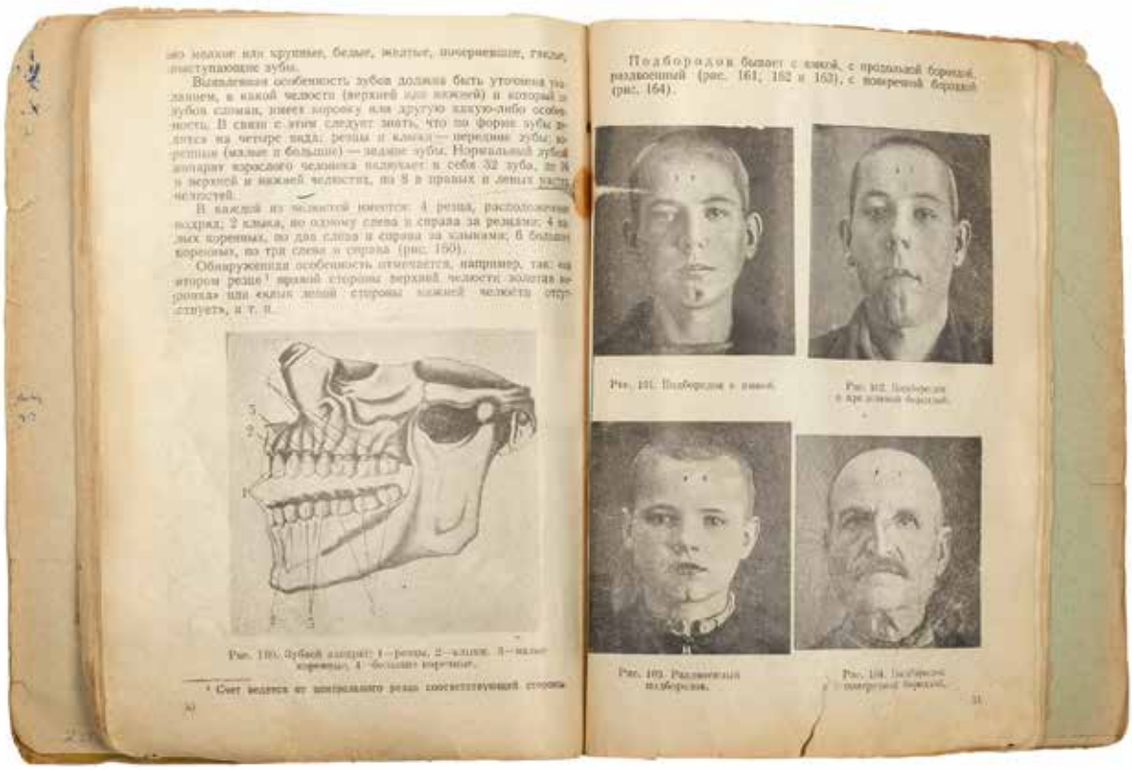
Рис. 168. Расщепленная мочка.

Рис. 169. Мочка с искусственным проколом.

Рис. 170. Мочка выпуклая (воздушная).

Рис. 171. Мочка в виде шишей.

К особым приметам относятся: отсутствие тех или иных частей тела и лица (руки, ноги, уха, глаза, зубов и пр.), анатомические недостатки (короткая рука, искривление шеи, позвоночник, горб, сросшиеся пальцы и пр.), шрамы, родимые пятна, родинки, бородавки, жировые наросты, вступая, ...питка, родинки, бородавки, жировые наросты, вступая, та-



...ные или крупные, белые, желтые, почерневшие, такие, выступающие зубы.

Выявленная особенность зубов должна быть уточнена указанием, в какой челюсти (верхней или нижней) и которые зубы сломаны, имеют коронку или другую какую-либо особенность. В связи с этим следует знать, что по форме зубы делятся на четыре вида: резцы и клыки — передние зубы; коренные (малые и большие) — задние зубы. Нормальный зубной аппарат взрослого человека насчитывает в себе 32 зуба, по 16 в верхней и нижней челюстях, по 8 в правых и левых частях челюстей.

В каждой из челюстей имеются: 4 резца, расположенные подряд; 2 клыка, по одному слева и справа за резцами; 4 малых коренных, по два слева и справа за клыками; 6 больших коренных, по три слева и справа (рис. 160).

Обнаруженная особенность отмечается, например, так: «на втором резце[1] правой стороны верхней челюсти золотая коронка» или «клык левой стороны нижней челюсти отсутствует», и т. п.

Рис. 160. Зубной аппарат: 1—резцы, 2—клыки, 3—малые коренные, 4—большие коренные.

[1] Счет ведется от центрального резца соответствующей стороны.

Подбородок бывает с ямкой, с продольной бороздой, раздвоенный (рис. 161, 162 и 163), с поперечной бороздой (рис. 164).

Рис. 161. Подбородок с ямкой.

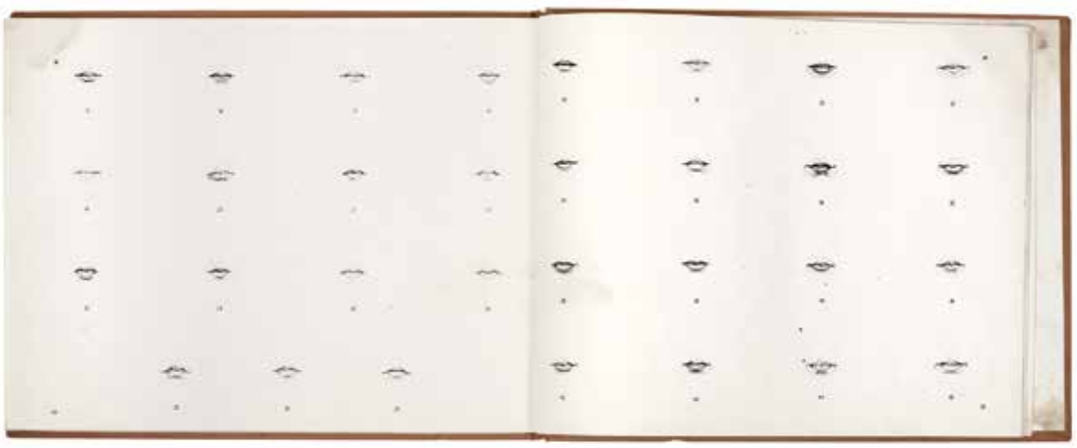
Рис. 162. Подбородок с продольной бороздой.

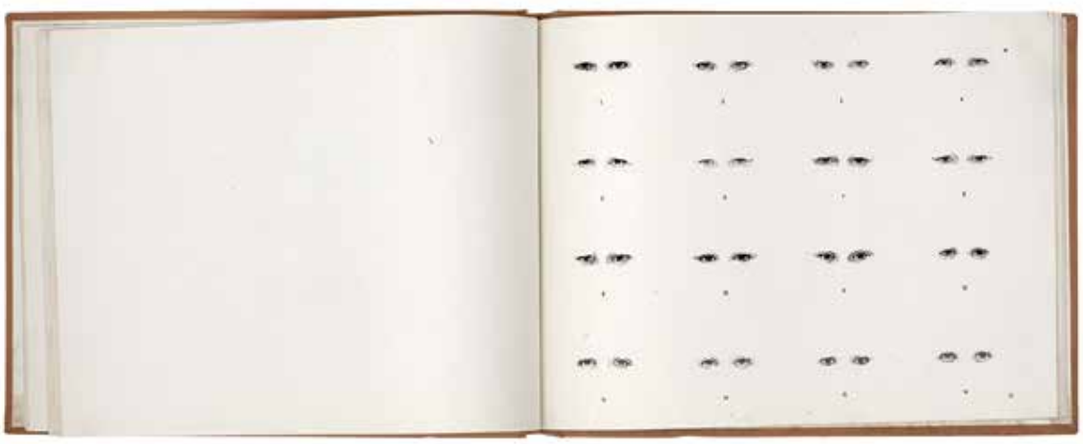
Рис. 163. Раздвоенный подбородок.

Рис. 164. Подбородок с поперечной бороздой.

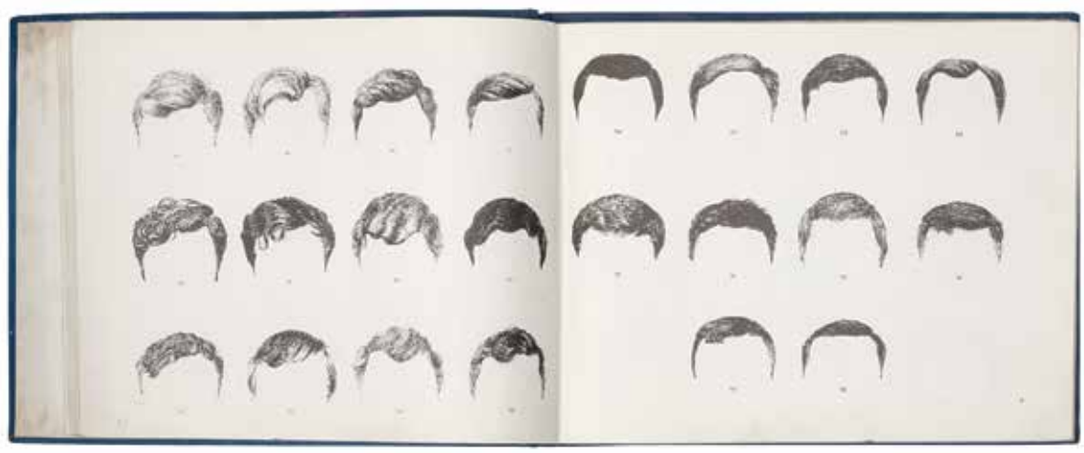
Soviet Ministry of Internal Affairs (MGB) portrait album registrar of female elements of physical appearance, 1988, Soviet Union
Collection Wende Museum

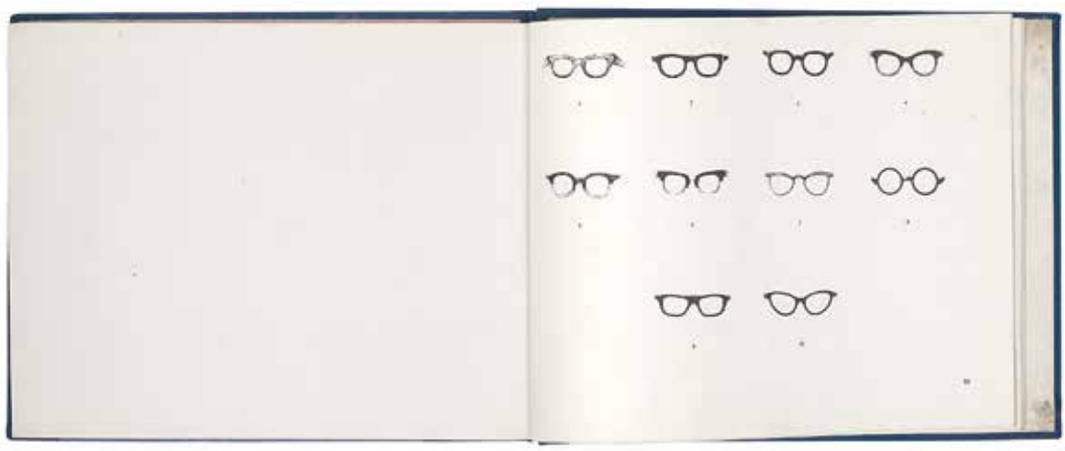
[opposite] Soviet Ministry of Internal Affairs (MGB) portrait album registrar of male elements of physical appearance, 1988, Soviet Union
Collection Wende Museum





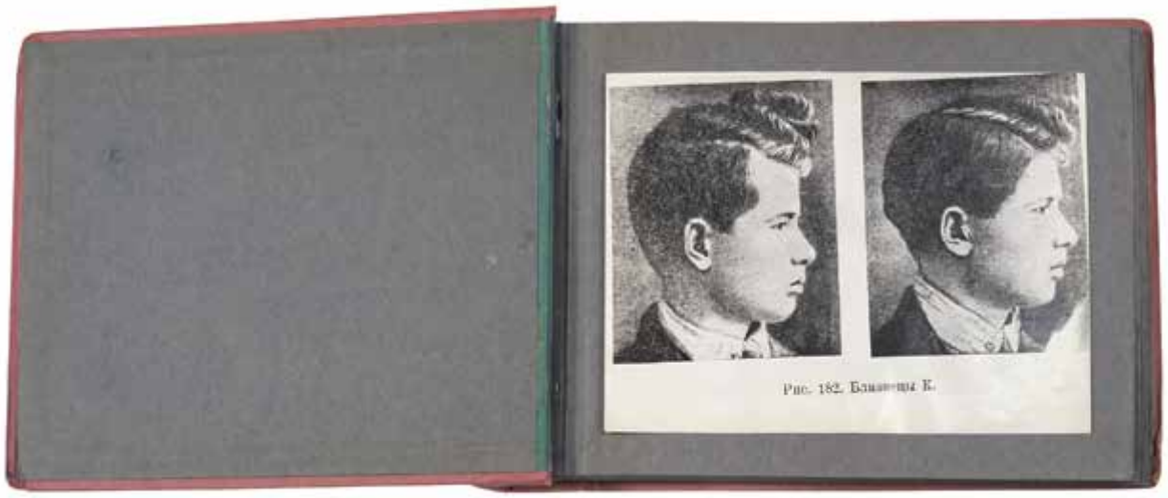

„ПОРТРЕТ“
АЛЬБОМ-РЕЕСТР
мужских элементов внешности

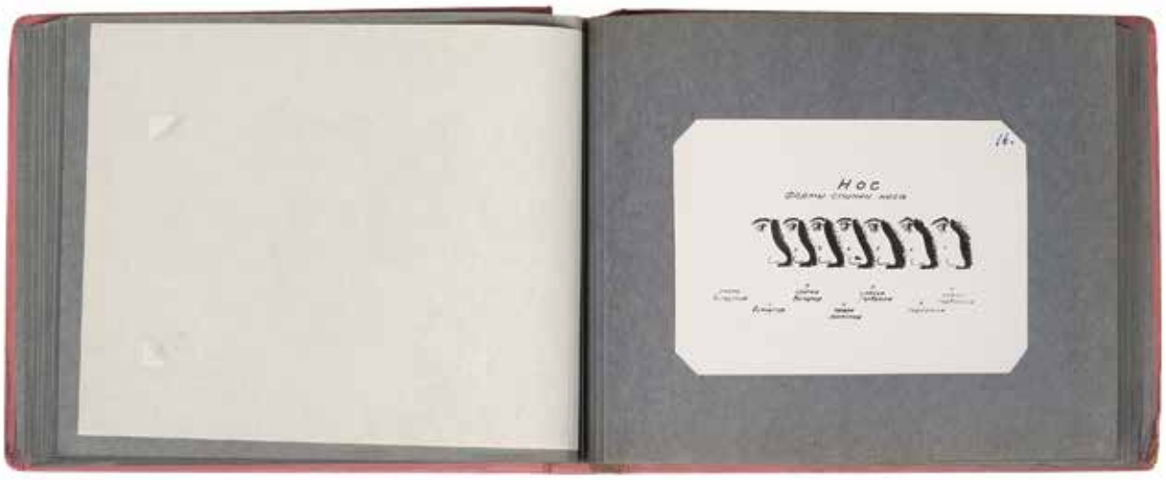




Facial recognition album, 1981, Soviet Union
Collection Wende Museum

[opposite] Illustrations with forensic descriptions, from Soviet Ministry of Internal Affairs (MGB) manual, 1984, Soviet Union
Collection Wende Museum





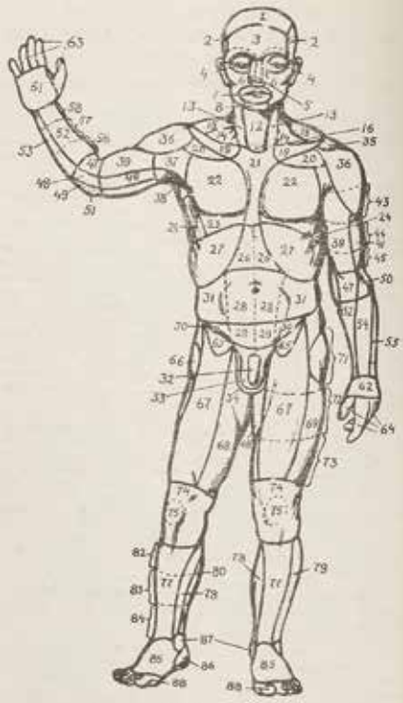


Рис. 1.

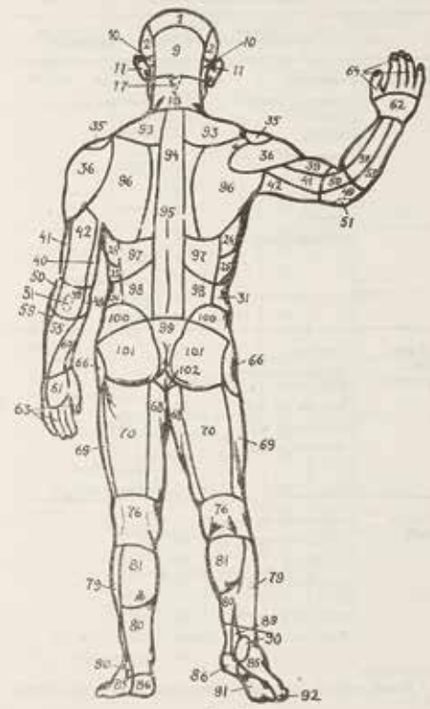


Рис. 2.

49.4. **Большой, выпуклый, круглый** — сильно выступающий за плоскость грудной клетки.
49.2. **Малый, плоский** — передний край живота находится в плоскости грудной клетки.
49.1. **Втянутый** — передний край живота находится за условной вертикальной плоскостью.
«Отвисший» — складки нижней части живота прикрывают паховую область;
«мускулистый» — отчетливо видны мышцы живота;
«гладкий» — ровная, плавная поверхность живота (без четко выраженных складок).

50. СПИНА

Описывается по форме, ширине и особенностям.

50.1. ФОРМА

Определяется в профиль применительно к контуру линии спины.
50.1.4. **Выпуклая, «сутулая», «круглая»** — линия спины изогнута.
50.1.3. **Плоская, «прямая»** — линия спины без заметных изгибов, спина имеет уплощенную форму (рис. 49).

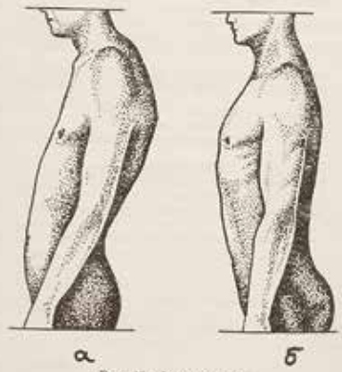


Рис. 49. *Форма спины.*
а — выпуклая, б — плоская.

50.2. ШИРИНА

Определяется сзади в соответствии с шириной плеч.
50.2.3. **Средняя** — при плечах средней ширины.
50.2.4. **Широкая** — при широких плечах.
50.2.2. **Узкая** — при узких плечах.

50.3. КОНТУР

Определяется сзади путем приближения к различным геометрическим фигурам.
50.3.0. **Коническая** — боковые линии спины идут сверху вниз по сходящимся направлениям.
50.3.0. **Трапециевидная** — боковые линии спины идут сверху вниз по расходящимся направлениям.
50.3.0. **Прямоугольная** — боковые линии спины идут параллельно.

50.4. ОСОБЕННОСТИ

Описываются с учетом деформации спины.
50.4.0. **Крыловидные лопатки** — сильное выступание лопаток;
«костлявая» — слабый мускульный тонус, сильное отставание углов лопаток, выступание костей позвоночника.
50.4.0. **Горб** — уродливая выпуклость на спине, образовавшаяся вследствие повреждения позвоночника.
50.4.0. **Сколиоз** — искривление позвоночника вправо или влево.

51. ТАЛИЯ

Описывается при указании особенностей строения фигуры по положению, длине и ширине.

51.1. ПОЛОЖЕНИЕ

51.1.4. **Высокая** — как правило, при укороченном туловище.
51.1.2. **Низкая** — как правило, при длинном туловище.

51.2. ДЛИНА

Определяется в фас с учетом длины туловища.
51.2.4. **Длинная** — плавный переход от грудной к бедренной части.
51.2.2. **Короткая** — резкий переход от грудной к бедренной части.

51.3. ШИРИНА

Определяется со спины по сужению в силуэте.
51.3.3. **Средняя** — сужение заметно.
51.3.4. **Широкая** — сужение отсутствует.
51.3.2. **Узкая** — сужение резко выражено.

51.4. ОСОБЕННОСТИ

«Осиная» — подчеркнуто узкая;
«изящная» — талия не просматривается.

Diese getroffenen Feststellungen mindern in keinem Fall den Identifizierungswert des Ohres. Die von mir durchgeführten Untersuchungen weisen aus, daß das Ohr, wenn es eindeutig zu vergleichen ist, immer und zumeist an erster Stelle zur Identifizierung herangezogen wird.

Worin bestehen nun aber die Ursachen für das häufige Identifizieren an Nase, Mund, Augen, Kinn? Es sind mehrere Ursachen, die dabei eine Rolle spielen können:

Sie ergeben sich wahrscheinlich aus dem psychologischen Aspekt des Wahrnehmens. Hierbei spielen die gnostischen perzeptiven Handlungen der Wahrnehmung eine besondere Rolle.

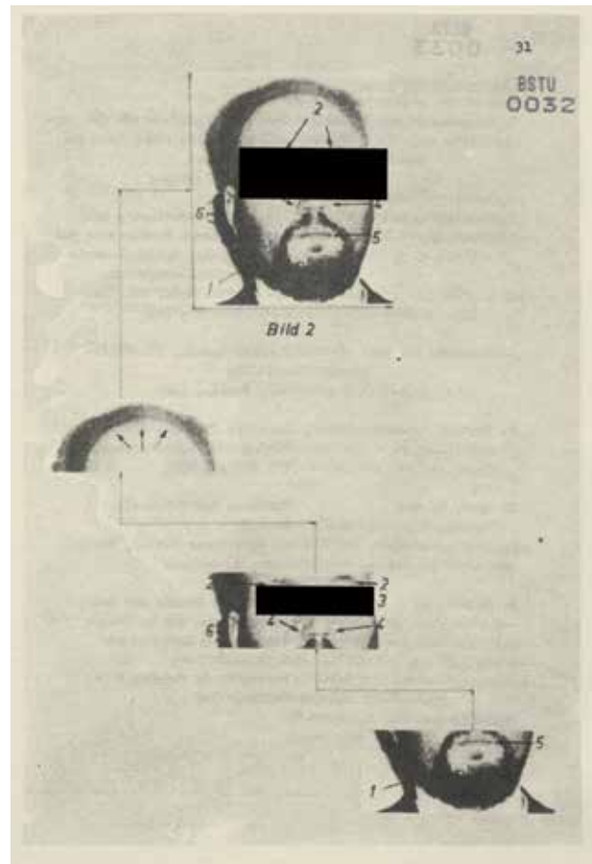
Experimente, bei denen die Augenbewegung beim Betrachten des Kopfes einer Person aufgezeichnet wurden, ergaben eine auffallende Übereinstimmung in der Konzentration des Betrachters auf den ausdruckstärksten Teil des Gesichts, die Merkmale mit hohem Identifizierungswert: Nase, Mund und Augen.

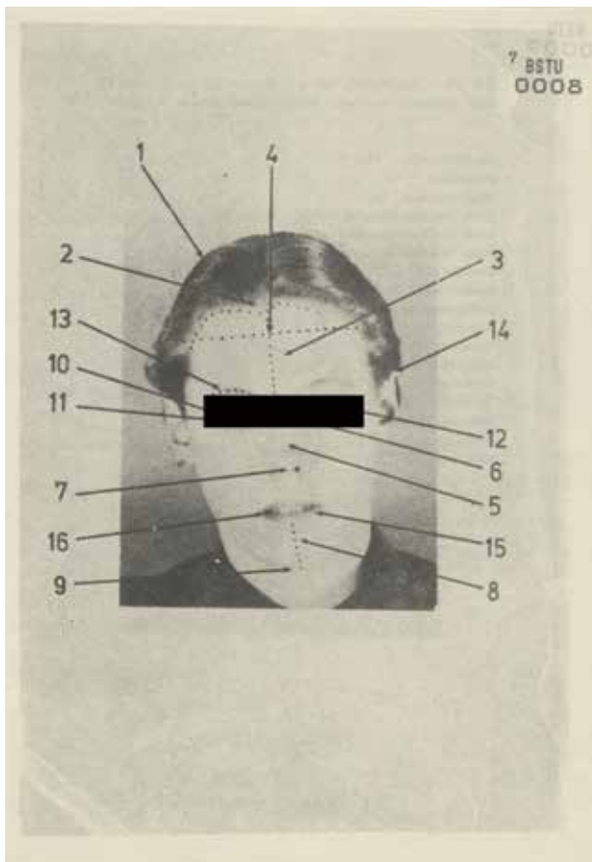
Im vorliegenden Beispiel wird diese Konzentration auf Nase, Mund und Augen besonders unterstrichen, da dieses Gesicht ansonsten nur wenig andere Merkmale mit einem hohen Identifizierungswert aufweist.

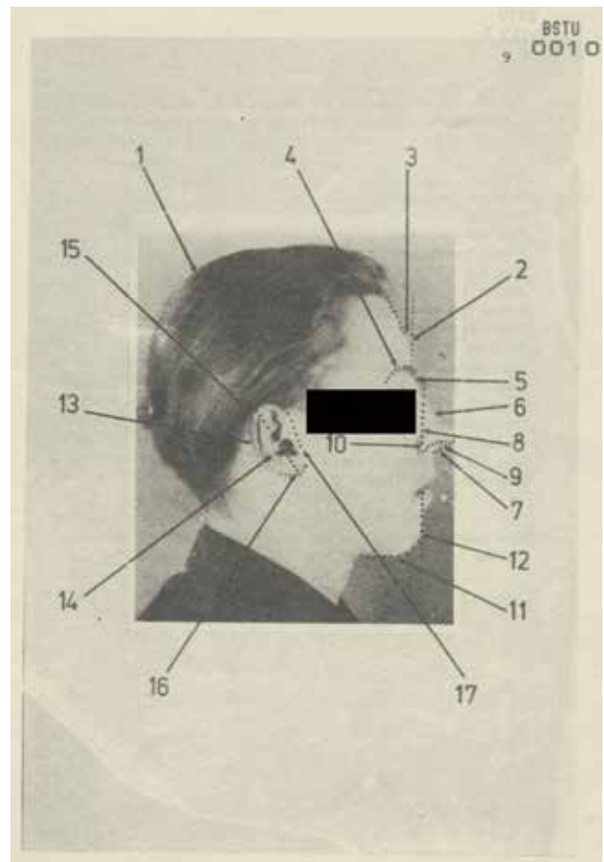
"The possibilities of criminal identification of people according to the features of their physical appearance based on photographic images of the face and their significance for operational work," from teaching materials prepared by Major Seifert, senior assistant at the Institute for Criminalistics, and Second Lieutenant Berndt, clerk for personal identification, Ministry for State Security of the GDR (Stasi) Law School, Potsdam, 1967, East Germany
Collection BstU (Stasi Archives)

[opposite] "Investigations to determine and evaluate the abilities of the identity checkers for recognizing relatively unchanging features of the exterior of people and the frequency of their occurrence," from training exercises for operational employees, Ministry for the State Security of the GDR (Stasi), Main Department of Observation and Investigation, n.d.
Collection BsTU (Stasi Archives), Berlin

Note the connection to the Alfred L. Yarbus image on p. 87.







Die männliche Person (Abb. 18) versuchte, mit dem Reisepaß der Rentnerin (Abb. 19) unter Ausnutzung einer bewußt hergestellten Ähnlichkeit (Abb. 17) einen ungesetzlichen Grenzübertritt durchzuführen.

Abb. 17 Rekonstruktionsaufnahme der jugendlichen männlichen Person, die den Reisepaß der Rentnerin mißbräuchlich benutzte

[this page and opposite] “Identifying people based on their physical appearance,” from study materials produced by Central Evaluation and Information Group of the Ministry for the State Security of the GDR (Stasi) for universities and technical schools, part 1, 1984–1987, East Germany Collection BstU (Stasi Archives)

The image opposite shows a person who attempted to cross the border in disguise.

Anlage 5 Beispiele für Versuche des ungesetzlichen Grenzübertritts unter Ausnutzung der Ähnlichkeit

VVS JHS o001 - 83/84

BStU 0175

Abb. 8 Rekonstruktionsaufnahme des eingereisten Bürgers der BRD

Abb. 9 Rekonstruktionsaufnahme des Bürgers der DDR

Unterschiedliche markante Merkmale		
Kopfform:	hoch, lang	oval
obere Augenlider:	bedeckt	unbedeckt
Ohrläppchen:	rechtwinklig, angewachsen	bogenförmig, freihängend

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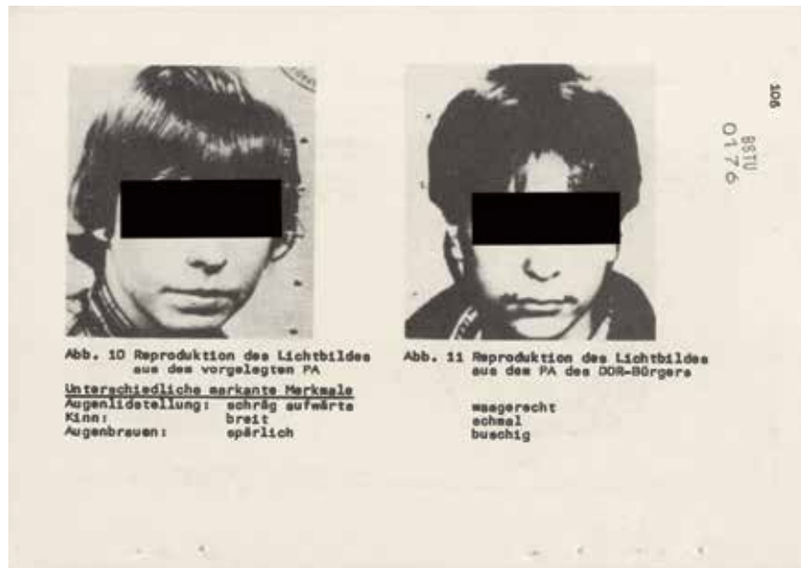

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BStU 0176

Abb. 10 Reproduktion des Lichtbildes aus des vorgelegten PA

Abb. 11 Reproduktion des Lichtbildes aus des PA des DDR-Bürgers

Unterschiedliche markante Merkmale		
Augenlidstellung:	schräg aufwärts	waagerecht
Kinn:	breit	schmal
Augenbrauen:	spärlich	buschig

VVS JHS o001 - 83/84

BStU 0181

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Abb. 18 Reproduktion des Lichtbildes der männlichen Person

Abb. 19 Reproduktion des Lichtbildes aus des Reisepaß der Rentnerin

[this page and opposite] Ministry for State Security of the GDR (Stasi) training materials for operational employees including exercises in personal description, n.d., East Germany Collection BstU (Stasi Archives)

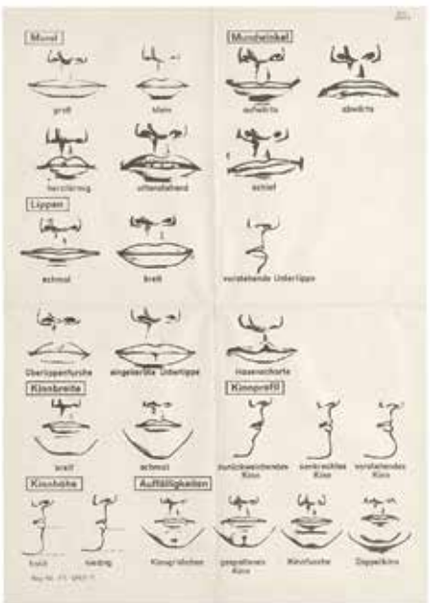


Abbildung 16
niedriger Schädel

Abbildung 17
hoher Schädel

Abbildung 18
Spitzkopf

Abbildung 19
eiförmiger Kopf

Abbildung 2o
flacher Hinterkopf

Abbildung 21
gewölbter Hinterkopf

Abbildung 22
Hinterkopfwulst

[this page and opposite] Pages from Interior Ministry of the GDR identification manual, 1970, East Germany
Collection Marieke Drost

15. Die weibliche Frisur

15.1. Kurzhaarfrisuren
1 jugendliche Frisur, strähnenartig in die Stirn frisiert
2 Stirnquerscheitel mit Pony
3 Stirnwelle mit Stirnfransen

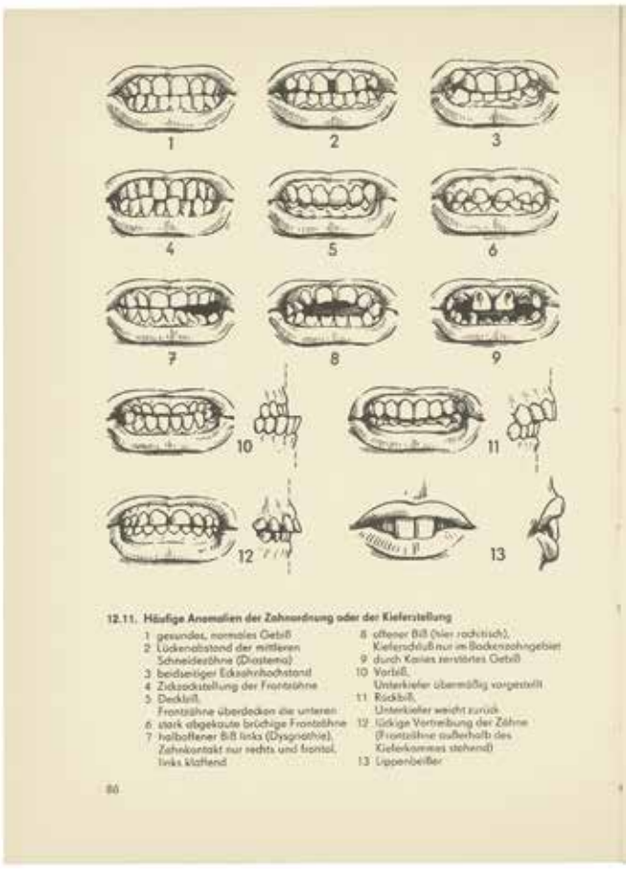
15.2. Mittellange Frisuren
4 schlichte Mädchenfrisur
5 Pagenkopf
6 Lockenkranz
7 Pudel- oder Mödi-Frisur
8 Rundfrisur
9 an der Schläfenpartie leicht auslaufend, Seitenhaar kurz geschnitten, zum Hinterkopf hin ansteigend kleiner Scheitel
10 in offenen Locken zur Wange hin fließender kurzer seitlicher Scheitel
11 vom kleinen Scheitel in halben Wellenbogen zum Hinterkopf ansteigend, in die Stirn spitz auslaufend

96

15.3. Langhaarfrisuren
12 langes Haar mit Mittelscheitel
13 langes Haar mit Pony
14 Pferdeschwanz
15 großer Knoten
16 einfacher Dutt
17 moderne Knotenform

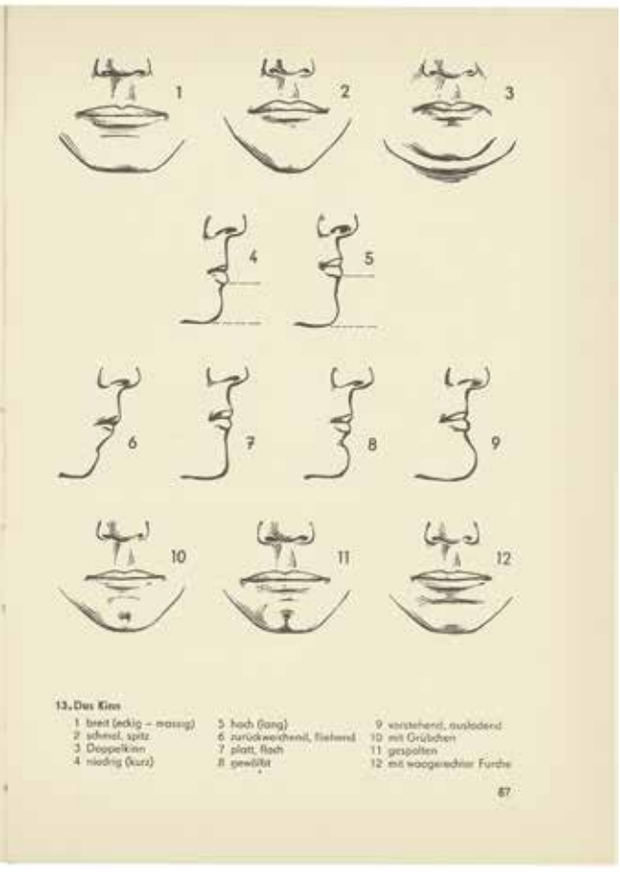
15.4. Kinderfrisuren
18 Zopffrisur
19 Schillerlocken
20 Hahnekamm

97



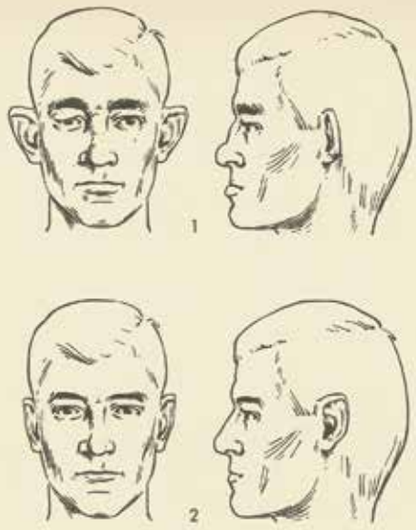
12.11. Häufige Anomalien der Zahnordnung oder der Kieferstellung
1 gesundes, normales Gebiß
2 Lückenabstand der mittleren Schneidezähne (Diastema)
3 beiderseitiger Eckzahnhochstand
4 Zwischenstellung der Frontzähne
5 Deckbiß, Frontzähne überdecken die unteren
6 stark abgekaute brüchige Frontzähne
7 halboffener Biß links (Dysgnathie), Zahnkontakt nur rechts und frontal, links klaffend
8 offener Biß (hier rachitisch), Kieferschluß nur im Backenzahngebiet
9 durch Karies zerstörtes Gebiß
10 Vorbiß, Unterkiefer übermäßig vorgestellt
11 Rückbiß, Unterkiefer weicht zurück
12 lückige Vorneigung der Zähne (Frontzähne außerhalb des Kieferkammes stehend)
13 Lippenbeißer

86



13. Das Kinn
1 breit (eckig – massig)
2 schmal, spitz
3 Doppelkinn
4 niedrig (kurz)
5 hoch (lang)
6 zurückweichend, fliehend
7 platt, flach
8 gewölbt
9 vorstehend, auslaufend
10 mit Grübchen
11 gespalten
12 mit waagerechter Furche

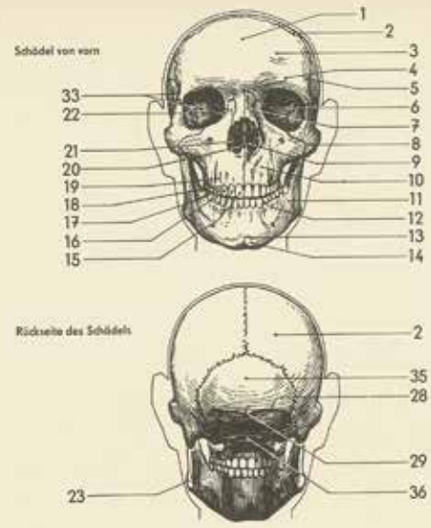
87



5.3. Die Wirkung einer kosmetischen Operation

Die Abbildungen zu 1 zeigen das Gesicht vor und zu 2 nach der kosmetischen Operation. Die Eindellung der Nase wurde beseitigt und der Nasenspitzenknorpel verkleinert. Die abstehenden Ohrmuscheln erhielten eine anliegende Form, ein Augenlid wurde angehoben, die Augenbrauen verschmälert, die vorstehende Unterlippe gestrafft.

35

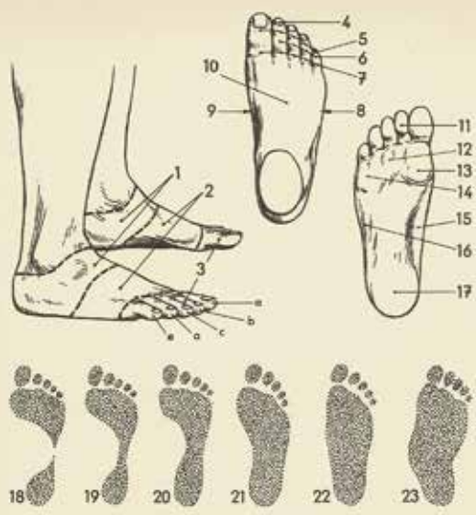


6. Der Kopf

6.1. Das Schädelskelett von vorn und die Rückseite des Schädels

1 Stirnbein
2 Schettelbein
3 Stirnhöcker
4 Augenbrauenwulst
5 Schläfenkante
6 Augenhöhle
7 Nasenbein
8 Jochbein
9 Nasenhöhle
10 Oberkiefer
11 Unterkiefer
12 Hühnerteil der Zähne
13 Kinnhöcker
14 Kinnecke
15 Schneidezähne
16 Eckzahn
17 Backenzahn
18 Mahlzähne
19 Zahnhülsenfortsatz
20 Pflugscharbein
21 unteres Muschelbein
22 Tränenbein
23 Unterkieferwinkel
28 obere Nackenlinie
29 Hinterhauptshöcker
33 Keilbein
35 Hinterhauptbein
36 Hinterhauptloch

39



20. Der Fuß

20.1. Einteilung

1 Fußwurzel
2 Mittelfuß
3 Zehen
a 1. Zehe (große)
b 2. Zehe
c 3. Zehe
d 4. Zehe
e 5. Zehe (kleine)

20.2. Draufsicht

4 Zehennagel
5 Endgliedreihe
6 Mittelgliedreihe
7 Grundgliedreihe
8 äußerer Fußrand
9 innerer Fußrand
10 Fußrücken

20.3. Fußsohle

11 Zehenunterseite (Lauffläche)
12 Mittelfußköpfchen
13 Großzehballen
14 Kleinzehballen
15 inneres Längsgewölbe
16 äußeres Längsgewölbe
17 Ferse

20.4. Fußsohlenabdruckbilder

18 hohes Gewölbe (Hohlfuß)
19 mittleres Gewölbe
20 niedriges Gewölbe
21 flaches Gewölbe (Senkfuß)
22 Plattfuß
23 Knickplattfuß

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20.5. Anomalien des Fußes

1 Sandalenlücke
2 eingerollter Großzehnagel und Mißwuchs der anderen Zehen
3 Senkfuß
4 Knickfuß
5 Spreizfuß mit Hammerzehe
6 Frostballen (Hallux valgus)
7 hochgradiger Hallux valgus mit übergeschlagener Großzehe
8 Krallenzehen
9a Plattfuß, Draufsicht
9b Plattfuß, Seitenansicht
10 Hammerzehenplattfuß
11 Ballenfuß (Ballenhohlfuß)
12 Klauenhohlfuß
13a leichter Hackenfuß
13b schwerer Hackenfuß
14 Spaltfuß
15a Klumpfuß, Sohle
15b Klumpfuß, Rücken
16a leichter Spitzfuß
16b schwerer Spitzfuß

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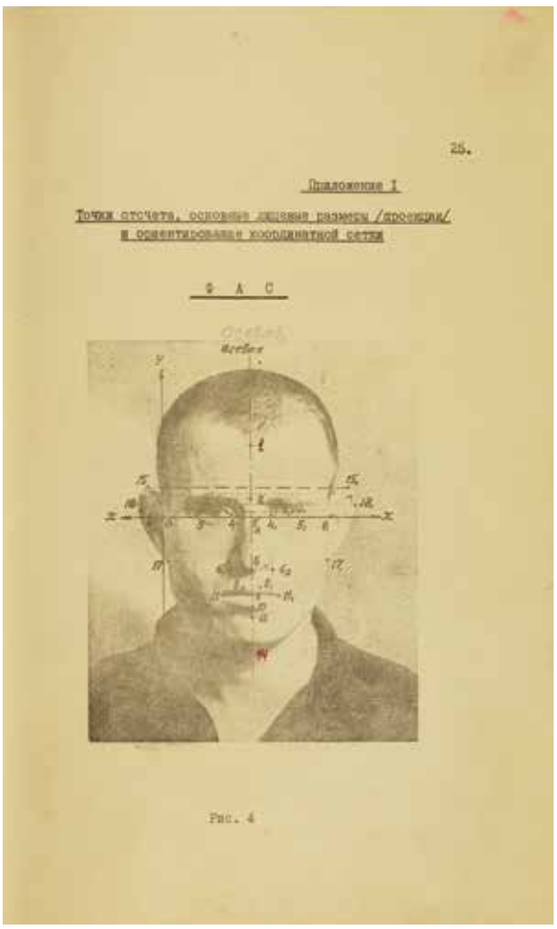
[top] Personal identification training materials produced by the Highest Red Banning School of the Committee of State Security under the Council of Ministers of the USSR, 1974, Soviet Union Collection Lithuanian Special Archives

[bottom] Personal identification training materials produced by the State Security Committee under the Council of Ministers of the USSR, 1962, Soviet Union Collection Lithuanian Special Archives


25.

Приложение 1

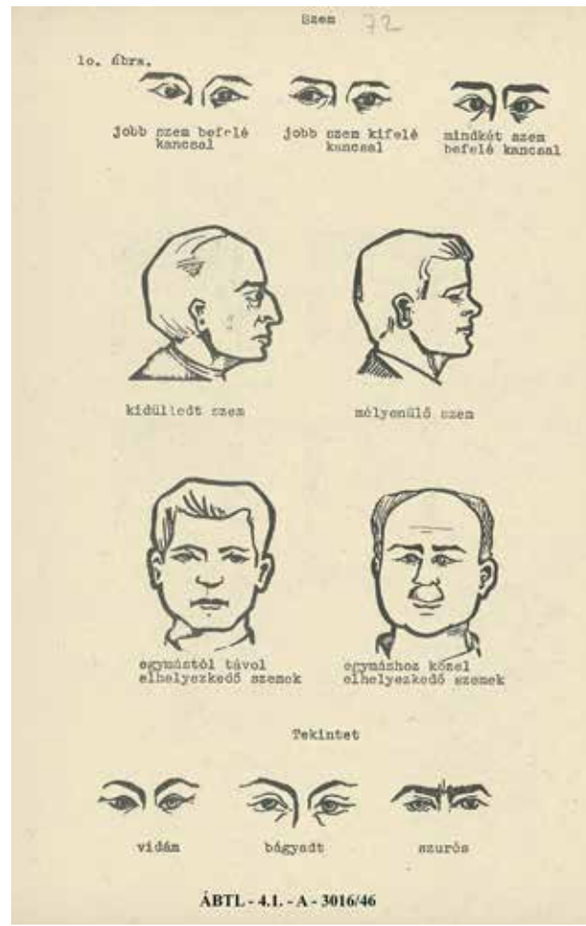
Точки отсчета, основные линейные размеры /проекции/ и ориентирование координатной сетки

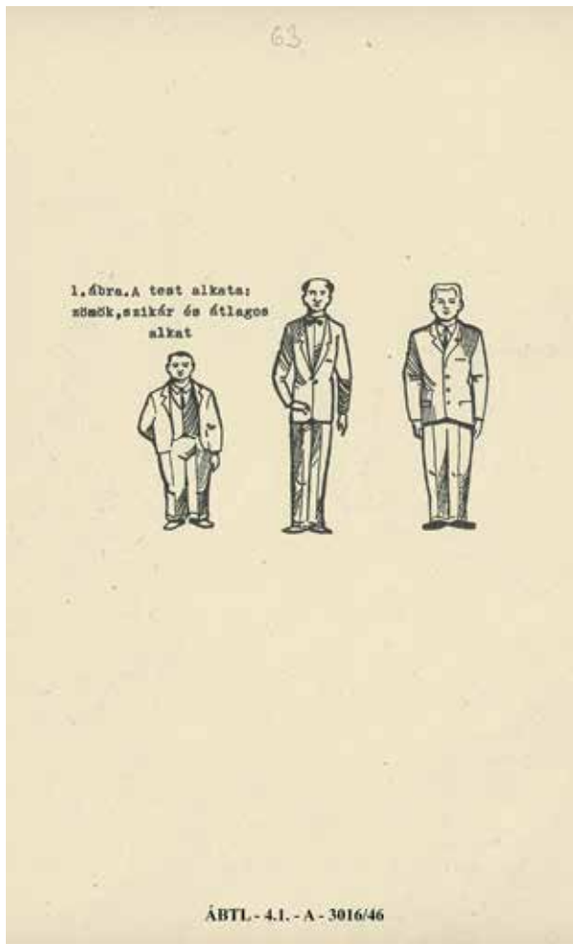
Рис. 4

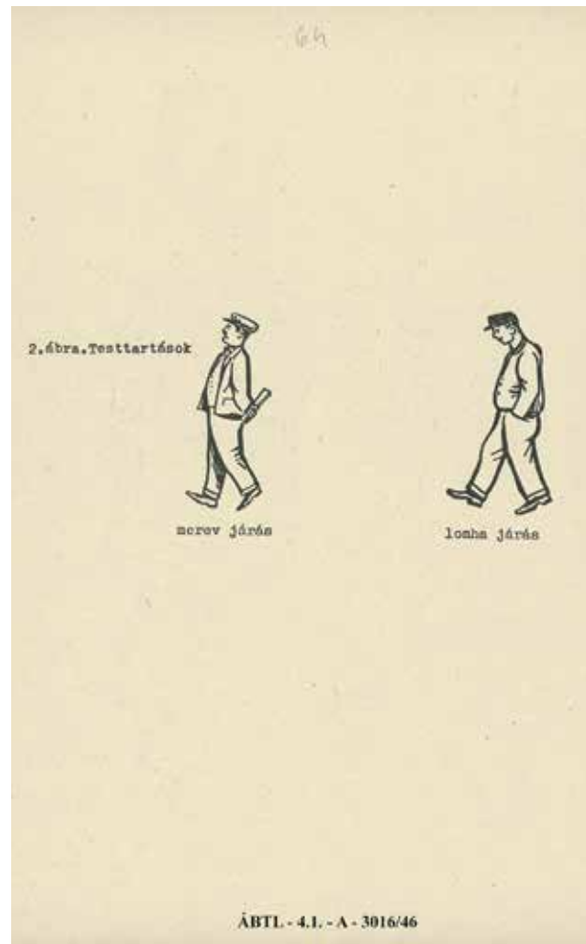

Рис.23. Линия 5-5$_I$ располагается выше линии 0-0$_I$ на I,0 клетку, т.е. на 2,0 клетки ниже исходного положения (3,0 кл.), - голова наклонена вперед на 10,0°

Рис.24. Линия 5-5$_I$ располагается выше линии 0-0$_I$ на 4,5 клетки, т.е. на I,5 клетки выше исходного положения (3,0 кл.), - голова отклонена назад на 7,5°

Pages from “A Methodological Guide to Identifying Imperialist Spies and Their Agents” illustrating eyes (squinting, bulging, distance between), noses (straight, broken, wavy), body shapes (stocky, lean, average), and postures, distributed by study and training group of the Ministry of the Interior, State Protection Authority, 1966, Hungary Historical Archives of the Hungarian State Security

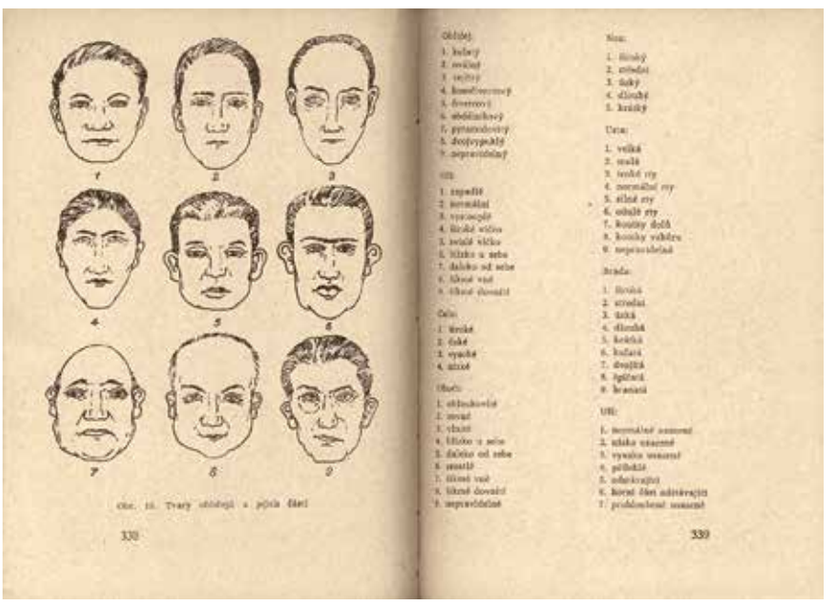


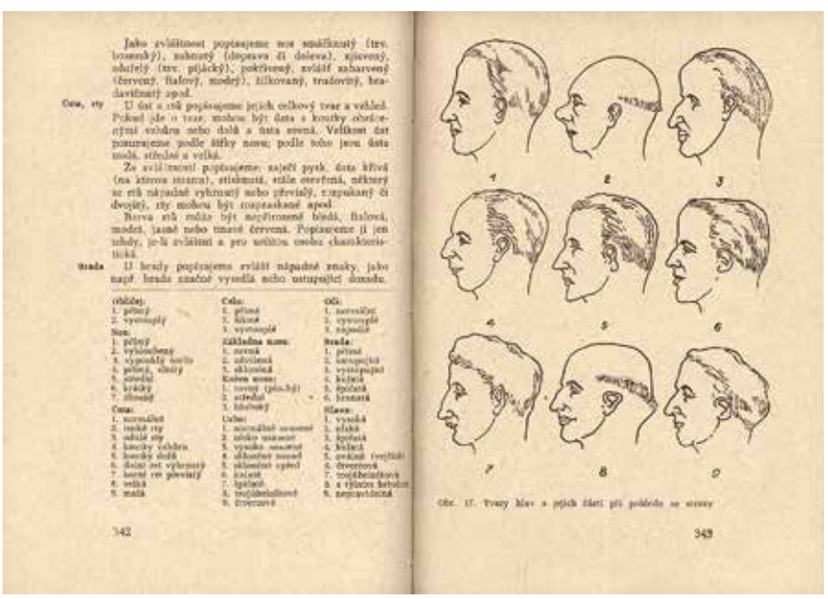




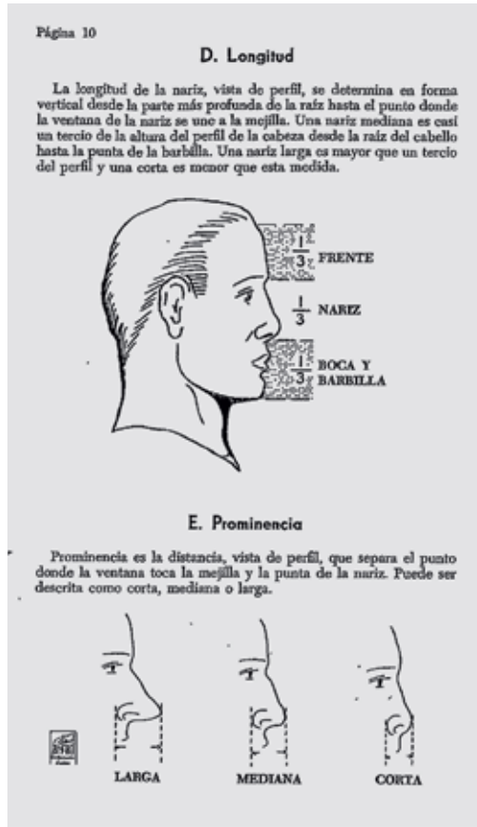
[right] Photographic comparison of faces using a millimeter grid and basic anthropometric data, angular measurement, and angular grid, from criminalistics materials published by the Ministry of the Interior, 1959, Czechoslovakia
Collection Czech Security Services Archive

[below] “Variation and peculiarities in faces,” “Variations in chins, noses, ears, eyes, head (shape),” and “Measurement points on the head,” from criminalistics materials published by the Ministry of the Interior, 1959, Czechoslovakia
Collection Czech Security Services Archive





Spanish-language police training manual of personal descriptions, translation of a brochure by the FBI for distribution by Academia Interamericana de Policia, n.d., United States Collection Archive of the U.S. Agency for International Development



Página 10

D. Longitud

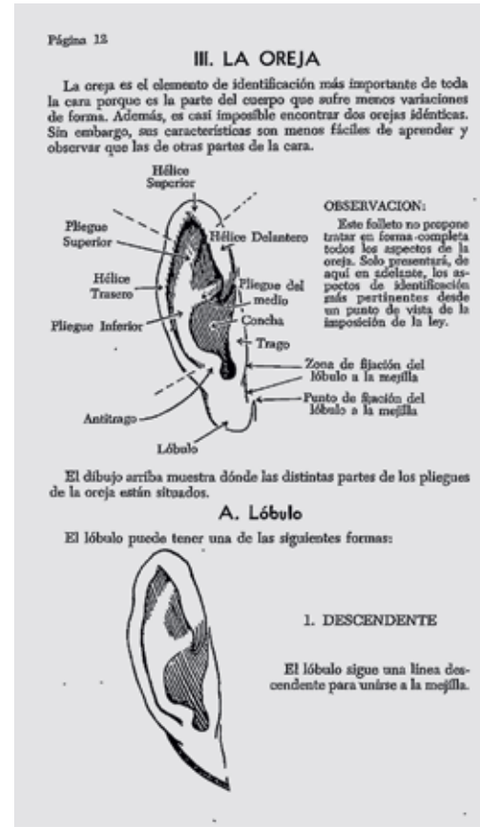
La longitud de la nariz, vista de perfil, se determina en forma vertical desde la parte más profunda de la raíz hasta el punto donde la ventana de la nariz se une a la mejilla. Una nariz mediana es casi un tercio de la altura del perfil de la cabeza desde la raíz del cabello hasta la punta de la barbilla. Una nariz larga es mayor que un tercio del perfil y una corta es menor que esta medida.

1/3 FRENTE
1/3 NARIZ
1/3 BOCA Y BARBILLA

E. Prominencia

Prominencia es la distancia, vista de perfil, que separa el punto donde la ventana toca la mejilla y la punta de la nariz. Puede ser descrita como corta, mediana o larga.

LARGA MEDIANA CORTA



Página 12

III. LA OREJA

La oreja es el elemento de identificación más importante de toda la cara porque es la parte del cuerpo que sufre menos variaciones de forma. Además, es casi imposible encontrar dos orejas idénticas. Sin embargo, sus características son menos fáciles de aprender y observar que las de otras partes de la cara.

Hélice Superior
Pliegue Superior
Hélice Delantero
Hélice Trasero
Pliegue del medio
Concha
Pliegue Inferior
Trago
Zona de fijación del lóbulo a la mejilla
Punto de fijación del lóbulo a la mejilla
Antítrago
Lóbulo

OBSERVACION:
Este folleto no propone tratar en forma completa todos los aspectos de la oreja. Solo presentará, de aquí en adelante, los aspectos de identificación más pertinentes desde un punto de vista de la imposición de la ley.

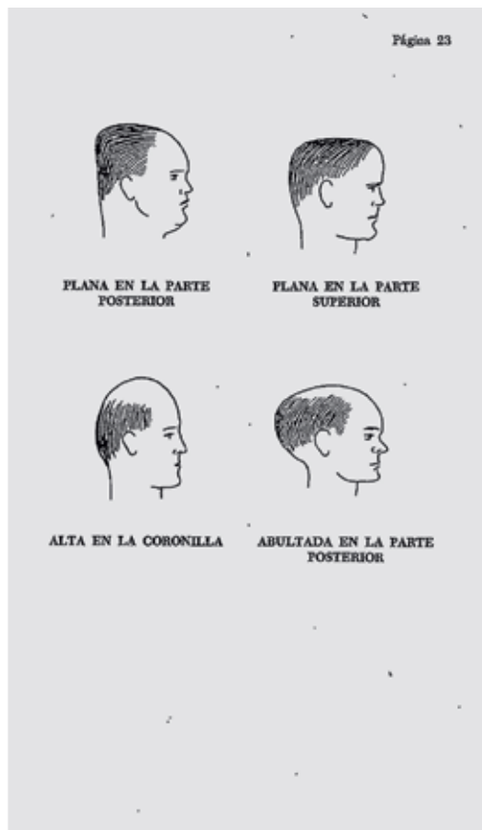
El dibujo arriba muestra dónde las distintas partes de los pliegues de la oreja están situados.

A. Lóbulo

El lóbulo puede tener una de las siguientes formas:

1. DESCENDENTE

El lóbulo sigue una línea descendente para unirse a la mejilla.



Página 23

PLANA EN LA PARTE POSTERIOR
PLANA EN LA PARTE SUPERIOR
ALTA EN LA CORONILLA
ABULTADA EN LA PARTE POSTERIOR

Página 21

D. Peculiaridades

Las peculiaridades pueden ser: papada o doble barbilla; barbilla hendida o con hoyuelo.

BARBILLA HENDIDA O CON HOYUELO
PAPADA O DOBLE BARBILLA

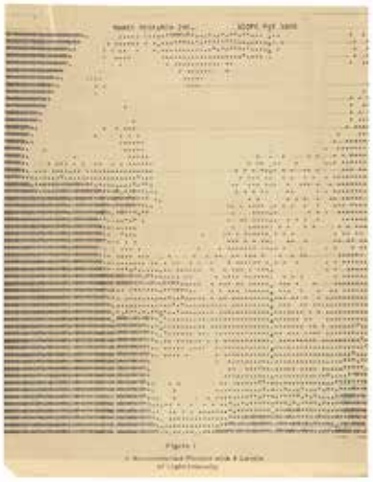
VII. LA CARA Y LA CABEZA

A. Forma de la Cara

La forma de la cara, vista de frente, es el resultado de la relación entre su altura y anchura.
Puede ser descrita como cuadrada, ancha, redonda, larga u ovalada (que es la forma usual).

REDONDA
CUADRADA

“Figure 1. Reconstructed Picture,” “Figure 4. Face with Markings,” and “Figure 5. Face to be Rotated,” from facial recognition project report submitted to King-Hurley Research Group by W. W. Bledsoe, Panoramic Research, Inc., United States, 1964
Woodrow “Woody” W. Bledsoe Papers, Dolph Briscoe Center for American History, The University of Texas at Austin



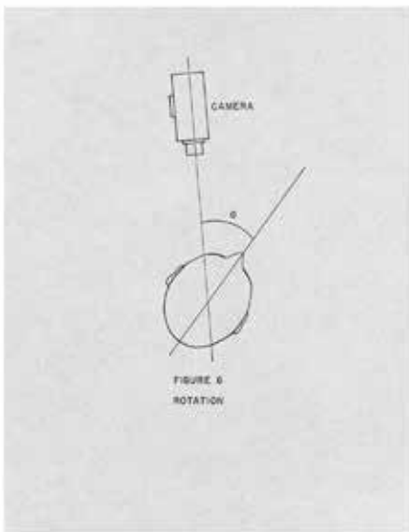
The first-known effort to develop facial recognition software was made in the early 1960s by Woodrow “Woody” Wilson Bledsoe, working with his colleagues Helen Chan Wolf and Charles Bisson at Panoramic Inc., a company founded by Bledsoe in 1960 in Palo Alto, California. The CIA, through a front company, sponsored Panoramic’s facial recognition project, which remained for the most part classified until 2014.

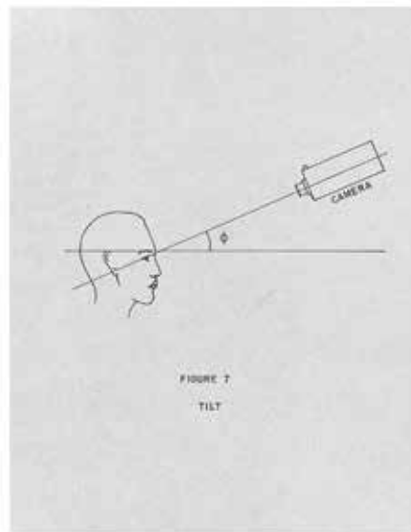
Bledsoe and his colleagues’ “human-machine” method for computer facial recognition required that operators manually mark features on a set of portrait photos, such as the pupils and the corners of the eyes, before measuring the distances between them. A computer then attempted to match the data of the coordinates and measurements with the original photographs. Bledsoe’s research reports reference nineteenth-century researchers such as the Italian criminologist Cesare Lombroso and the French police officer and anthropometrist Alphonse Bertillon, as well as the identikit system developed by the Los Angeles Police Department in the 1940s and ’50s. Remarkably, Bledsoe also cites several Russian research publications on facial recognition.

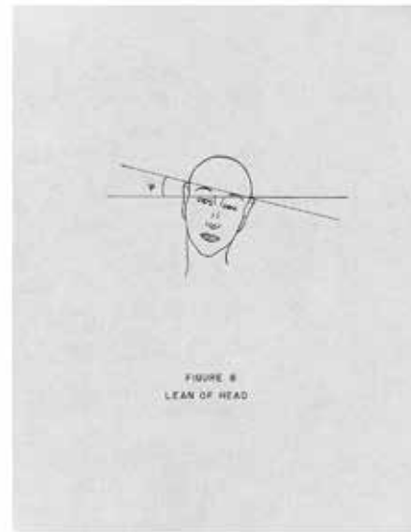
Bledsoe’s team confronted many of the technical challenges that computer facial recognition researchers continue to address today. For instance, how can the software address variations in the angle and rotation of the face, or different facial expressions and changes due to aging? While Bledsoe seems to have used mostly photographs of white males, he pitched a research project to the U.S. Advanced Research Projects Agency (later renamed Defense Advance Research Project Agency, DARPA) to use facial characteristics to identify a person’s racial background. It is not known if that project was funded.

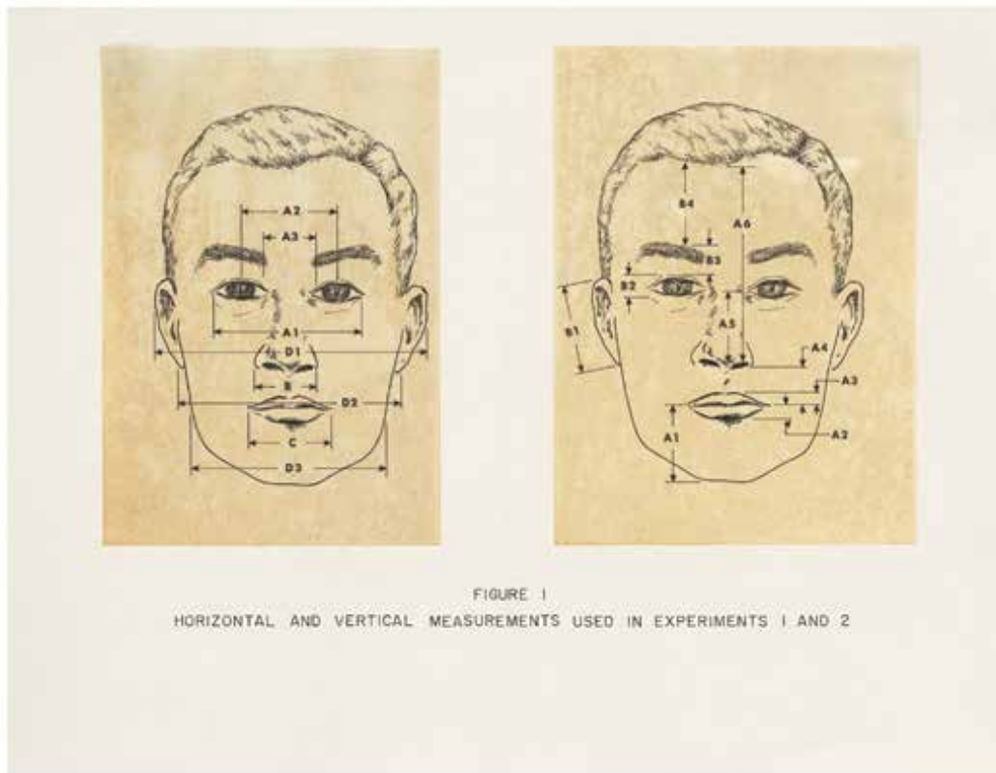
In 1966, Bledsoe left Panoramic for a job at the University of Texas at Austin to study automated reasoning, a branch of artificial intelligence. However, he returned to his work on computer facial recognition several times. In 1967, together with Peter Hart of the Stanford Research Institute, he created a system to help law enforcement agencies search through mugshot databases (the research went unpublished). In the following years, computerized facial recognition efforts continued in the U.S. at research centers including Bell Labs and Stanford University. In Japan in 1973, Takeo Kanade built what was probably the first fully automated facial recognition system.

"Horizontal and Vertical Measurements Used in Experiments 1 and 2," "ROTATION," "TILT," and "LEAN OF HEAD," from research materials by Helen Chan and W. W. Bledsoe, 1949–1996, United States
Woodrow "Woody" W. Bledsoe Papers, Dolph Briscoe Center for American History, The University of Texas at Austin

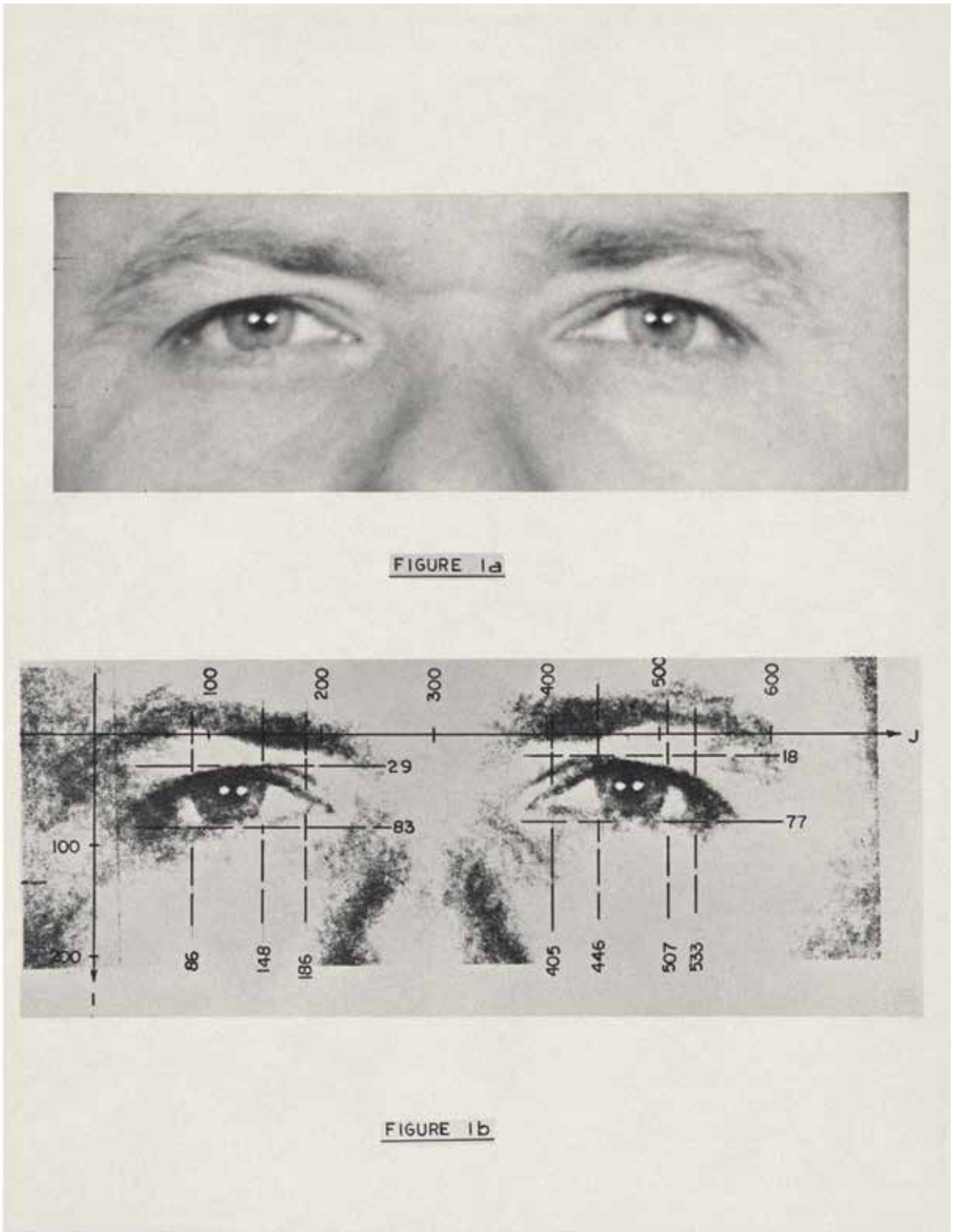








[this page and opposite] “Locating Features,”
from research materials by W. W. Bledsoe,
1949–1996, United States
Woodrow “Woody” W. Bledsoe Papers,
Dolph Briscoe Center for American History,
The University of Texas at Austin



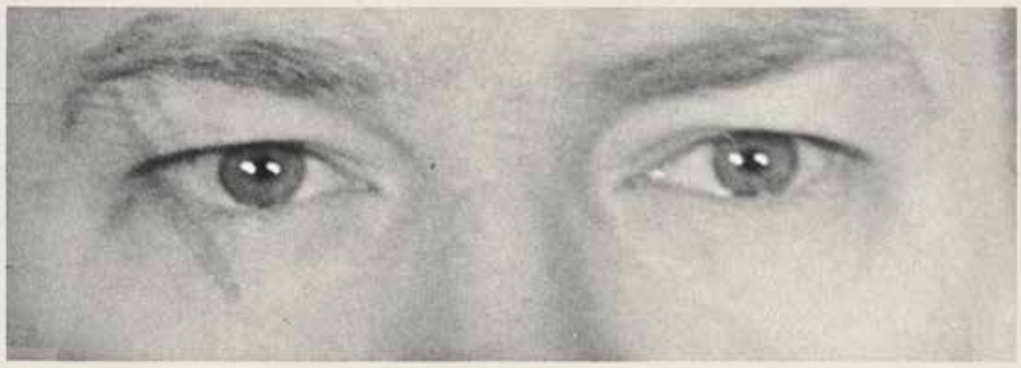


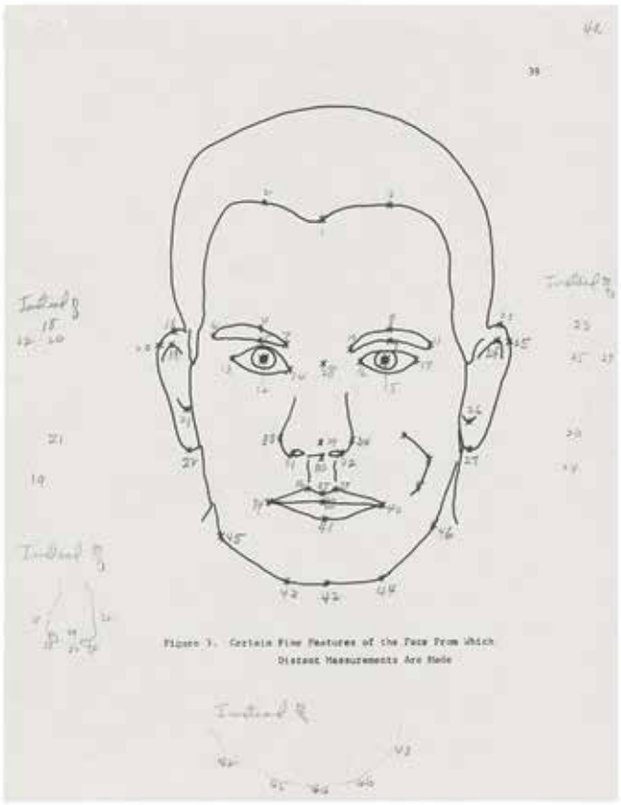
FIGURE 5

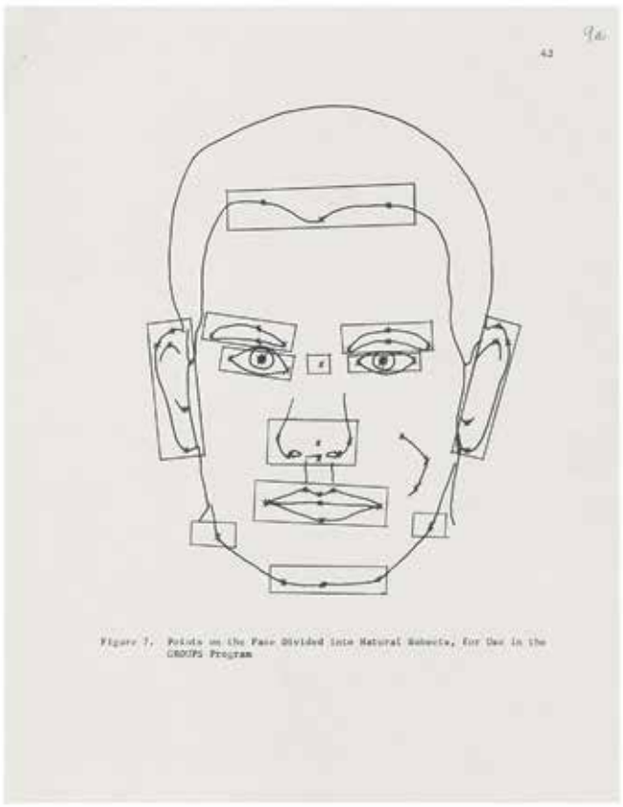
FIGURE 6

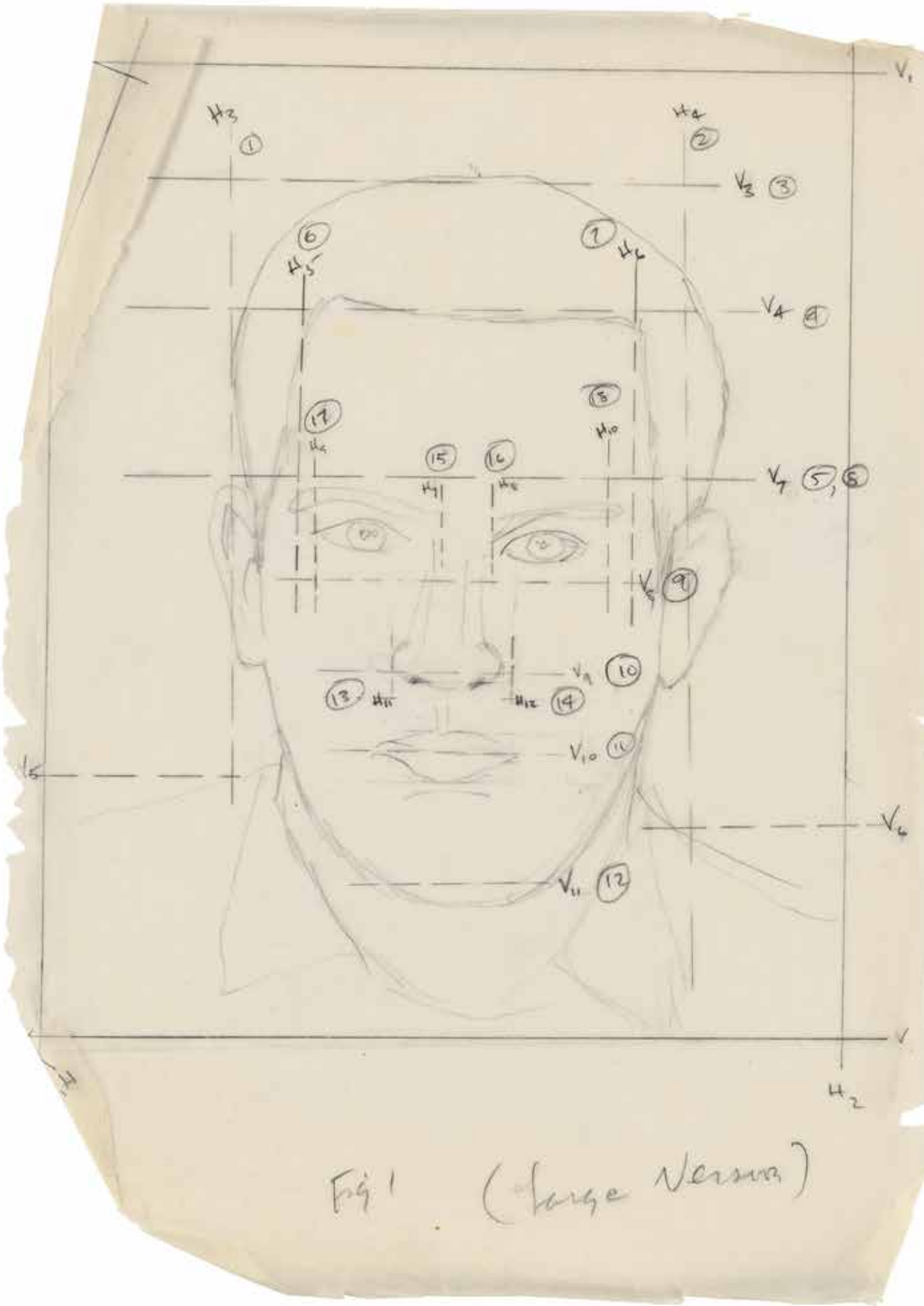
FIGURE 7

“Figure 3. Certain Fine Features from which Distance Measurements are Made, Man-Machine Facial Recognition,” “Figure 7. Points on the Face Divided into Natural Subsets, for Use in the GROUPS Program, Man-Machine Facial Recognition,” “Figure 9. An Idealized Head Showing the Coordinate System Used in this Study, Man-Machine Facial Recognition,” and “Figure 10. The Parameters … for Rotation Tilt and Lean, Man-Machine Facial Recognition,” from report by W. W. Bledsoe, Panoramic Research, Inc., 1949–1996, United States Woodrow “Woody” W. Bledsoe Papers, Dolph Briscoe Center for American History, The University of Texas at Austin

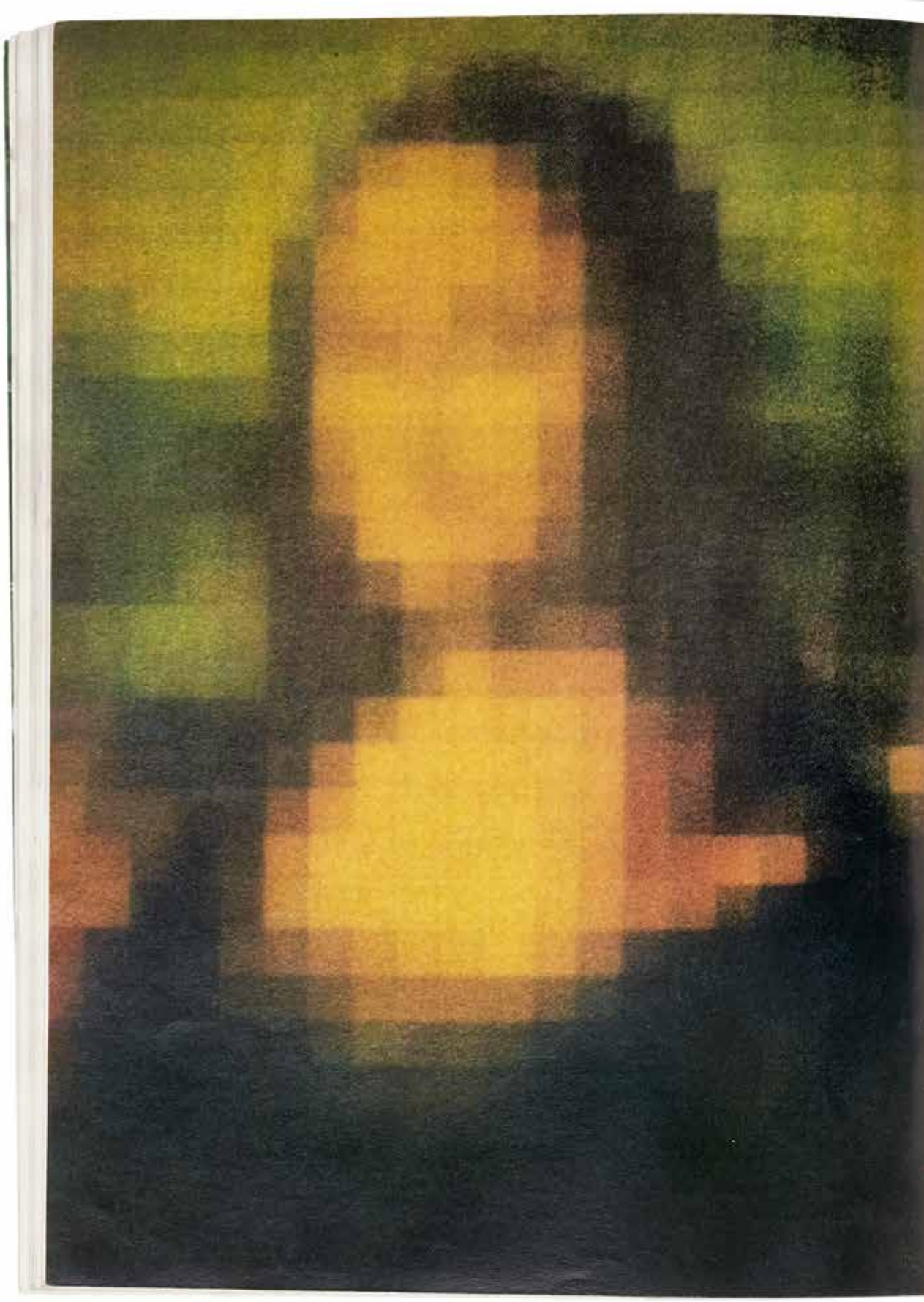
[opposite] “Locating Features,” from research materials by W. W. Bledsoe, 1949–1996, United States Woodrow “Woody” W. Bledsoe Papers, Dolph Briscoe Center for American History, The University of Texas at Austin






V1
H3
H4
V3
V4
V7
V8
V9
V10
V11
V6
H2
Fig 1 (Large Version)

“The Recognition of Faces” by Leon Harmon, *Scientific American*, 1973, United States
Collection Wende Museum



THE RECOGNITION OF FACES

One of the subtler tasks of perception can be investigated experimentally by asking how much information is required for recognition and what information is the most important

by Leon D. Harmon

Faces, like fingerprints and snowflakes, come in virtually infinite variety. There is little chance of encountering two so similar they cannot be distinguished, even on casual inspection. Unlike fingerprints and snowflakes, however, faces can be recognized as well as discriminated. It is possible not only to tell one from another but also to pick one from a large population and absolutely identify it, to perceive it as something previously known, just as in reading one not only can tell that an *A* is different from a *B* but also can identify and name each letter.

Why are faces so readily recognized? In seeking the answer to this question my colleagues and I posed several related but more modest questions that we believed would be more amenable to experimental investigation: How can a face be formally described? Given a verbal description, how well can a particular face be identified? To what extent is recognition impaired when the image of a face is blurred or otherwise degraded? What kinds of image degradation most seriously affect recognition? Can faces be classified and sorted as numerical data?

This inquiry was inspired by yet another question: How can a computer be made to recognize a human face? This question remains unanswered, because pattern recognition by computer is still too crude to achieve automatic identification of objects as complex as faces. Machines can recognize print and script, craters and clouds, fingerprints and pieces of jigsaw puzzles; the recognition of human faces, however, is a much subtler task.

Even though machine recognition of faces has not been attained, the investigation of how it might be done has led to a number of related issues that in themselves are worthwhile (and tractable) areas of research. Several new approaches to problems in the manipulation of visual data have emerged. I shall recount here four series of experiments that were directed to an understanding of recognition. The first is concerned with how artists reconstruct faces from descriptions and how closely the resulting portraits resemble the person described. Next I shall comment on a set of experiments in which faces were identified from pictures that had limited information content. The third approach examines the recognition of faces from formal numerical descriptions. Finally, I shall describe a system in which man and computer interact to identify faces more efficiently than either could alone.

If one could devise an objective formulation of the criteria used by an artist in drawing a portrait, a set of properties useful for automatic recognition might emerge. One kind of art that we thought might provide useful information is the sketches drawn by police artists (called face-reconstruction artists) from descriptions provided by witnesses. (Another promising possibility is the caricature, but we have not yet studied it.)

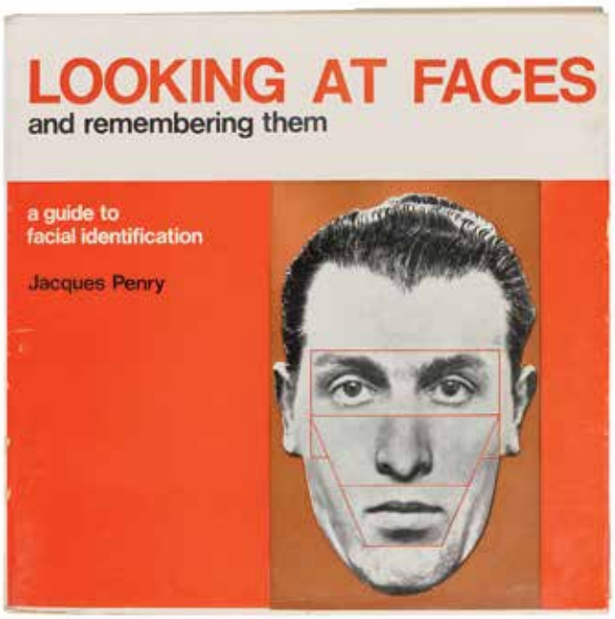
Verbal descriptions are rarely used in the drawing of police sketches. Few observers, unless they are specially trained, can give satisfactory clues to appearance in words. Most can point to features similar to those they remember, however, and that is how the reconstruction artist usually begins. Our initial experiments were intended to test the effectiveness of this procedure and to gain some preliminary notions of what features are considered important in describing or recognizing a face.

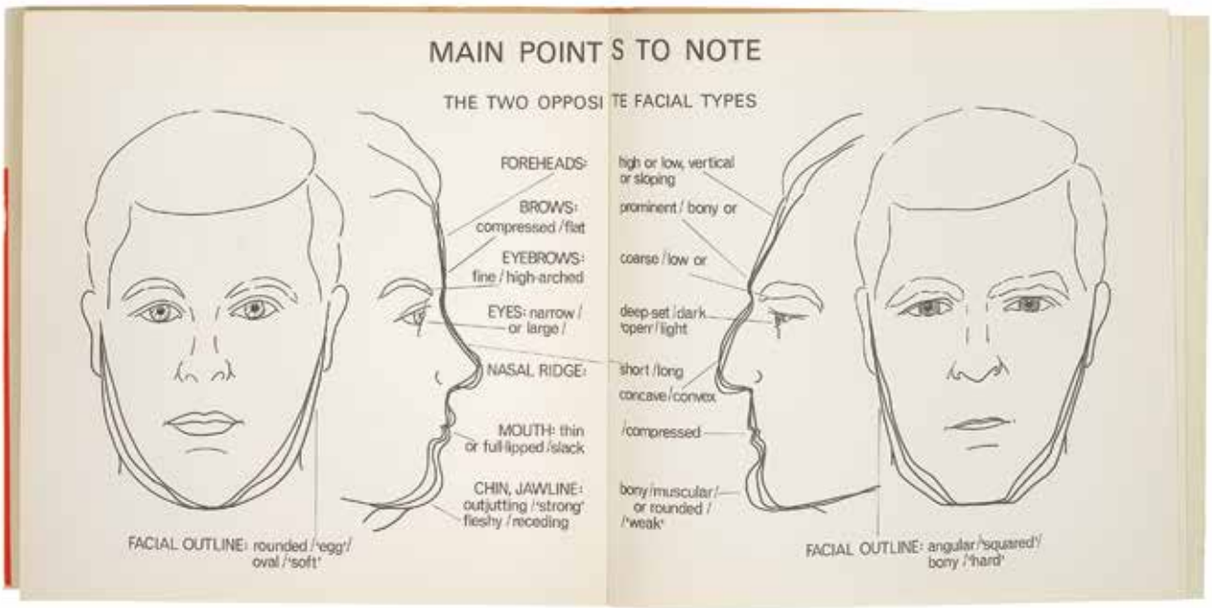
Frontal-view photographs were shown to an experienced artist, who compiled a written description of each face; the description included references to facial features in a catalogue of faces made up of photographs of various head shapes, eye spacings, lip thicknesses and so on, organized by feature type. Thus a large part of the description consisted of "pointing to" similar features on other portraits. The completed description was given to another artist, whose task was to reconstruct the face from the written description [*see illustration on next page*].

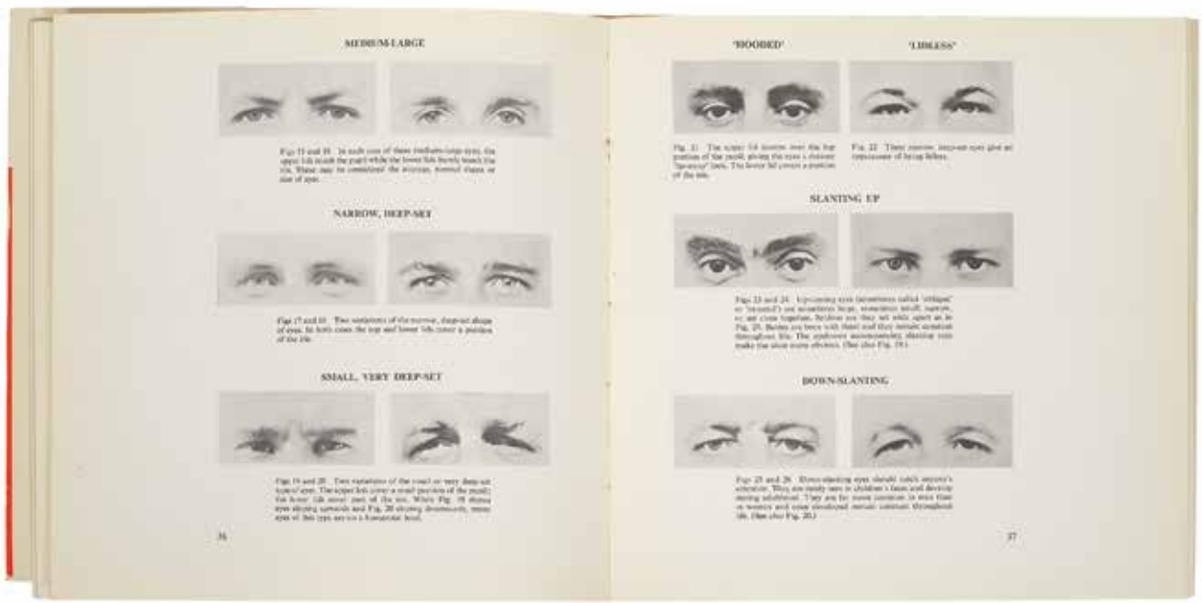
The first attempt, although obviously resembling the original photograph, differed from it in the depiction of important features and proportions. When limited feedback was allowed, however, there was rapid improvement. The describing artist, with the initial sketch in hand, provided simple verbal corrections, such as "The hair should be bushier at the temples"; with this information the reconstructing artist was able to draw a much more accurate likeness. Finally, to find the limit of improvement, that is, to discover just how faithful a portrait could be drawn, the reconstructing artist was given the photograph to work from. Under those conditions he was able to produce a strikingly realistic representation. Some sketches, in fact, were judged to look more like the per-

LEONARDO'S "MONA LISA," rendered as a "block portrait," consists of 560 squares, each of which is uniform in color and brightness. The transformation of the familiar painting was accomplished in the same way as that of the portrait of George Washington on the cover of this issue of SCIENTIFIC AMERICAN. Recognition can be enhanced by rapidly moving the page, by squinting at the image or by viewing it from a distance of 10 feet or more.

Looking at Faces and Remembering Them: A Guide to Facial Recognition
by Jacques Penry, published by Elek, 1971, United Kingdom
Collection Wende Museum







Soviet Committee for State Security (KGB) identikit, n.d., Soviet Union
Collection Wende Museum

Developed in the 1940s and ’50s by Hugh McDonald and Harry Rogers, both officers in the Los Angeles Police Department (LAPD), the identikit is a system to create, store, and exchange composite portraits. It comprises a set of transparencies with images of eyes, noses, eyebrows, and other facial features. Each categorized feature has a code number; an assembled facial composite can be described as a set of codes. Easily transmitted, the codes were used to search databases of mugshots after the LAPD began applying the identikit in 1959.

Similar kits were developed in Europe around the same period, for instance IRK-II (Poland) and Photo-FIT (U.K). Identikit was sold to British police forces in the early 1960s, though after initial enthusiasm cultural differences hampered its use. After complaints about the absence of images of bowler hats, berets, and the hairstyles of subcultures, for instance, the Home Office concluded the kit was time-consuming and of limited effectiveness. The Photo-FIT system was developed by Jacques Penry and adopted by British police forces as of 1970.

IRK-II drawing and composition identifier,
1970s–1980s, Poland
Collection Runde Ecke, Leipzig; Gedenkstätte
Museum in der “Runden Ecke” mit
dem Museum im Stasi-Bunker, Leipzig


F, L, Nr
B, P, Ns
H, M
IRKII
H M
A NA
B P NB
FL NF
MINIATURE FLUORESCENT TUBE
PREDOM

Police identikit, produced by
Smith & Wesson, 1960, United States
Collection Wende Museum

Physogs card game, ca. 1940,
United Kingdom
Collection Ken Gonzales-Day

The game of Physogs requires that players construct faces with physical characteristics that reveal certain personality traits. Each player holds four cards detailing facial elements and takes turns drawing from a central pile; they can discard cards into another pile as they attempt to make their cards' details match with a descriptive text card. The first player who thinks their face matches the character description shouts "Physogs!"—like in Bingo. Based on the facial recognition research of British sociologist Jacques Penry, Physogs contributed to the popularization of the pseudoscience of physiognomy.

Jeu des Photos-Robot board game (women), designed by Roger Dambron, 1950, France
Collection Wende Museum

In 1950, the French inventor Roger Dambron created a game for children, calling it Photos-Robot. He cut out facial features from photographs of 2,000 people in his hometown in the north of France. The goal of the game was to recreate existing faces by assembling parts (mouth, nose, and eyes) as if building a robot. When Dambron presented his game at a competition in 1952, he won the bronze medal. Moreover, on this occasion Jean Baylot, the Paris prefect of police, detected the potential of Dambron's technique for police work. French police began applying it as of 1953, renaming it Portrait-Robot.

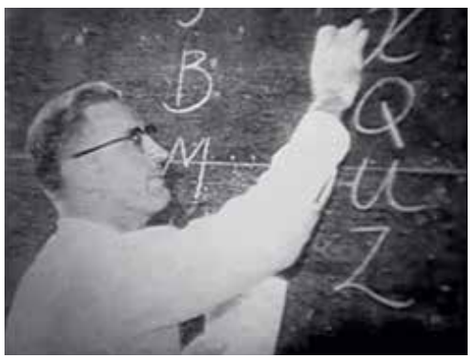
Jeu des Photos-Robot board game (men),
designed by Roger Dambron, 1950, France
Collection Wende Museum

[right] Stills from “Technical Assistance Program, Vietnam,” film produced by Michigan State University, 1950–1959, United States
Collection Vietnam Group Archive, Michigan State University Archives and Historical Collections

[bottom] Vietnamese participants at Michigan State University training program in the operation and maintenance of audiovisual equipment, 1950–1959, United States
Collection Vietnam Group Archive, Michigan State University Archives and Historical Collections

[opposite] Unidentified figure with photographic apparatus (electrical light, power unit, camera case), 1950–1959, South Vietnam
Collection Vietnam Group Archive, Michigan State University Archives and Historical Collections

Professors Edward Weidner and Ralph Smuckler of the Michigan State University Group discuss technical assistance programs worldwide and in Vietnam specifically, including the education and police training at the National Institute of Administration (NIA) in Saigon.

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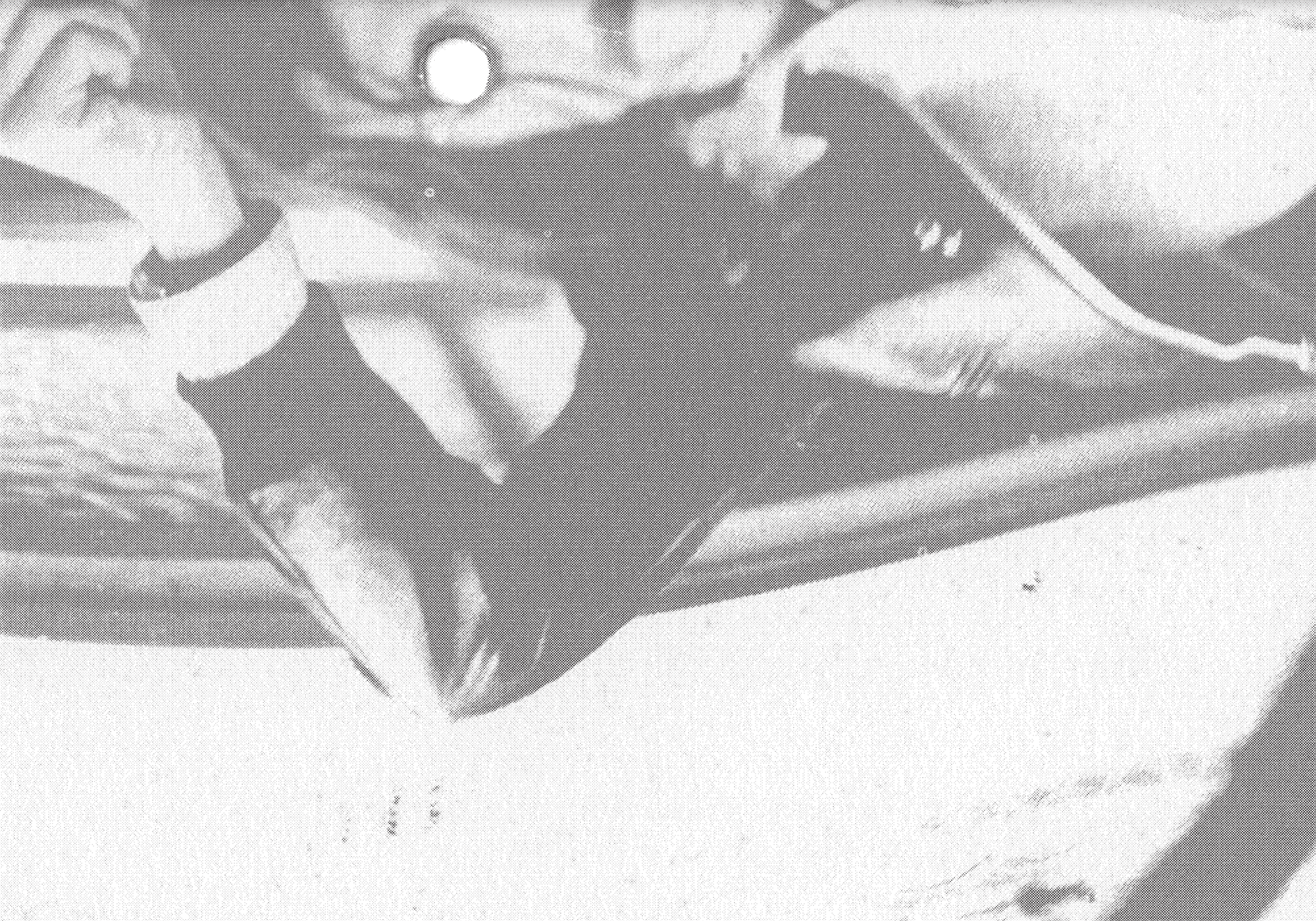
ART

COUNTER SURVEILLANCE



EVADE

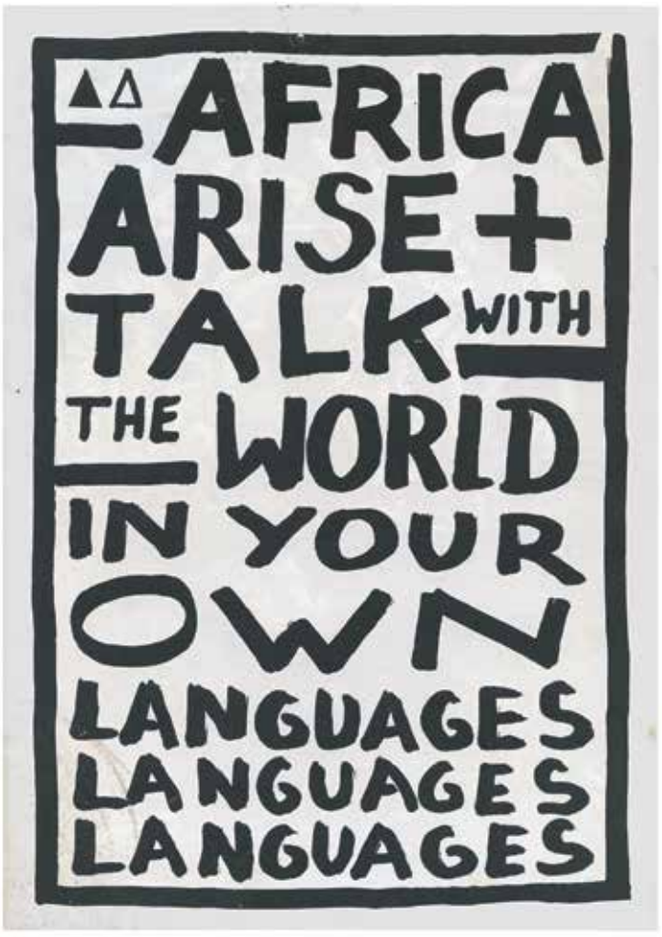
[this page, opposite, and following spread] All images courtesy of the Mail Art Archive of Ruth Wolf-Rehfeldt and Robert Rehfeldt, ChertLüdde

Anthro Art (Volker Hamann), *Africa Arise*, 1988, West Germany, booklet

MAIL ART

While contacts across the political divide of the Cold War were strictly regulated and controlled, people found creative ways to connect and evade scrutiny. Postal networks played a pivotal role in these attempts. Artists in the Eastern Bloc, inspired by the international Fluxus art movement that began in the 1960s, engaged in a global network of correspondence artists. In sending each other often whimsical and sometimes political messages, these artists formed an underground movement that managed to transcend borders and undermine censorship. Its artists held in common a desire to break down walls and constraints. Whether disruptively brash or critically ironic, Mail Art exposed society's double standards and paradoxes.

The Ruth Wolf-Rehfeldt and Robert Rehfeldt Mail Art Archive is a collection of the eponymous artists' correspondence sent between the 1970s and early '90s. The Rehfeldts were influential figures who lived in East Germany and communicated with artists worldwide. Their written exchanges reveal a focus on international solidarity movements in countries under military and dictatorial regimes and behind the Iron Curtain.



[top] Rod Summers, mail art to Robert Rehfeldt, 1980, United Kingdom, print with handwriting and stamp

[middle] Western Dakota Junk Co., Dada's Bicycle, Académie Neodada, mail art to Robert Rehfeldt, n.d., United States, print with handwriting and stamps

[bottom] Wolf Vostell, mail art to Robert Rehfeldt, 1973, West Germany, collage on print with handwriting

[top] Rolf Staeck, mail art to Robert Rehfeldt and Ruth Wolf-Rehfeldt, 1976, West Germany, print with handwriting

[middle] Edgardo Antonio Vigo, mail art to Robert Rehfeldt, 1975, Argentina, stamps and collage on postcard

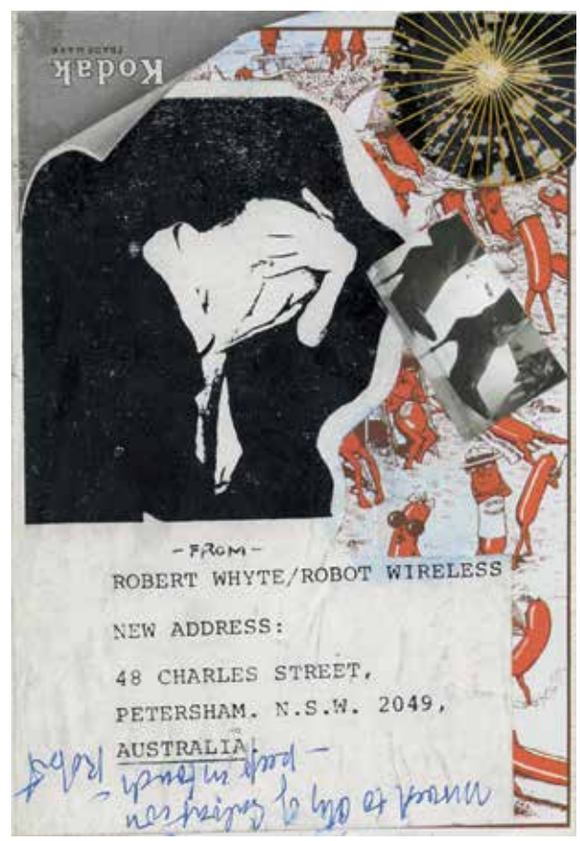
[bottom, left] Robert Rehfeldt and Horacia Zabala, mail art to Galeria Teatru Studio, Warsaw, 1975, East Germany and Argentina, drawing with stamps on postcard

[top, left] Miroljub Todorović, mail art to Robert Rehfeldt, n.d., Yugoslavia, print, handwriting, and stamp on postcard

[top, right] Gerd Scherm, mail art to Robert Rehfeldt, 1975, West Germany, stamps on a handwritten letter

[bottom] Robert (Robot Wireless) Whyte, mail art to Robert Rehfeldt, n.d., Australia, collage, print, and handwriting on postcard

[left] Paulo Bruscky and Robert Rehfeldt, mail art to Galeria Teatru Studio, Warsaw, 1975, Brazil and East Germany, drawing with stamps on postcard



[this page, opposite, and following spread]
All images Collection Wende Museum

Randy Cook, *WA7LXM to W4LQT*, 1977,
United States, printed matter

QSL CARDS

During the Cold War, shortwave radio offered a largely unregulated global network. Developed in the early 1900s, it revolutionized telecommunications due to its near-global range. Even as other radio technologies became more dominant, particularly the more reliable and high-fidelity AM and FM formats, shortwave's reach gave it lasting popularity among amateurs and people looking to avoid government surveillance. In order to connect with others, shortwave users established a date, time, and specific frequency that they mailed to each other on QSL cards. Named after the radiotelegraph Q-code abbreviation for "confirmation of receipt of transmission," QSL cards are typically the size of an ordinary postcard. They often display visual art.

[top] Radio Peking, *Always Follow Chairman Mao and Advance in the Teeth of Great Storms and Waves*, n.d., China, printed matter

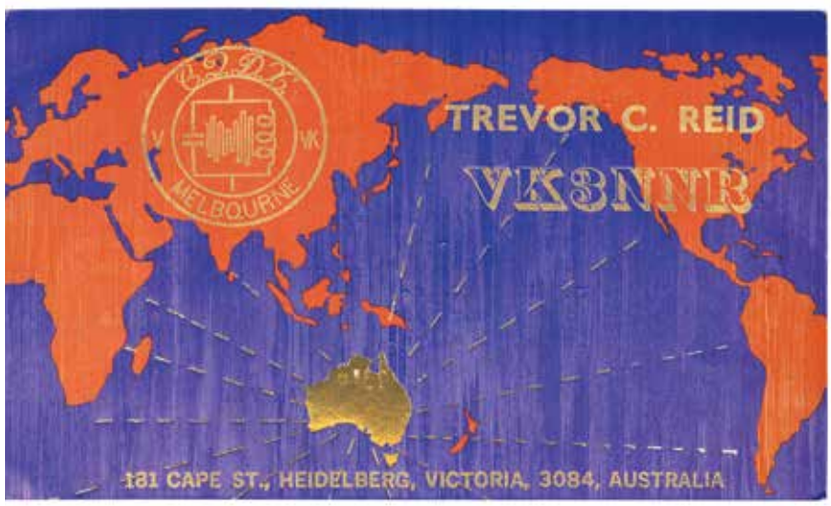
[middle] B. S. Paintal, *VU2BP to Radio W4DQH*, 1958, India, printed matter

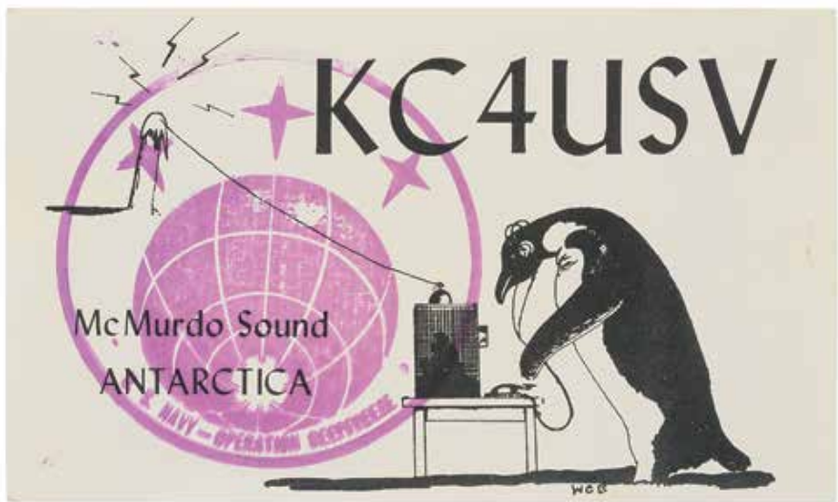
[bottom] Yoshio Arisaka, *JA1HQG to W8OYI*, 1967, Japan, printed matter

[top] UT5KKM, *UT5KKM to 5Z4KL*, 1970, Soviet Union, printed matter

[middle] Trevor C. Reid, *VK3NNR to WA4QLB*, 1978, Australia, printed matter

[bottom] KC4USV, *KC4USV to W7PX*, 1956, Antarctica, printed matter

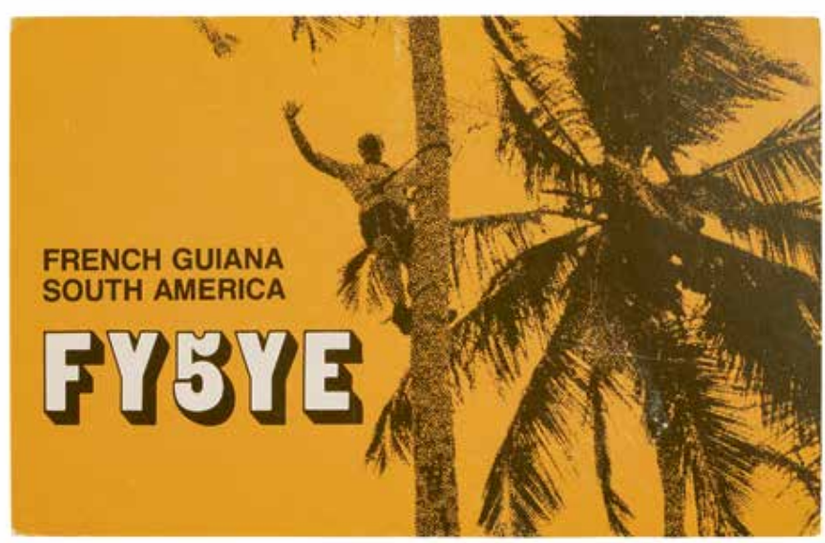




[top] Vasco Félix, *CR6MN to K9ECE*, 1969, Angola, printed matter

[middle] Serg, *GORKY to WZLR*, 1983, Soviet Union, printed matter

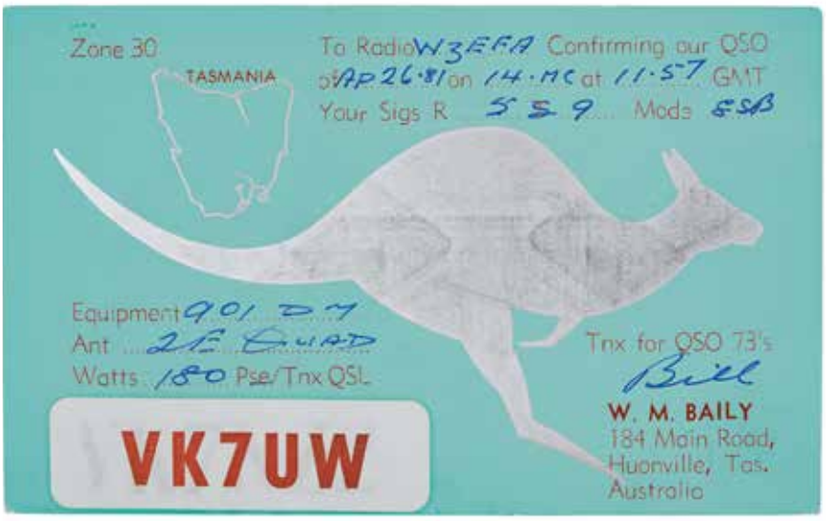
[bottom] Mario de Lepine, *FY5YE to K2KM*, 1988, French Guiana, printed matter



[top] W. M. Baily, *VK7UW to W3EFA*, 1981, Australia, printed matter

[middle] Serge Bukhonov, *UA9FDL to WSLMG*, 1973, Soviet Union, printed matter

[bottom] General Egyptian Cinema Broadcasting and Television Organization, *Message of Receipt to Hal Robie*, 1963, Egypt, printed matter



[top] Rádio Clube Português, *CSB2 to Roger Ahnstrom*, 1961, Portugal, printed matter

[middle] Paul F. W. Zwart, *PAoPFW to W804i*, 1967, Netherlands, printed matter

[bottom] SP2ZGV, *SP2ZGV to W1WEF*, 1990, Poland, printed matter

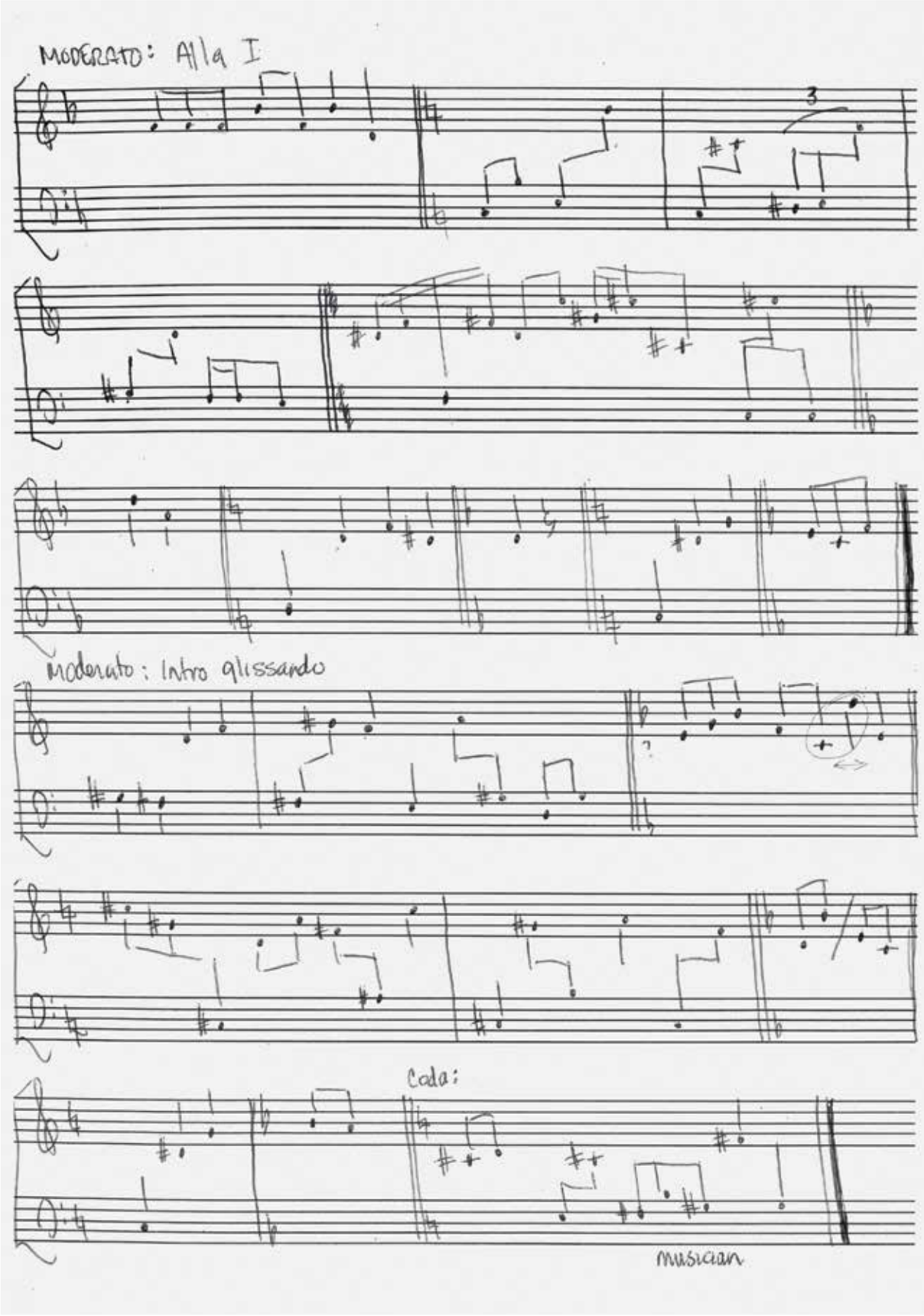
[opposite and following spread]
Decoded Sheet Music, 1985,
United States, ink on paper
Courtesy of the artist

MERRYL GOLDBERG

In 1985, the Soviet customs agents who inspected the bags of four American musicians found what one would expect: musical instruments, maintenance gear, and sheet music in notebooks. However, unbeknownst to the Soviet agents, the Boston Klezmer Conservatory Band had not come just to play music—they intended to find the dissident musicians of the Phantom Orchestra, so called because the group maintained near invisibility to avoid arrest. The Americans were Rosalie Gerut, Merryl Goldberg, Hankus Netsky, and Jeffrey Warschauer, and they carried the names and addresses of the orchestra's members—considered enemies of the state—encoded in handwritten sheet music. As Western musical notes only range from A to G, Goldberg also assigned letters to halftones and notations, building a larger vocabulary and lending greater verisimilitude to her compositions. The customs agents let them through.

Despite heavy surveillance during their travels, the Boston Klezmer Conservatory Band met the Phantom Orchestra one evening in Tbilisi. Phantom members included prominent refuseniks, Catholics, advocates for Georgian independence, and the poet Zviad Gamsakhurdia (then chairman of the Georgian Helsinki Group, later the first democratically elected president of Georgia.) After a night of talking and playing music, Goldberg musically encoded the dissident's stories of government repression, hoping to share them internationally.

As the Phantom Orchestra had expected, there were repercussions. The apartment where they met was searched; some members were beaten, some were jailed. The Americans were also arrested and deported shortly after the evening in Tbilisi. Despite more searches at the border, the true purpose of their trip remained unknown to the Soviet authorities until the band returned to the United States, where they made public the encoded stories as a renewed call to help refuseniks.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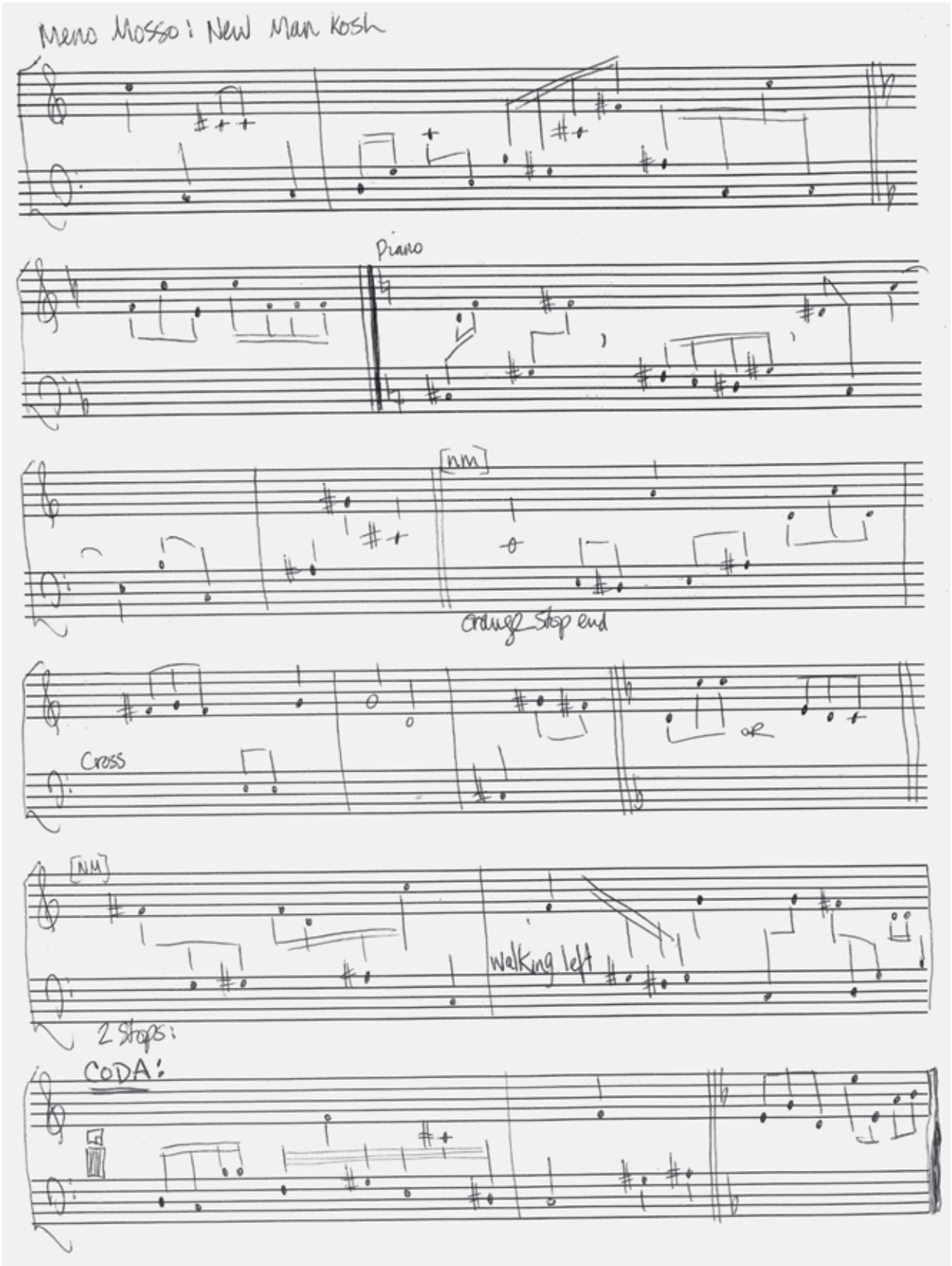
3
Moderato: Intro glissando
Coda:
musician


Meno Mosso: New Man Kosh
Piano
[nm]
orange stop end
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or
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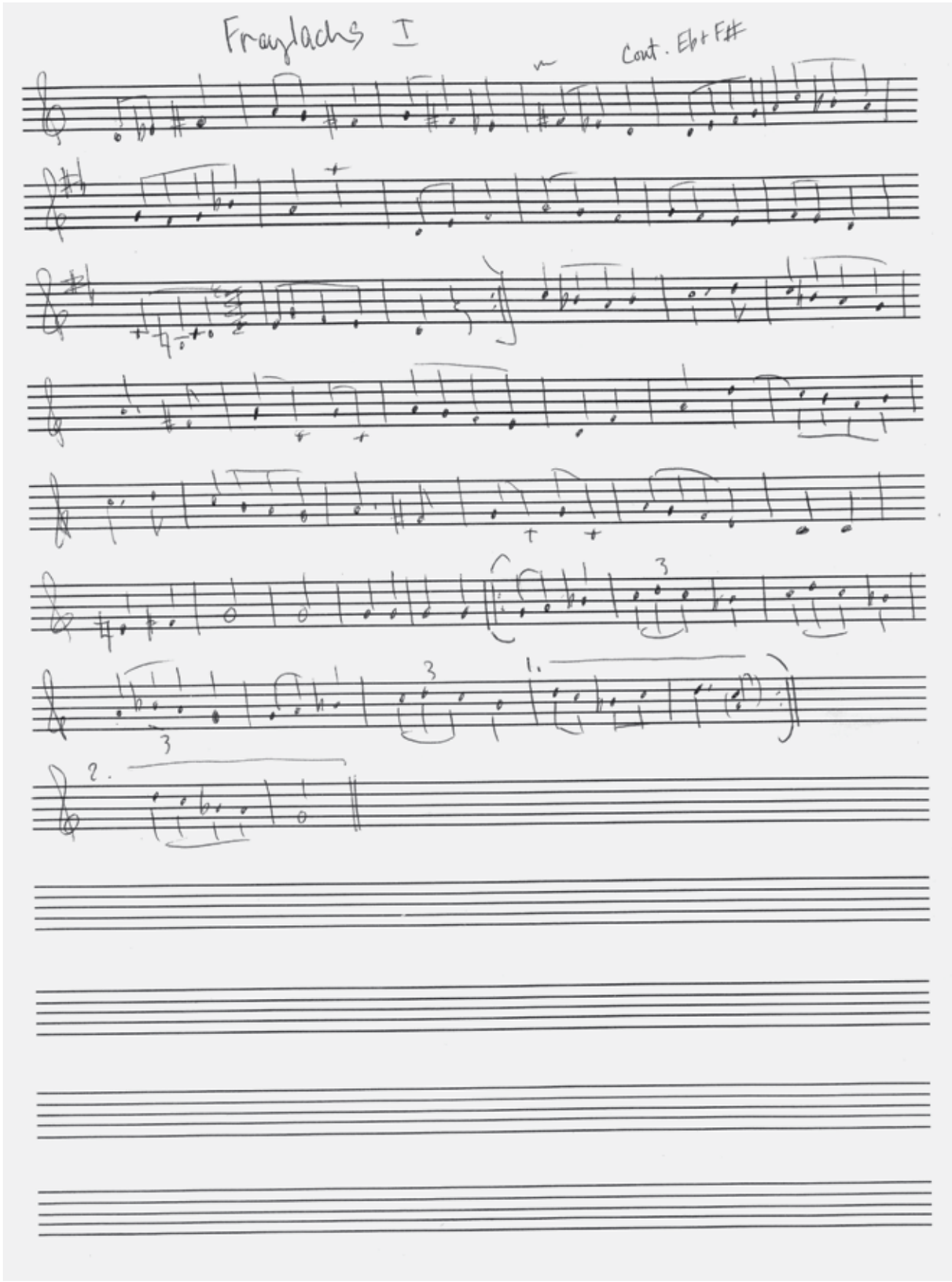
2 Stops:
CODA:


Frayfachs I
Cont. Eb+F#
3
1.
3
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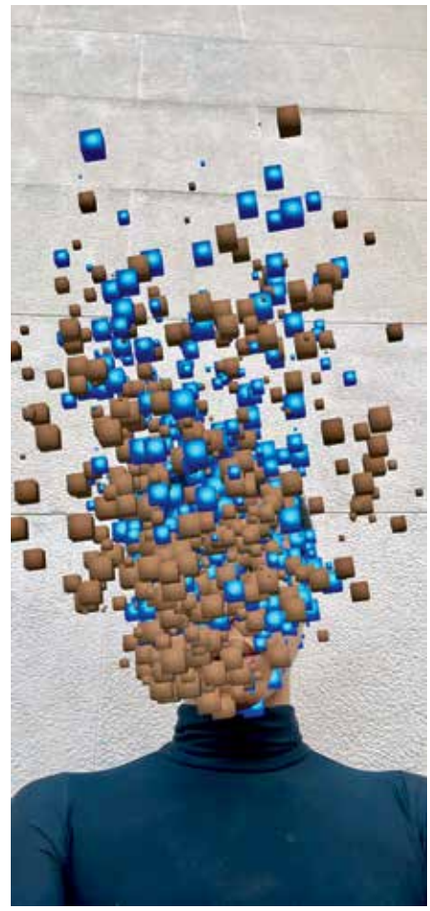
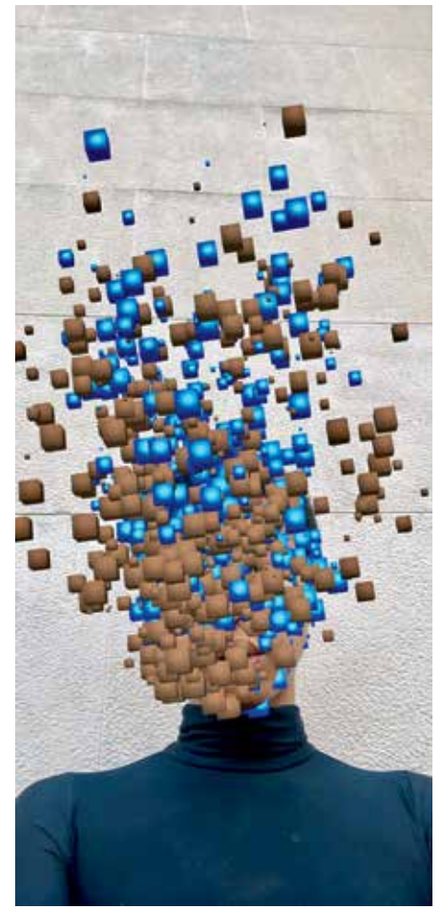
[opposite and following spread]
No Face Filter, 2020/2024, United Kingdom, Blender 3D animation and Meta Spark AR face-filter
Courtesy of the artist

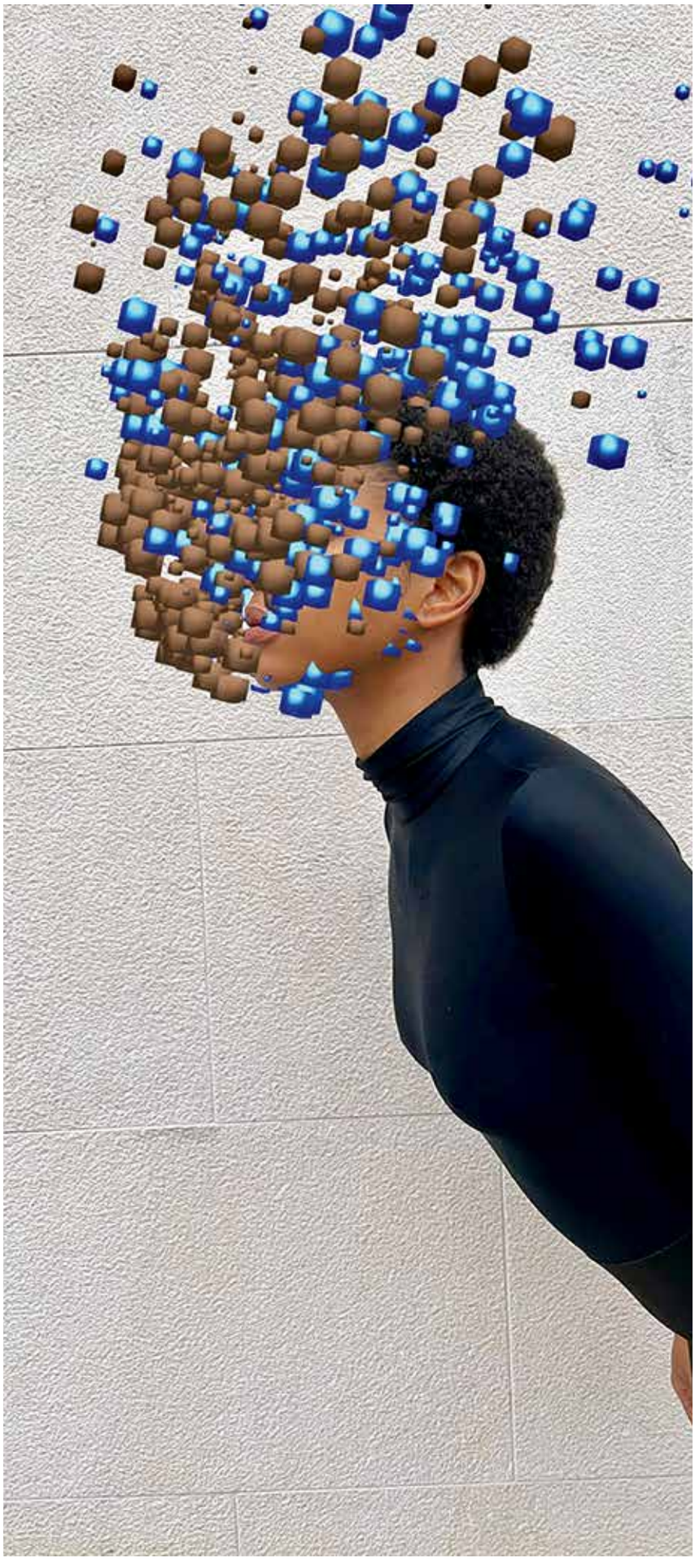
DAMARA INGLÊS

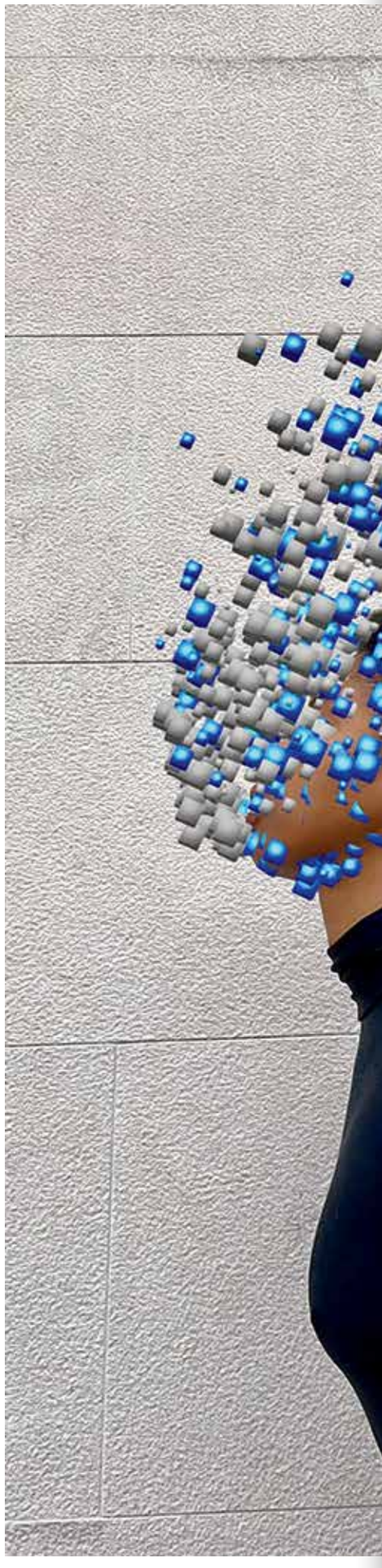
Technologies of surveillance are evolving to make anonymity a luxury few can afford. In response, Damara Inglês developed *No Face Filter* (2020/2024) with the aim of protecting individual identities during protests. Its application has the potential to stop surveillance by political actors looking to identify activists on social media posts and target them, whether legally or by endangering their livelihoods.

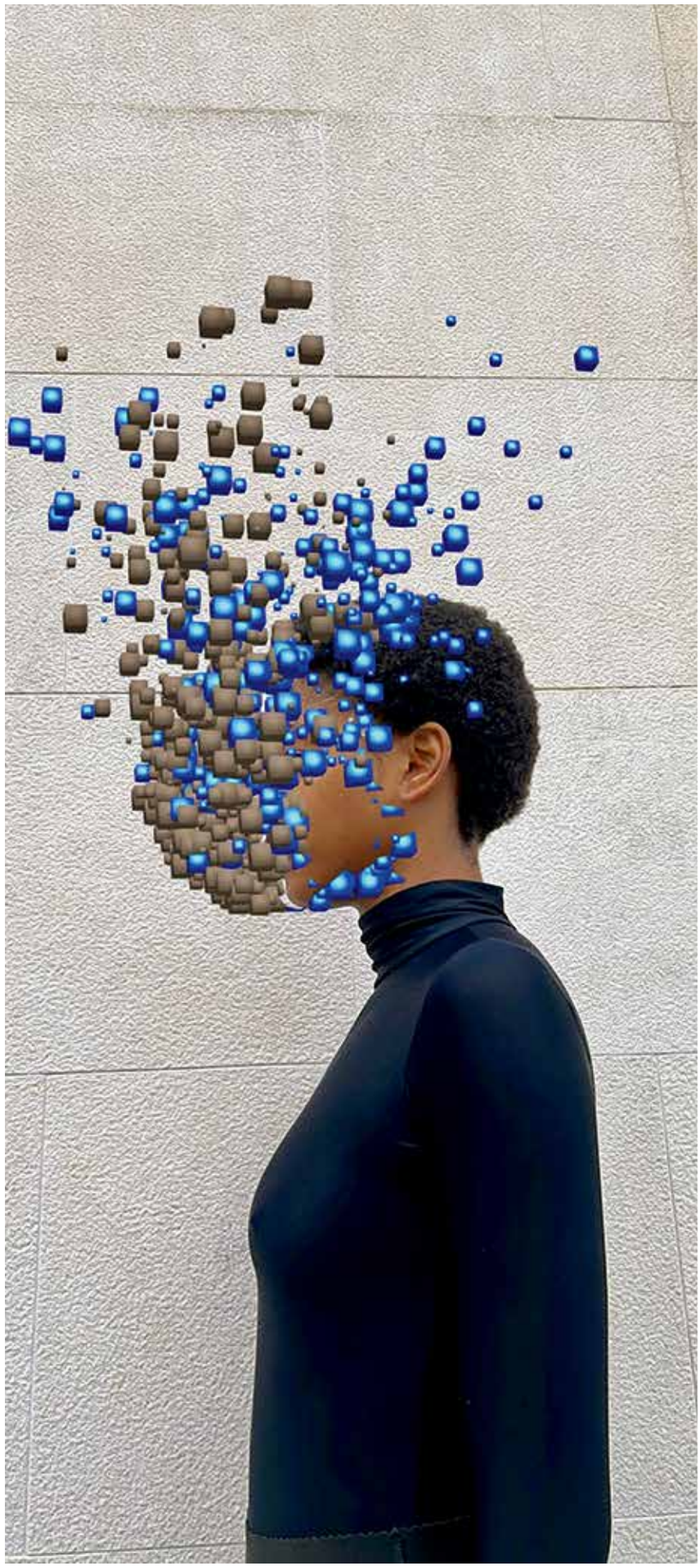
Inglês designed the original filter as part of the Bom Lab Art & Tech Summit, which she co-curated with Charlene Prempeh to address this question: Can technology save us? Inglês's Instagram face filter focuses on hiding its user's identity through augmented reality technology. Onscreen, blue cubic pixels float in the air as other pixels carry individual skin tones into the surrounding atmosphere, mirroring the dissolving limits of our bodies in the context of collective action. As skin tones and pixels take over the screen, the user observes their own dissipation.

From Black Lives Matter demonstrations to Hong Kong pro-democracy activism and calls for a cease-fire in Gaza, protest is a powerful tool of social engineering available to individuals and their communities. *No Face Filter* recognizes anonymity—including in the act of protest—as a human (digital) right.







EXODUS

Beszélő, issues 3 and 4, 1983,
Hungary, stencil-printed publications,
editions of 1000 copies each
Courtesy of the Art Department
Collection, László Rajk's Archive

GÁBOR DEMSZKY

In 1983, a group of dissidents including Ferenc Köszeg and Laszló Rajk Jr. tricked the Hungarian secret police into chasing them while their fellow dissident Gábor Demszky took photographs. Köszeg later went to the regular police to press charges against the four men who had followed them while "talking to their bags." The police report was published in a special issue of *Beszélő*, the Hungarian samizdat magazine of the Democratic Opposition, whose editors were constantly monitored by the state's internal affairs department. Demszky's photographs would become iconic images, not only as documents that exposed the secret police but as expressions of a dark and liberating humor in outwitting the state.

The totalitarian regime would not be able to keep up with the dissidents and their dreams for a democratic future. After the fall of communism in Hungary, dissidents including Demszky, Köszeg, and Rajk were elected into political positions. Köszeg served as a member of Parliament from 1990 to 1998 and was awarded the Commander's Cross from the Order of Merit of the Hungarian Republic in 2002, in recognition of his dedication to democracy, freedom of the press, and human rights. In 1988, Demszky and Rajk co-founded the liberal political party known as the Alliance of Free Democrats. Demszky served as mayor of Budapest from 1990 to 2010. Rajk was a member of Parliament from 1990 to 1996, and he also built a career as an architect and production designer for films.

[this page and following spread] *Ferenc Köszeg Chased by the Secret Police*, 1983, Hungary, black-and-white photographs
Courtesy of the Art Department Collection, László Rajk's Archive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[opposite and following spreads]
From the series *Overexposed*, 2015, Italy,
acrylic spray paint on photographic paper
Courtesy of the artist and NOME Gallery

PAOLO CIRIO

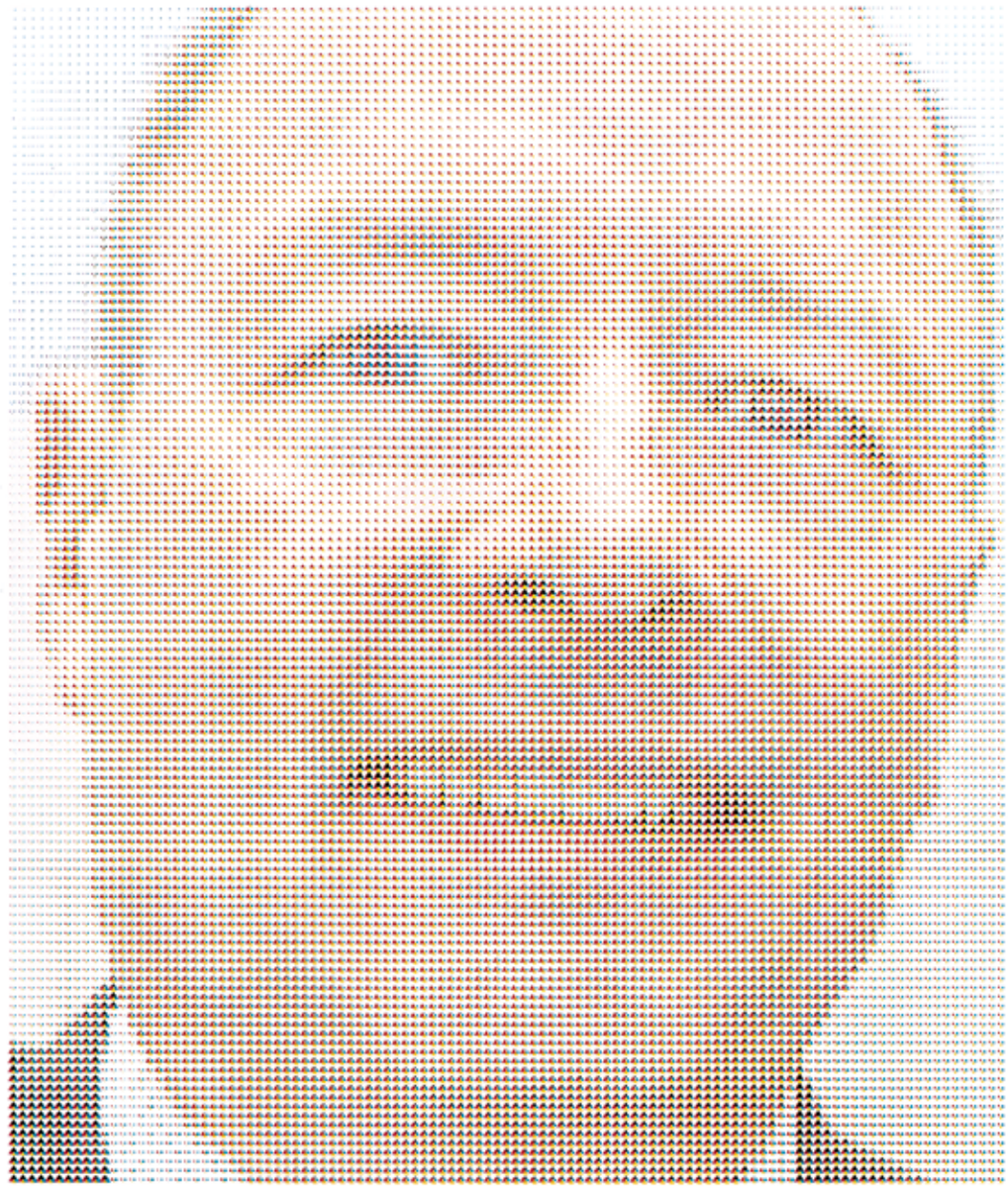
Following the mass-surveillance revelations of Edward Snowden, former employee and subcontractor of the National Security Agency, Paolo Cirio created a portrait series *Overexposed* (2015) of nine high-ranking U.S. intelligence officials at the FBI, CIA, and NSA. The artist appropriated unauthorized photos and selfies of the officials found on social media, reproduced them with the street art HD Stencils technique, and disseminated them on public walls throughout major cities. Cirio's artwork boldly satirizes the era of ubiquitous surveillance and overly mediated political personas.

Keith Alexander seems excited for this selfie taken by Corrie Becker, a mysterious acquaintance of his with whom he shares no apparent social connection. He and Corrie appear to be close and intimate, having fun with the selfie. The location where this photo was taken is unclear, and it is unknown how these two met each other. Corrie stated on her Facebook post, "Look who takes a great #Selfie—General Keith Alexander, the Cowboy of the NSA." The photo was obtained from Facebook via Corrie Becker's account. Dated May 27, 2014.

In 2001, Alexander was in charge of the Army Intelligence and Security Command with 10,700 spies worldwide. When he became NSA director he added 14,000 Cyber Command personnel, including Navy, Army, and Air Force troops. NSA peers jokingly referred to him as "Emperor Alexander" and "cowboy" for breaking legal limits to dominate the terrain. Alexander's bravado is reflected in the sci-fi design of his operations base, a facility known as the Information Dominance Center in Fort Belvoir, Virginia. The media described this base as a war room modeled "after Star Trek's Enterprise."

In 2014, Keith B. Alexander founded his consulting firm, IronNet Cybersecurity. With this firm, he offered his security expertise, including his "new technology, based on a patented and unique approach to detecting malicious hackers" to the banking industry for a $1 million fee per month. In response, congressman Rep. Alan Grayson sent a letter to the Security Industries and Financial Markets Association (SIFMA) to inform them that Keith Alexander might attempt to sell classified information and technology that he had access to during his career at the NSA.

— Paolo Cirio

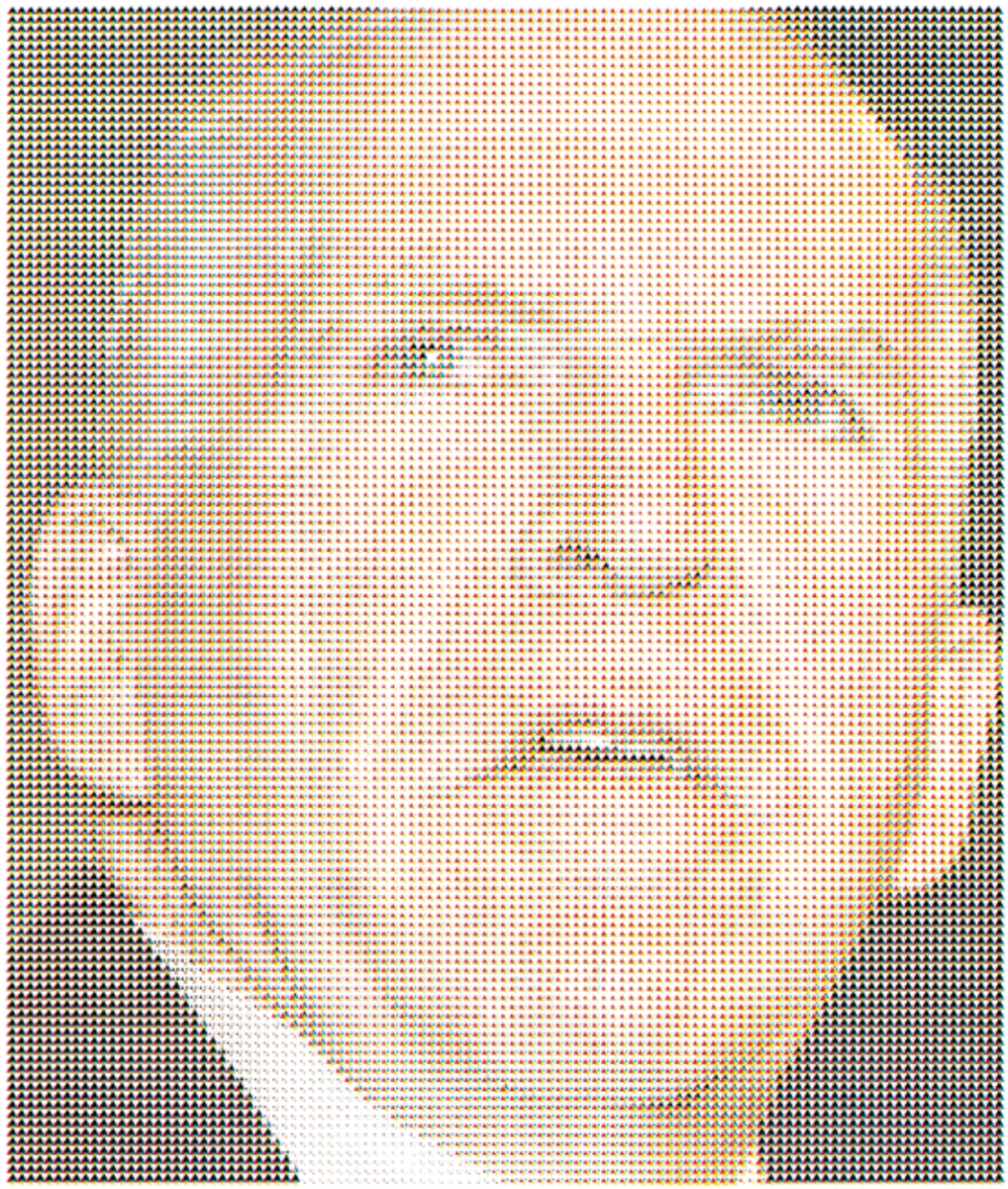


John Brennan is shown here at the OSS Society, presumably during an ongoing or post-conference talk at the William J. Donovan dinner. The most controversial CIA figure of the last two decades appears preoccupied with an unfinished sentence. The photo was obtained from Facebook via OSS Society. Date October 29, 2014.

As director of the CIA, John Brennan [was] responsible [for] violating several human rights and international laws. While in office, he … presided over mass levels of surveillance, the hacking of global communication networks of allies, secretive drone attacks condemned by the UN, as well as the brutal torture of suspects without trial at secret prisons organized through extraordinary rendition flights outside of U.S. jurisdiction.

Brennan and the CIA were also accused of hacking into the computers of U.S. Senate employees in order to surveil the release of the Intelligence Committee report on the CIA's detention and interrogation program. John Brennan lied when he insisted that the CIA had not improperly accessed the computers of Senate staffers investigating the agency's role in torturing detainees. Later, an internal investigation confirmed that the CIA had truly hacked the Senate's computer network, and Brennan was forced to apologize to Senate Intelligence Committee members by affirming that the CIA had spied on the Senate Panel. In July 2014, two senators of the Intelligence Committee demanded Mr. Brennan's resignation because of his false testimony and unconstitutional spying on Congress.

— Paolo Cirio



In this photo, James Comey is reclined in his seat, exhibiting a borderline depressed energy. Adrian Garcia, Harris County Sheriff from Texas, tweeted this photo with the caption: “Met the new FBI Dir. James Comey who visited Houston today. Area law enforcement leaders met w/him as well!” The photo was obtained from Adrian Garcia’s Twitter account. Dated October 25, 2013.

[Comey’s] position on citizen privacy is grounds for concern, given the amount of privacy-invasive policies that he supports. For example, in a public speech at the Brookings Institution in Washington, D.C., in October 2014, he rebuked Apple and Google for the further development of smart phone encryption. However, Mr. Comey appeared to have few answers for critics who have argued that any portal created for the FBI and the police could also be exploited by national or foreign intelligence agencies, as well as by cyber criminals. In March 2015, during the House Appropriations subcommittee hearing on the FBI budget for the upcoming fiscal year, Comey was again critical of new encryption features by Apple and Google.… In another public speech against encryption, he cited four criminal cases involving minors. However, in the three cases The Intercept was able to examine, cell phone evidence had nothing to do with the identification or capture of the culprits and encryption would not even remotely have been a factor.

— Paolo Cirio

Stills from *1971*, 2014,
United States, documentary
feature film
First Run Features

JOHANNA HAMILTON

For the sixty years following its establishment in 1908, the FBI was practically unregulated and nearly untouchable. This started to change on March 8, 1971, when the self-declared Citizens' Commission to Investigate the FBI broke into the agency's small office in Media, Pennsylvania. The activists left with files in hand and sent them to the *New York Times*, *Los Angeles Times*, and *Washington Post*. Through the diligent work of journalist Betty Medsger, the *Washington Post* alone moved forward in publishing the files. The documentary feature film *1971*, directed and co-written by Johanna Hamilton, is based on Medsger's 2014 book *The Burglary: The Discovery of J. Edgar Hoover's Secret FBI*. Made that same year, the film made public, for the first time, the identities of many of the Commission's participants.

The stolen files revealed the existence of COINTELPRO, the FBI's illegal surveillance program that involved the intimidation and mistreatment of U.S. citizens. Public outcry and the subsequent discovery of other abuses of power led, in 1975, to the first Congressional investigation of U.S. intelligence agencies. COINTELPRO was shut down and Congress drafted a number of laws to prevent government surveillance from targeting civilians. Requests pursued through the Freedom of Information Act, however, show the continuation of such practices. The protections ostensibly provided by the post-1971 laws were amended by the 2001 Patriot Act, passed in response to 9/11 to give the government expanded permission to surveil American civilians for reasons of "national security." The Patriot Act expired in 2020, but its surveillance infrastructure and the authorizations it granted to law enforcement remain intact.

From the series *Aesthetic Register of Covert Forces*, 2017–ongoing, Cuba, acrylic on canvas
Courtesy of the artist

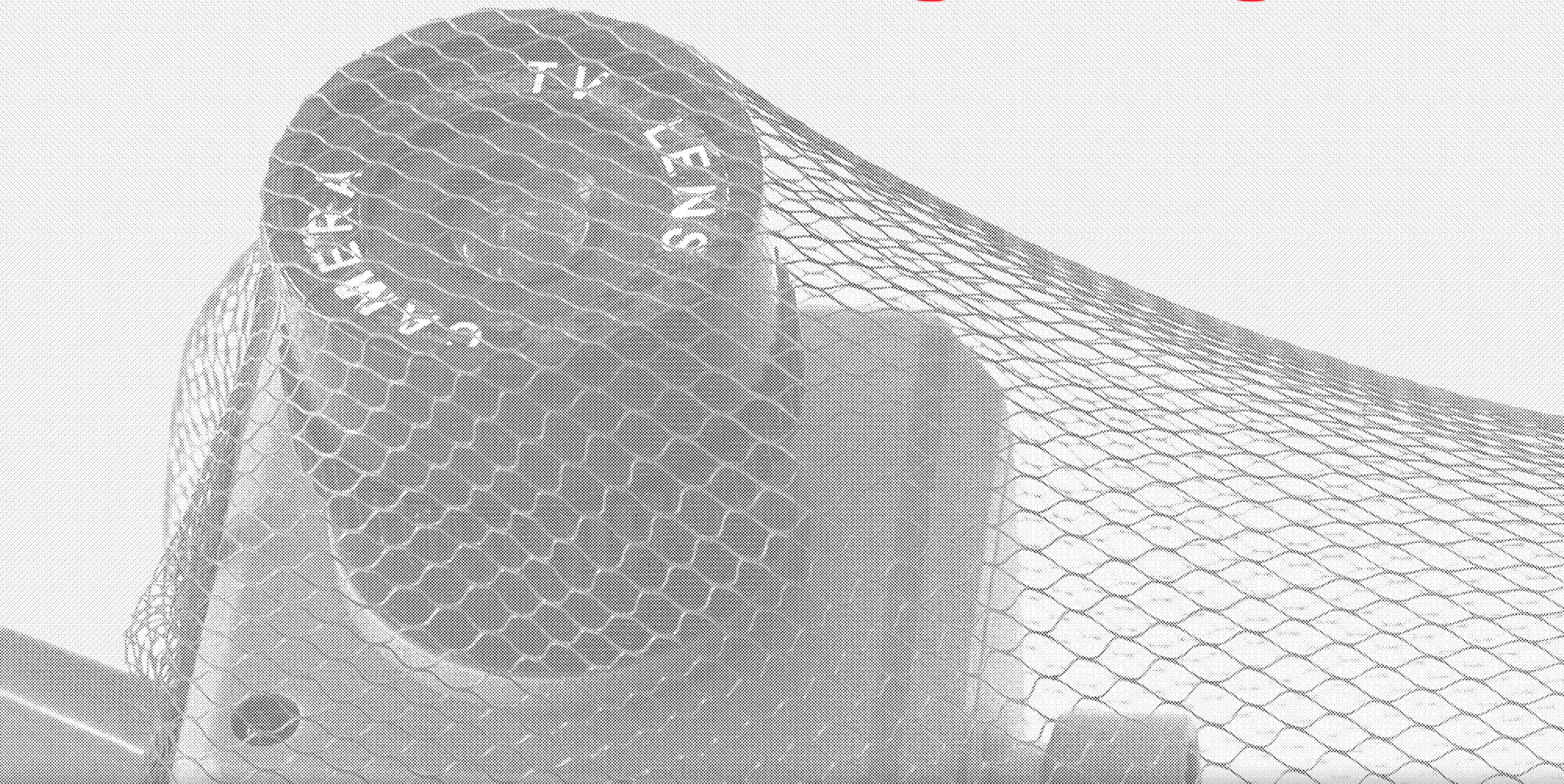
FRANCISCO MASÓ

Offering sociopolitical commentary through a succinct catalog of clothing colors, Francisco Masó's *Aesthetic Register of Covert Forces*, a series begun in 2017, ironically reveals Cuba's long history of surveillance and systemic oppression. Each canvas is twenty-five by twenty-one inches and displays solid acrylic stripes based on the colors of polo shirts distributed by the Cuban government to the leadership class, members of the military, and various undercover agents. Masó discerningly critiques the covert operations of the Cuban regime, wherein the trained eye can recognize the undercover agents who wear banal shirts while tasked with suppressing dissent.

Aesthetic Register of Covert Forces nods to twentieth-century Latin American art history, notably the geometric abstraction of the Concrete Art movement. The series takes additional inspiration from the Cuban artists selected for the exhibition *Es solo lo que ves* (It's Just What You See), which was planned to take place in the late 1980s but never realized. The selected artists were using abstraction as a conceptual tool to address the Cuban government's oppression and stifling censorship.

Masó, in recontextualizing shades of apparel, manipulates a visual aesthetic to combat suppression rather than mask it. Demanding scrutiny beyond the surface, *Aesthetic Register of Covert Forces* is an invitation into an obscure world behind the seemingly benign.

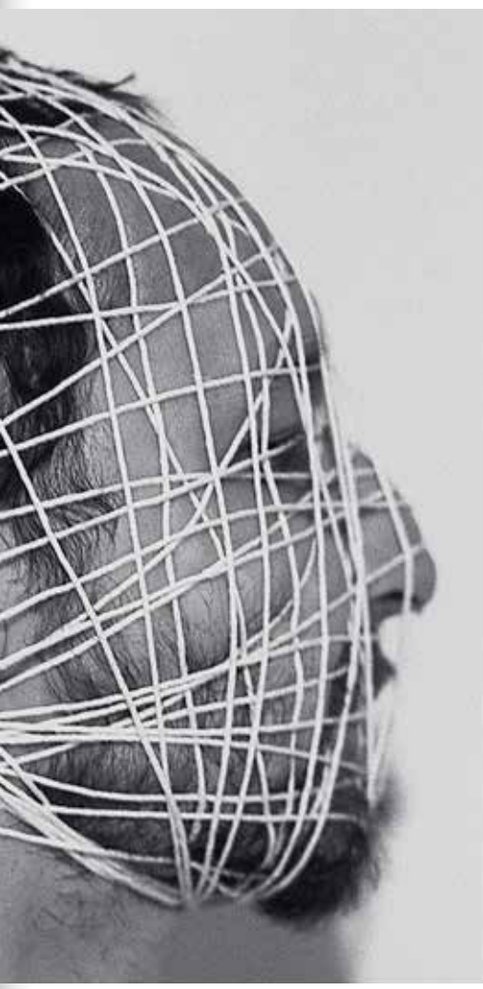
CRITICIZE



Masks, 1976, Romania, black-and-white gelatin silver prints
Courtesy of the artist and Galerie Anne-Sarah Bénichou

DECEBAL SCRIBA

The self-portraits of Decebal Scriba's photography series *Masks* (1972–2018) position the artist both frontally and in profile. In the triptych illustrated here, his head is bound with taut rope in the first two images but not the third. The latter shows Scriba facing the camera with only the impression of the rope remaining—set into his skin. The *Masks* series poignantly reflects the societal constraints that surveillance and censorship imposed in communist Romania. Even when the rope is no longer visible, its effect is in evidence. Yet the artist's demeanor, as he stares directly at the camera, signals defiance. In 1991, Scriba left Romania for France, where he has made Mail Art to send back to his homeland.

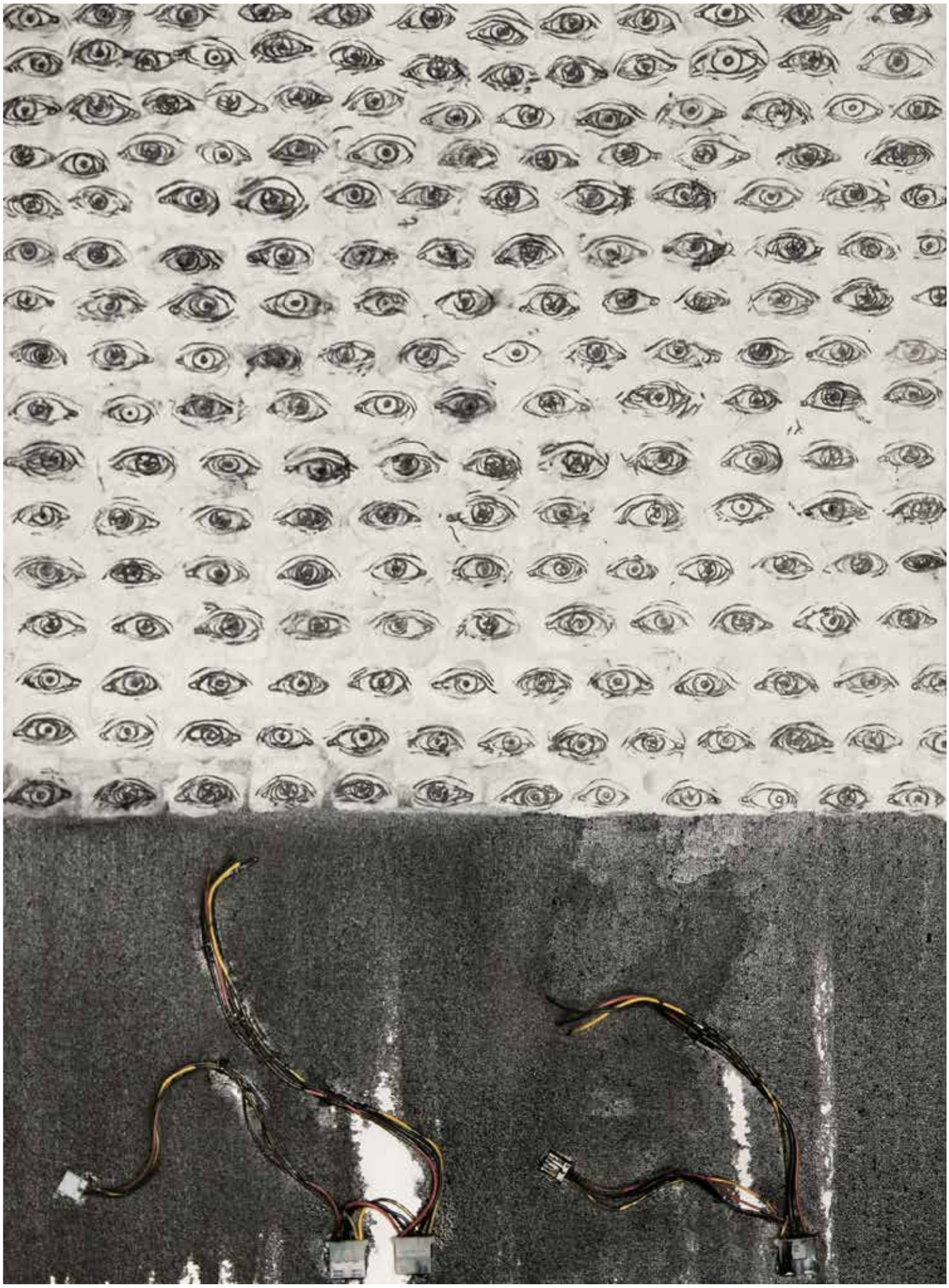


In Your Eyes, 2011, United States, mixed media on canvas
Courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation

ASYA DODINA AND SLAVA POLISHCHUK

Since 2003, Asya Dodina and Slava Polishchuk have collaborated to address profound tensions and dualities defining contemporary society. As descendants of Jewish ancestors who experienced anti-Semitic pogroms in Russia, Dodina and Polishchuk are acutely aware of the dangers posed by state surveillance. Their work operates through juxtapositions, exploring such themes as destruction and hopefulness, isolation and connection, and memory and the loss of self.

In Your Eyes (2011) is among the earliest works in their *What Remains* series, which explores the ephemerality of life through foraged trash and debris. The lower portion of the mixed-media canvas shows computer wires that Dodina and Polishchuk found on the streets of New York. Above them, an expanse of hand-drawn eyes might suggest surveillance by an anonymous network, or perhaps the potential of biometric tracking using facial recognition to access valuable personal information. Are the tangled wires reaching toward vulnerable eyes, seeking the data they contain? Dodina and Polishchuk intentionally play with visual ambivalence, inviting viewers into further questioning.

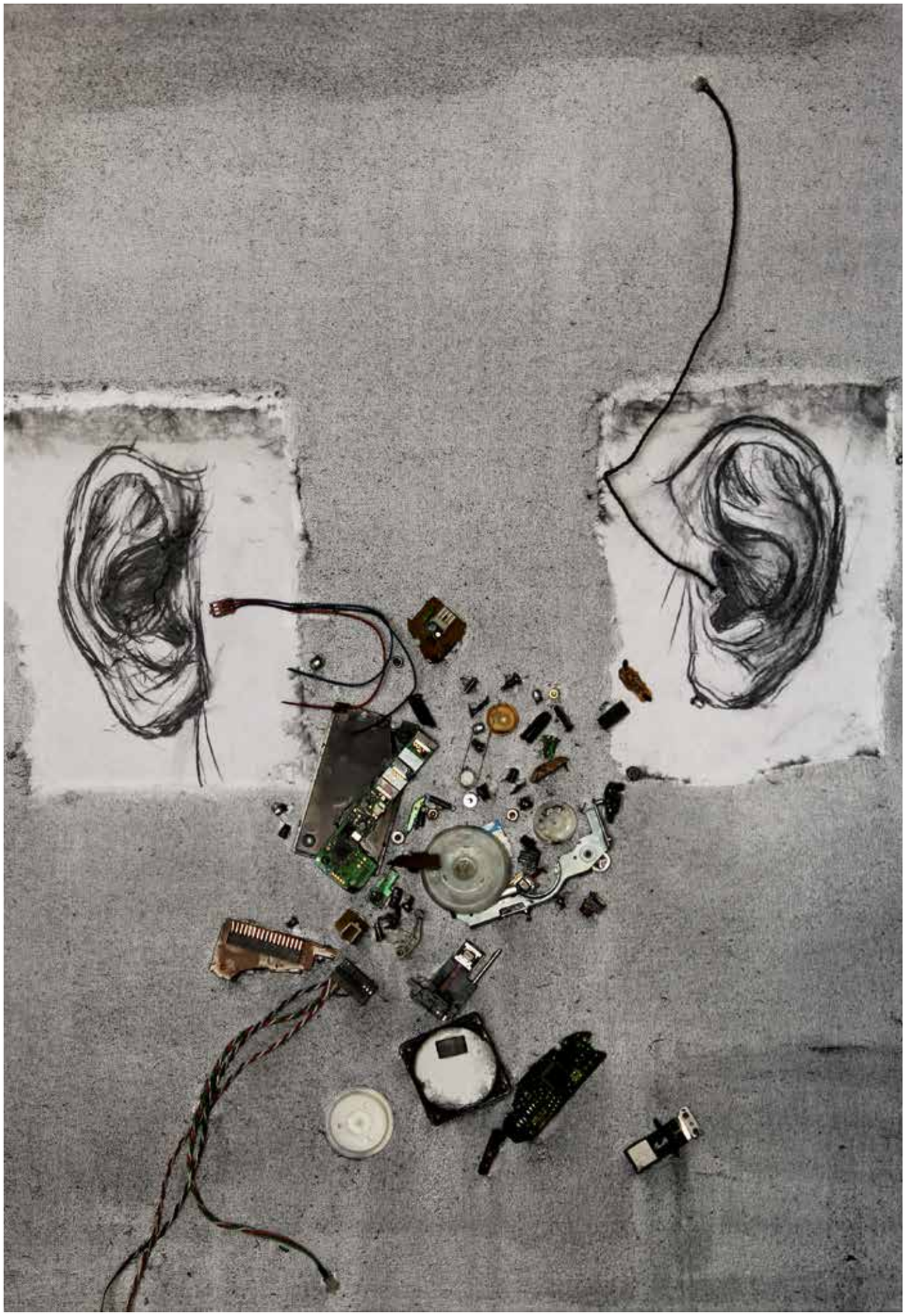


Is Anyone Listening or Am I Talking to Myself?, 2011, United States, mixed media on canvas
Courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation

ASYA DODINA AND SLAVA POLISHCHUK

Is Anyone Listening or Am I Talking to Myself? (2011) captures a moment of sudden disintegration: a computer falling to pieces between two ears. This vivid image emphasizes society's fragility in the face of its increasing dependence on technology to facilitate human interactions. It resonates in a society where connection to a broader community can feel tenuous, leaving many to feel isolated, insecure, and lonely. The work's title might be read as an existential cry for meaningful relationships.

Or it might be read as a fearful, even paranoid statement about being spied on in a private moment. In this work, the walls literally have ears. They presumably belong to unseen others. One does not know who is listening, what they have heard, or whom they might tell. As old surveillance technologies inevitably give way to more sophisticated ones—like the dissolving computer—the viewer is left to worry that newly emerging devices will extend the ears' network.



Thank You, Have a Nice Day! 2, 2015, China, camera, egg, steel bar, stone
Courtesy of the artist

YANG JIAN

In *Thank You, Have a Nice Day! 2* (2015), Yang Jian explores the eighteenth-century concept of the panopticon, as conceived by British philosopher Jeremy Bentham. As a circular prison with a central guard tower, the panopticon would, Bentham proposed, generate self-regulated conformity among prisoners through the mere possibility of being constantly watched. Yang, who is known for his whimsical-yet-incisive critique of mass surveillance, here reenacts the conditions of Bentham's theoretical prison with a laughably conspicuous surveillance apparatus: a CCTV camera perched on a steel pole attached to a rock wrapped in a mesh bag carrying three brown eggs.

Despite its playful design, *Thank You, Have a Nice Day! 2* does not offer a sense of solace. Yang believes it is futile to imagine returning to pre-surveillance society. He drives this point home through the visual idiom of eggs falling toward a rock, evoking the phrase "以卵击石" (yǐ luǎn jī shí), which means "to strike a stone with an egg." Yang points to the foolishness of attempting the impossible, in other words, breaking a rock with something fragile.

Furthermore, he sees the vaguely phallic shape of the piece as symbolically juxtaposing processes of creating life and constraining it, alluding to recent Chinese socioeconomic developments that have generated prosperity while enabling restrictive, necrotic conditions. The artist bypasses simplistic value judgments in favor of levity, to better draw the viewer into the work's nuanced, challenging message about the urgent need to be aware.

Stills from *Hiding Our Faces Like a Dancing Wind*, 2016, Palestine, video, 7:30 min.
Courtesy of the artist

YAZAN KHALILI

A computer screen shows video footage of a young Palestinian woman covering her face with her hands. As the video continues, facial recognition software attempts to determine her identity, showing pictures of ancient African and Native American masks from the collections of the Tropenmuseum (now Wereldmuseum) in Amsterdam and the Musée du Quai Branly in Paris. Yazan Khalili's *Hiding Our Faces Like a Dancing Wind* (2016) suggests how new technologies can replicate and extend colonial practices. He made the work after noticing that when he took pictures of non-Western masks using his smartphone, the device started "spontaneously" using a facial recognition tool. This sparked Khalili's curiosity about the "techno-ideological gaze" that "constructs the way we understand the world around us."

… all the masks that disappeared from our lives were not recognized as the faces of our ancestors who came from the faraway shores of our dreams asking us to recognize them as messages from trees looking at us as we feel the pain of not being recognized by the thieves who stole our faces and left us unrecognizable facing the flow of time trying to hide our remains with our hands like a dancing wind not wanting to have our faces recognized by the cameras that keep stealing our souls …

— Yazan Khalili


all the masks that disappeared from our lives
were not recognised as the faces of our ancestors
who came from the faraway shores of our dreams
a
SLO-MO VIDEO PHOTO SQUARE PANO
HDR
Off


all the masks that disappeared from our lives
were not recognised as the faces of our ancestors
SLO-MO VIDEO PHOTO SQUARE PANO
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Off


all the masks that disappeared from our lives
were not recognised as the faces of our ancestors
who came from the faraway shores of our dreams
asking us to recognise them as messages from
trees looking at us as we feel the pain of not
being recognised by the thieves who stole our
faces and left us unrecognisable facing the flow of
time t
SLO-MO VIDEO PHOTO SQUARE PANO
HDR
On

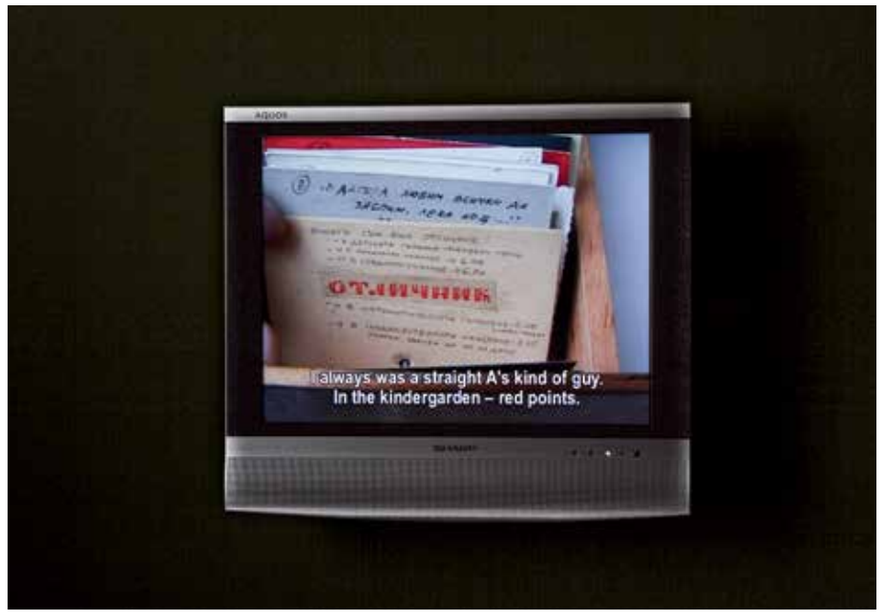
RECLAIM

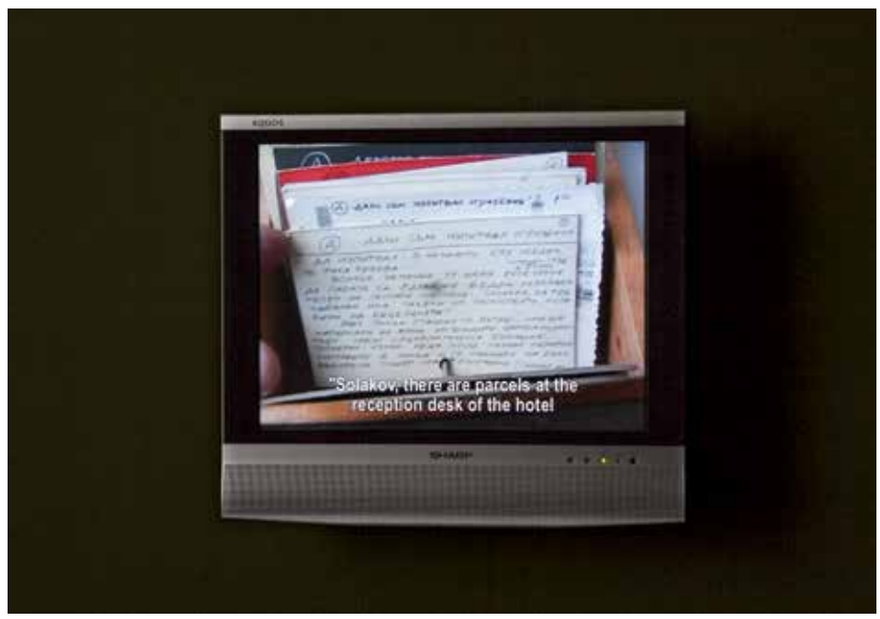
Top Secret, 2007, Bulgaria, video on DVD (color, sound, 40:07 min.), after *Top Secret*, 1989–1990, acrylic, ink, oil, photographs, graphite, bronze, aluminum, wood; a shameful secret; 179 index cards in original box
Collection Van Abbemuseum

NEDKO SOLAKOV

Top Secret, created between December 1989 and February 1990, consists of an index box filled with a series of cards detailing the artist's youthful collaboration with the Bulgarian state security, which he stopped in 1983. The work caused great controversy when it was first exhibited in the spring of 1990, at the height of the political changes to the long-standing Communist rule. In Bulgaria, the official files remain closed. For twenty-eight years, there were no publicly known documents on the artist's collaboration. It was not until April 2018 that the state documents relating to the involvement of the artist with the state security of the People's Republic of Bulgaria were released. The self-disclosing gesture in this artistic project is still unique in the context of post-Communist Europe, and since its appearance *Top Secret* has become an icon of its time.

The forty-minute-long video, which shows the artist rereading the index box's contents, was shot in his studio in Sofia in 2007. In the video, Nedko Solakov mistakenly mentions 1976 as the starting year for the Bulgarian secret service. His service period was from 1978 to 1983.


I always was a straight A's kind of guy.
In the kindergarden – red points.


"Solakov, there are parcels at the
reception desk of the hotel

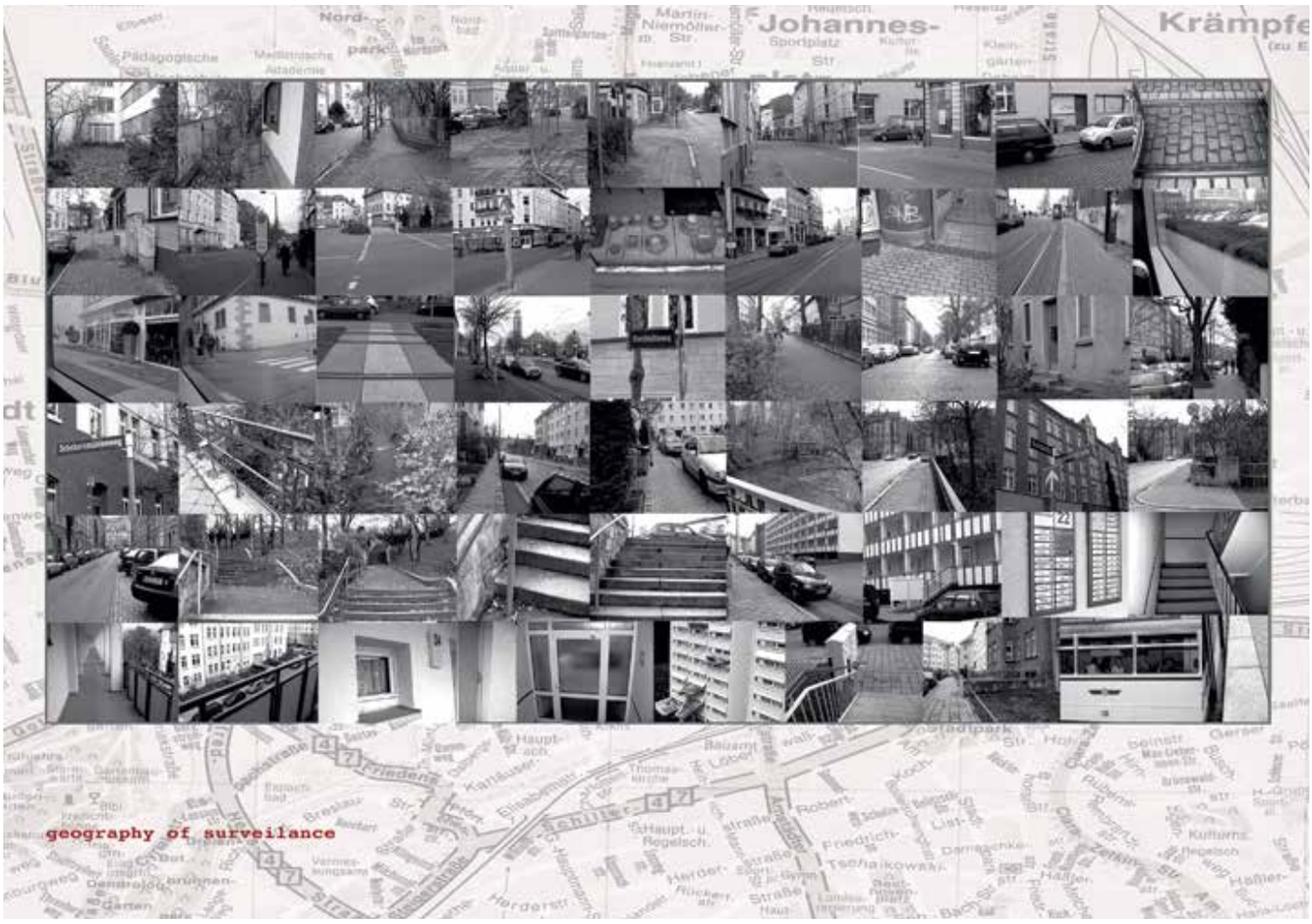

Did I get a conscious-stricken
feeling (at that time)?

[opposite and following spread]
Pigs Like Pigments, 2007,
Germany, chromogenic prints
Courtesy of the artist and
VG Bild-Kunst, Berlin

VERENA KYSELKA

Verena Kyselka's *Pigs Like Pigments* (2007) illuminates how totalitarian surveillance regimes, including the one she lived under in East Germany, have falsely cast the activities of ordinary life as subversive. In 1993, Kyselka gained access to her Stasi file, codenamed "Pigment." In reading through reports on her that informants (known as "IMs") sent to the secret police, Kyselka observed that they were mostly concerned with her uneventful daily activities—yet the IMs found ways to make her sound suspicious. In response to these distortions, Kyselka annotated the paranoid accounts in her Stasi file with the boring details of what actually happened, demonstrating the gap between the secret agents' fantasies and reality.

Pigs Like Pigments elucidates the logic behind systems of "total observation." Increasingly common around the world, such systems are ostensibly created to prevent and identify criminality. Kyselka shows how they often involve fabrication. Her artwork ultimately vindicates innocent people who were criminalized and arrested by the East German government based on fictitious or sensationalized reports.


geography of surveilance

pu political underground action

Politische Untergrund Tätigkeit

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Oral Information from IM „Burg"
concerning Kyselka, Verena

For the 65th birthday of a relative, K. had applied for a journey in an urgent family matter. This had, however, not been granted to her. K. expressed towards the IM that, concerning this matter, she had orally complained in Berlin. In preparation for this journey she had already placed her daughter in Berlin.
The IM evaluates that K. is currently in financial difficulties. Her furnishing, too, leaves an untidy impression.
Otherwise K. does the restorations in her flat.
She takes her daughter to Kindergarten at 9:00 a.m. every day.

The informer "IM Burg" was a freelance restorer. He visited me ones or twice a week to advice me on the restoration of a painting. I had confidence in him.
He was afraid that I might snatch away good restoration jobs from him. I might have become his competitor.
My development as an artist was suspect to him.

Oral report by IM „Burg"

The IM reports that Kyselka, Verena has been accepted as a member of the VBK (Verein Bildender Künstler – "Association of Visual Artists") by the Central Admission Committee in Berlin. This was received with astonishment among restorators because K. does not seriously practice this craft.(...) Concerning her artistic development, the IM evalutes that K. is technically unskilled in restoration.

political underground action

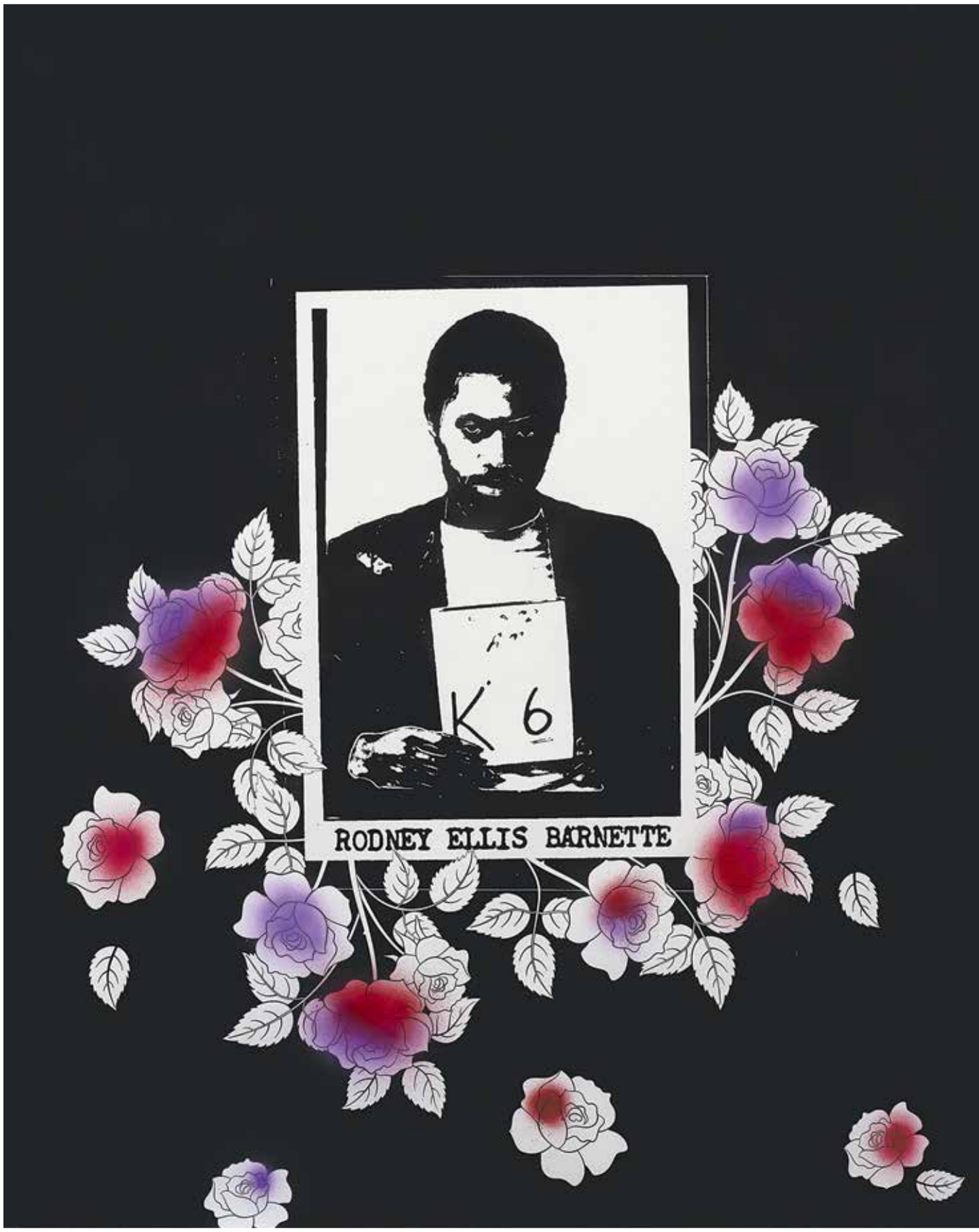
Oral report of IMS „Burg" concerning the person Verena Kyselka

The IM came to know that K. is presently very commited to getting her own workshop. Presently, K. does restorations in a garret, which – following the IM's information – has a negative impact on the professional value of her work.Furthermore, the IM reports that K. wants to distance herself from the Kirchliche Werkstätten ("Church Workshops" for restorations) in order to go freelance. K.'s leaving would be welcomed by the Church Workshops because, according to the IM, there have been some problems with K. lately.

Mug Shot, 2021, from the series *FBI Drawings*, 2016–ongoing, United States, mixed media on paper
Collection Bill and Christy Gautreaux

SADIE BARNETTE

Sadie Barnette's *FBI Drawings* (2016–ongoing) beautify a 500-page FBI dossier on her father, Rodney Barnette, who helped found the Black Panther Party's local chapter in Compton, California, in 1968. Upon obtaining the dossier through the Freedom of Information Act, the artist turned its contents—including a picture of Rodney Barnette, a letter detailing a full-scale investigation into his activities and sexual orientation, and a list of informants—into works of art. Barnette has newly envisioned her father's story by adding floral decorations to the FBI's invasive documents. The file containing Rodney Barnette's mugshot appears with white roses and pink and purple spray paint, while the investigation letter is stamped with the words "AX TO HANDLE" and bordered with roses again. Barnette calls the *FBI Drawings* "a journey of repair," indicating a reclamation of her family history and dignity despite the FBI's violating actions. Sometimes resistance is achieved through not allowing the state to have the final word.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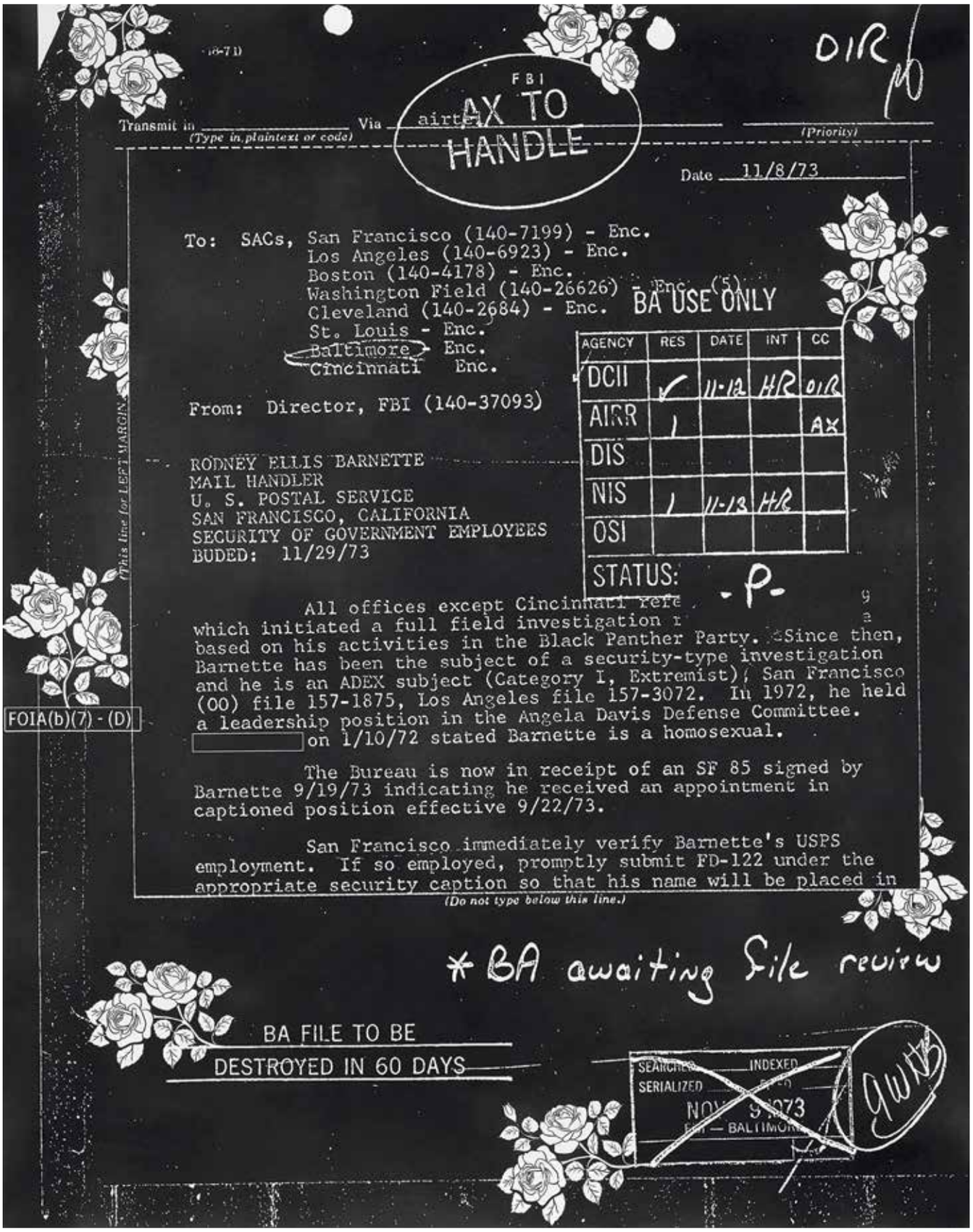
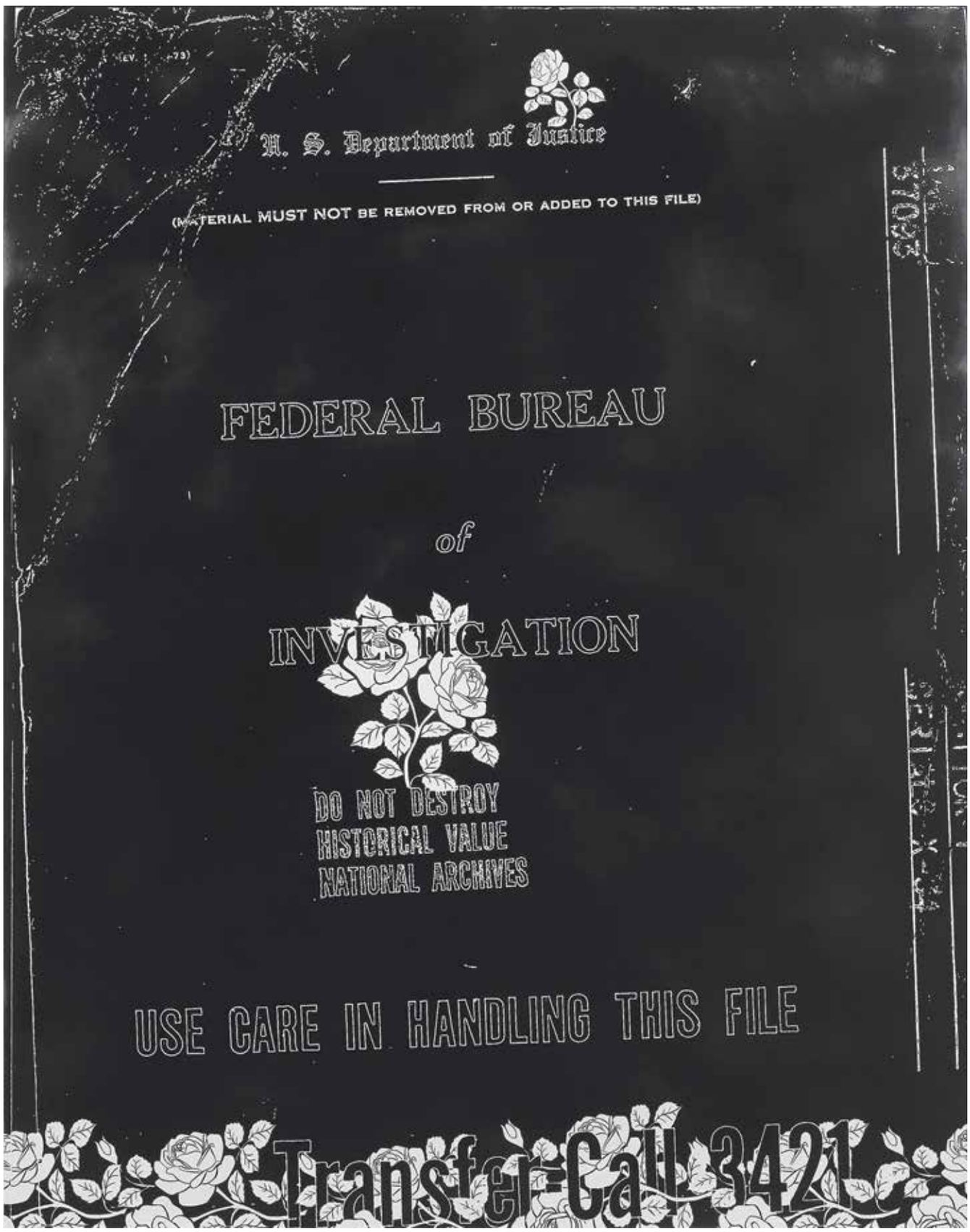
RODNEY ELLIS BARNETTE

AX to Handle, 2020, from the series *FBI Drawings*, United States, mixed media on paper
Collection Pomona College, Art Acquisitions and Programs Fund, Benton Museum of Art



Do Not Destroy, 2021, from the series *FBI Drawings*, United States, mixed media on paper
Collection Miller Meigs



REPURPOSE

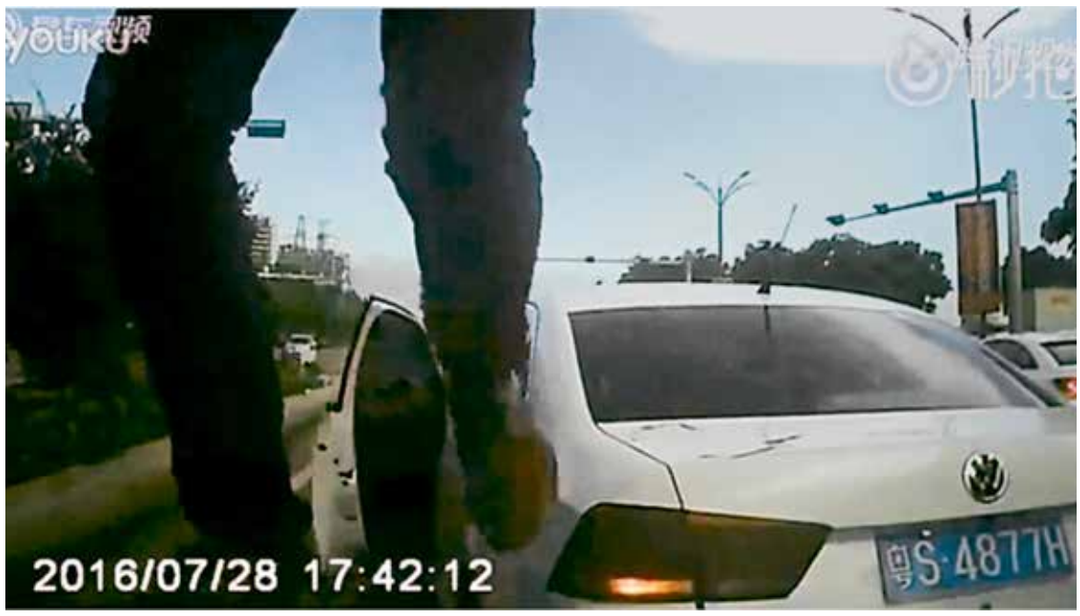
Stills from *The Making of Dragonfly Eyes*, 2017, China, video, 9:44 min. Courtesy of Xu Bing Studios

XU BING

In China in just the last decade, the government has installed an estimated 700 million surveillance cameras, about 60 percent of the global total. These cameras record every second of every day, capturing both mundane and outlandish events. Xu Bing's debut feature film, *Dragonfly Eyes* (2017), stitches together publicly accessible surveillance footage to tell a fictional story about a woman who, after leaving the Buddhist temple where she had spent most of her adulthood, is learning how to live in modern China. Known for works that disrupt our understanding of what we see, Xu persistently explores the relationship between vision and interpretation.

With no human agency operating them, surveillance cameras produce fascinating footage round the clock. Ineffably silent, these cameras record incessantly. Sometimes they record images that are beyond logical understanding, captured in one mad, fleeting instant. When these seemingly random yet intricately connected clips are assembled, what's the distance between the video fragments of real life and "reality"?

— Xu Bing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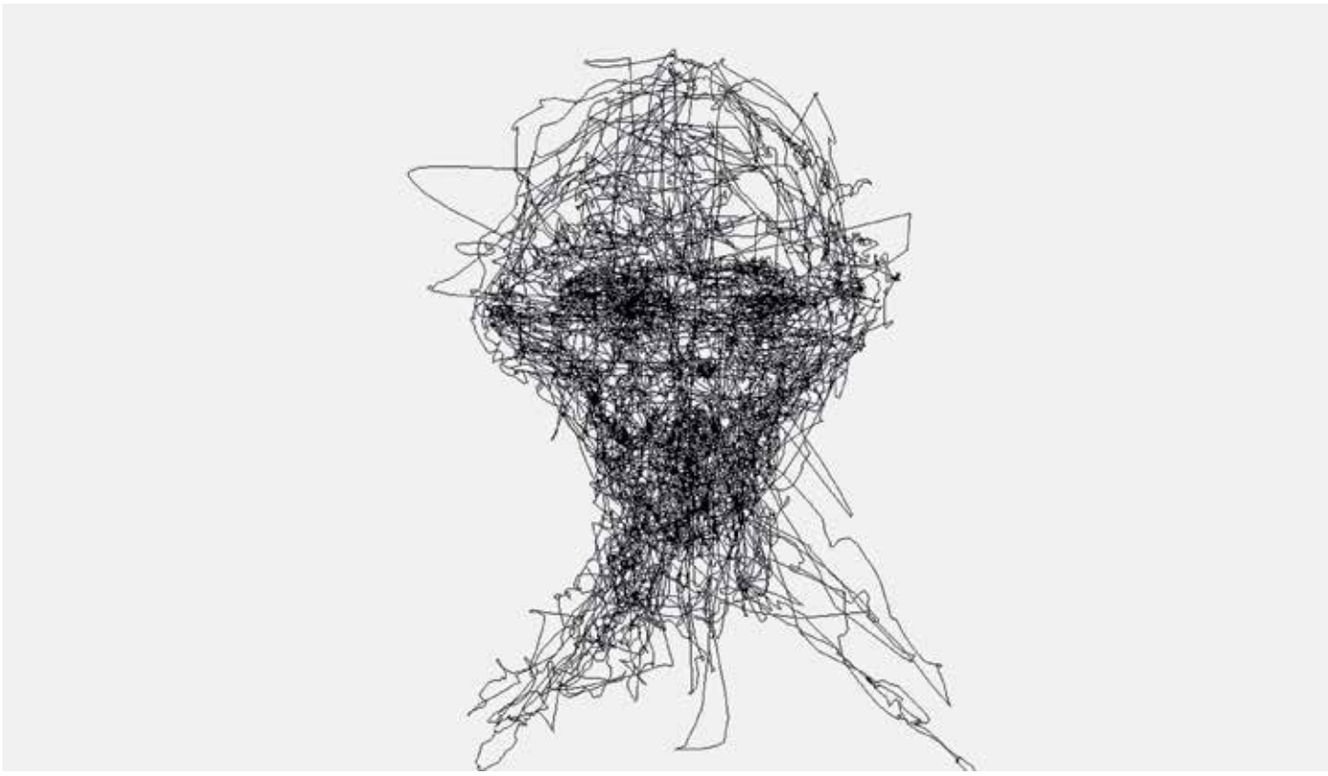
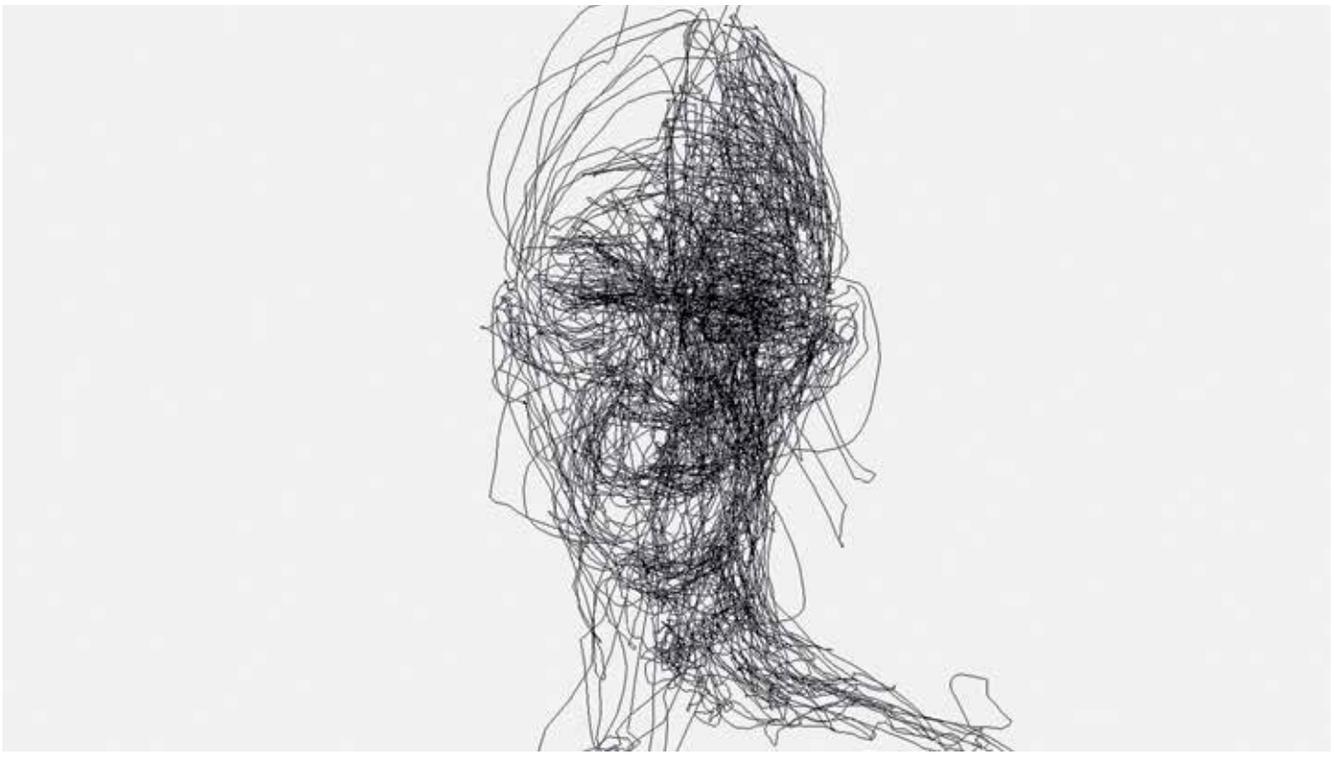
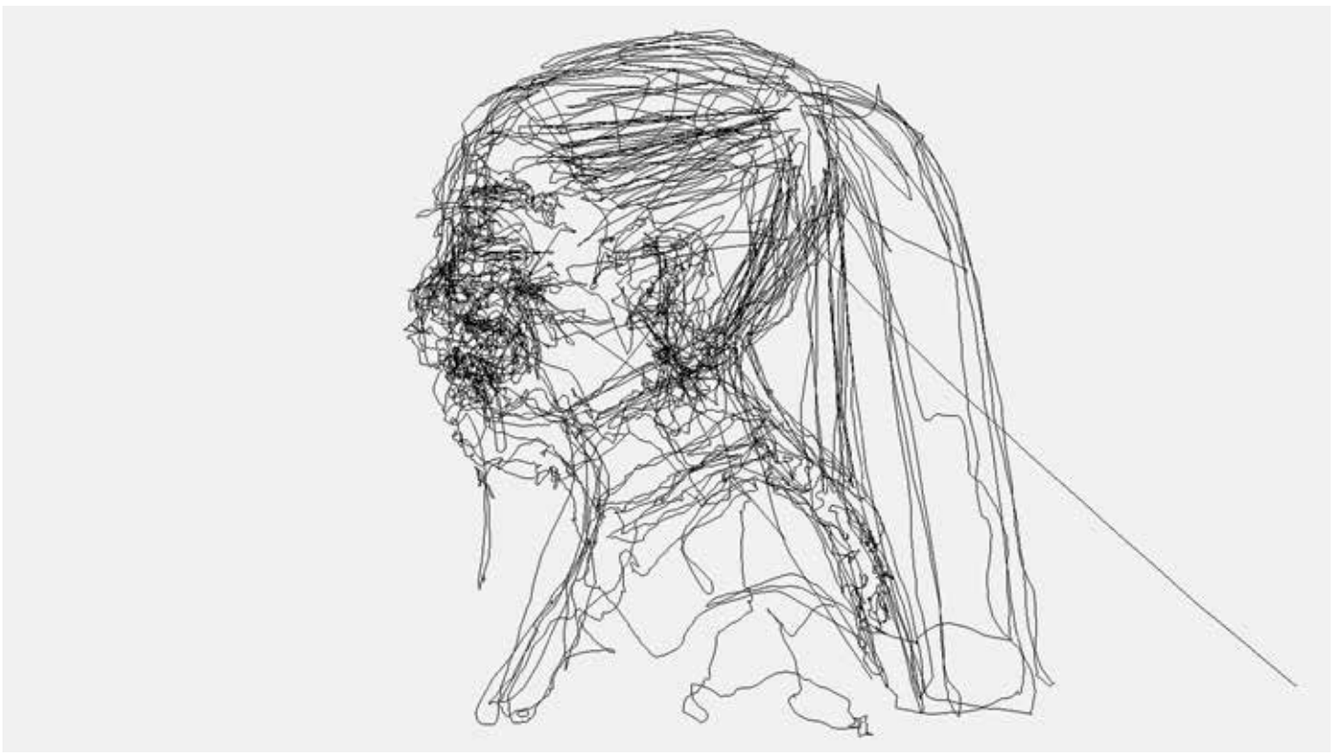
[opposite and following spread]
Drawing with My Eyes, 2015, United Kingdom, Tobii Eye Track software renderings printed on A3 paper
Courtesy of the artist

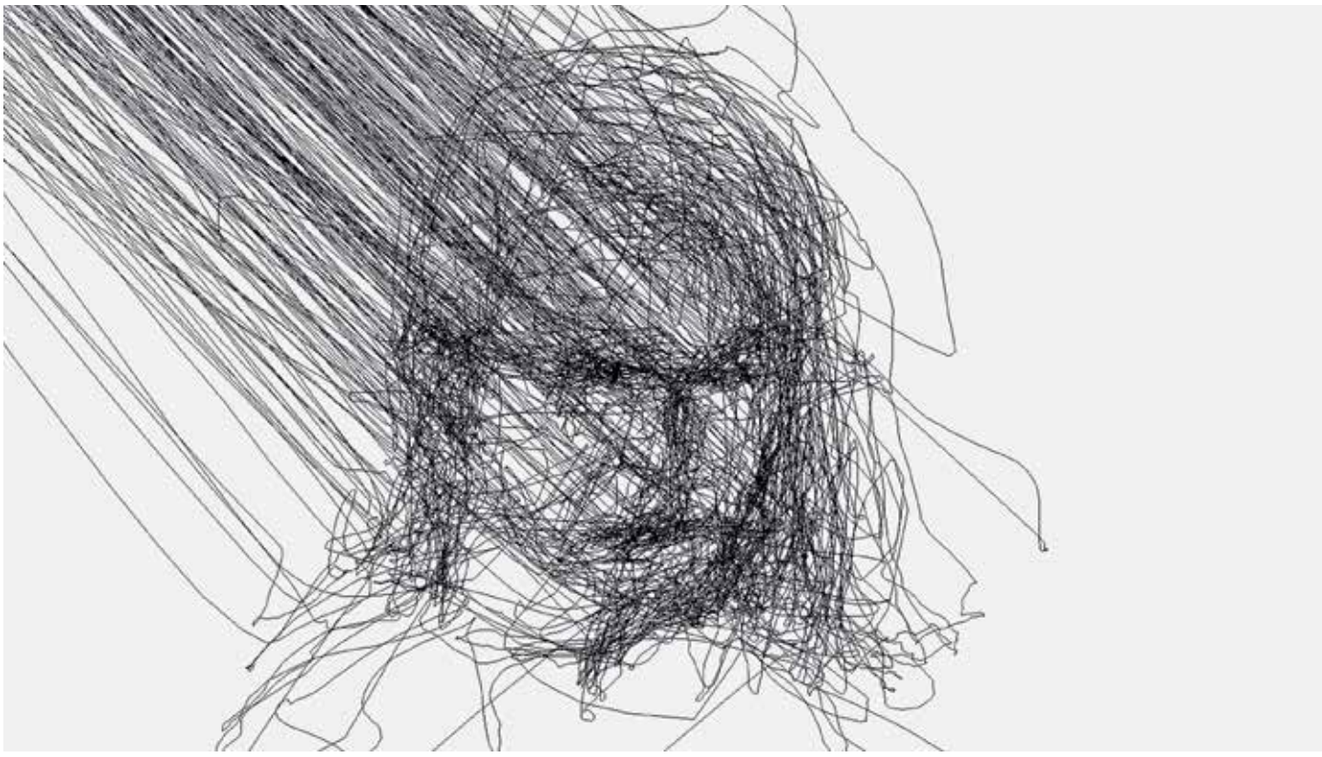
GRAHAM FINK

Graham Fink creates art using an eye tracker and custom software he developed with the Swedish company Tobii Technology (originally to study effective advertising). Fink creates works such as *Drawing with My Eyes* (2015) by literally moving his eyes to render faces, in a process that involves no direct touch. By Fink's own account, he starts with envisioning the sketches in his head. The eye tracking software shines infrared light straight into his eyes and records the reflections with algorithms to translate his eye movements into onscreen lines. The erratic and random lines that appear in his drawings indicate the unsteady nature of his technical approach, prone to involuntary movements and distractions.









[opposite and following spread]
From the series *Palaeanthropical Physiognomy*, 1991–1992/2024, Germany, prints on dry plates, edition of 2
Courtesy of the artist

GERHARD LANG

Gerhard Lang explores human perception through pictures of creatures showing human-and-animal-hybrid faces, phantoms that do not exist (or have not been found as yet). He does this by using a Minolta Montage Unit, in Germany known as a *Phantombildgerät*. This "phantom imaging device" combines images using artificial light, mirrors, lenses, a surveillance camera, and a control monitor. The phantoms depicted in Lang's photographic collection *Palaeanthropical Physiognomy* were made in 1991 and 1992 in collaboration with a detective responsible for interviewing witnesses, in an interrogation room at the German Federal Criminal Police Office (Bundeskriminalamt, BKA).

The Japanese company Minolta began manufacturing its Montage Unit in the 1950s to assist in the identification and facial reconstruction of victims of the atomic bomb on Hiroshima. Its analogue mirror technique combines fragments from up to four portraits, each the size of a passport photograph, creating a single image, a so-called phantom image. Police forces in Japan and the United States subsequently used the Minolta Montage Unit to identify suspects. Its use became standard procedure in West German police departments at the time of the Baader-Meinhof terror attacks, beginning in the 1970s. While police-produced phantom images rely on mugshots of arrested persons, Lang, working with the detective, used photos of all the residents of his home village in Germany, Schloss-Nauses, along with photos of insects, primates, owls, and other animals.

In this way, Lang uses the phantom imaging device as an apparatus of earnest and playful creation, capable of exploring nuances of interpretation. *Palaeanthropical Physiognomy* suggests that the outcome of a technical device is determined not only by the device itself but also the artist's intention.

Police use phantom imaging devices to investigate suspects. Lang uses a phantom imaging device to investigate perception itself.

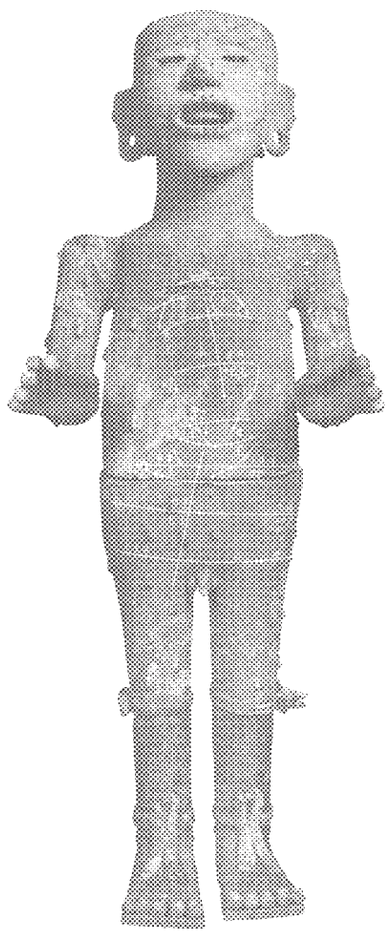
The phantom images of Lang's Palaeanthropical Physiognomy *series are coated dry-plates that were made by hand using an analogue image-transfer technique. The images in the catalog do not fully represent the layered character of the actual works.*

GERHARD LANG

Pictured opposite, top, is the interrogation room at the German Federal Criminal Police Office (BKA) in Wiesbaden where Gerhard Lang made the phantom images in *Palaeanthropical Physiognomy.* Spread out on the table to the left are the photographic materials that Lang carried in the suitcase seen at the center. On the table on the right is the Minolta Montage Unit that an interrogator (a BKA detective) operated as Lang described fictional faces. This photo was taken directly after Lang completed the *Palaeanthropical Physiognomy* images on March 31, 1992. (Coincidentally, also visible on the table against the wall are materials from a file on German war criminal Josef Mengele, whose discovered remains in Brazil were being investigated at the time.)

[top] Interrogation room at the German Federal Criminal Police Office (BKA), Wiesbaden, ca. 1992

[bottom] Gerhard Lang operating the Minolta Montage Unit as part of his performance *Simulacra ex Speculis*, MuseumsQuartier, Vienna, 2018



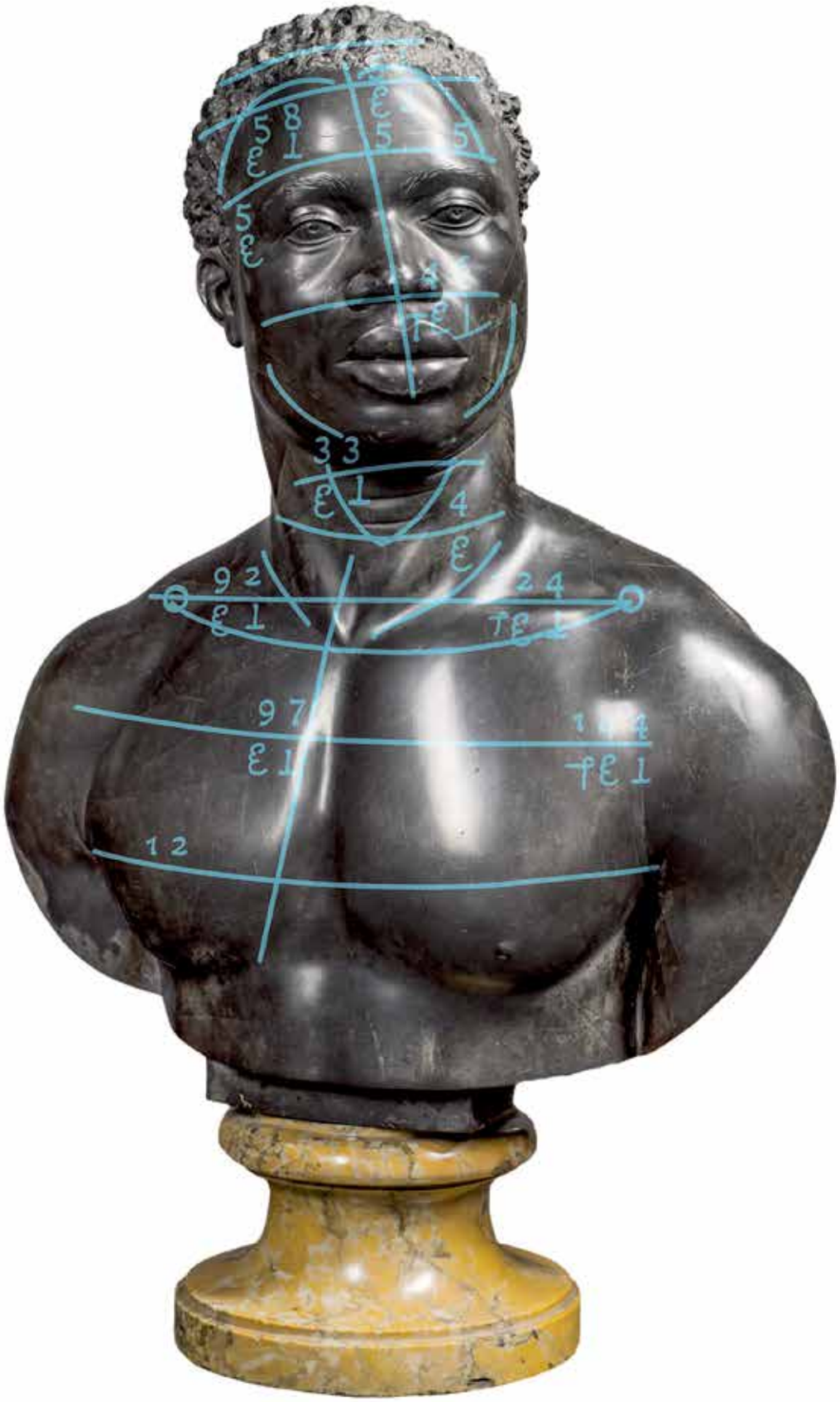
KEN GONZALES-DAY

DIFFERENT MEASURES: FROM XIPE TOTEC TO FACIAL RECOGNITION TO *SYSTEM OVERLOAD*

At the Yale University Art Gallery in New Haven, Connecticut, Alexander Calder's sculptural mobile *White Disc* (1958) is a stunning display of different colored "discs" floating around a white center. The very same color schema—white, black, red, and yellow—was used well into the twentieth century by practitioners in the arts and sciences to designate racial difference. Calder's modernist emphasis meant that *brown* had no place in his work. *White Disc* spins in slow circles above museumgoers' heads, embodying universalist claims of modernism, including socially constructed concepts of race and gender that reflect very real histories. These concepts continue to permeate institutional spaces today in subtle and not-so-subtle ways. *System Overload* (2024), my contribution to the exhibition *Counter/Surveillance: Control, Privacy, Agency*, takes the form of a sculptural mobile to foreground the relational nature of historically constructed identities and hint at the potential "collision" of art and science—without their actually colliding.

The Enlightenment project's belief in the perfectibility of humankind embraced the scientific method, but sometimes resulted in misguided conclusions. In the eighteenth century, physiognomy conflated morality with appearance. In the nineteenth century, phrenologists saw the face as a site map for criminology, physical anthropology, and pseudoscience. These practices, once considered to be rooted in scientific advancement, often resulted in the differential treatment of marginalized and non-European communities.

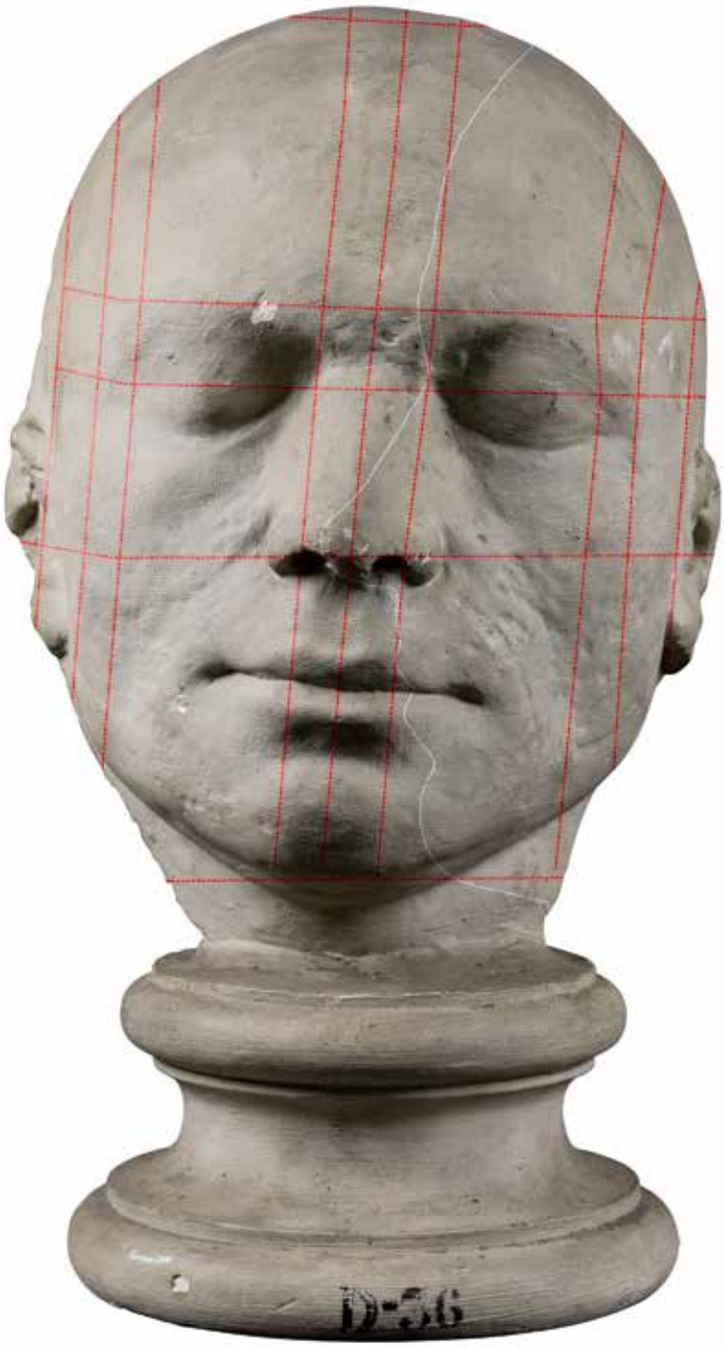
By surveying some of the many systems of measurement that have been used in fine art academies and research-based institutions, *System Overload* draws attention to the pervasive expansion of facial recognition technologies today. The work includes photographs of over a dozen museum objects that have contributed to debates about human difference. At museums and educational institutions across the United States and Europe, I photographed objects representing faces and historic systems of facial measurement. The latter include a simple cross-shaped tool used during the Renaissance to measure the face, and a complex set of horizontal and vertical lines employed by students at the Royal Academy of Painting and Sculpture in France in the eighteenth century. I have paired these photographic images with various graphic systems to draw parallels with contemporary facial recognition technologies' emphasis on common facial features.



All photography accompanying this essay is by Ken Gonzales-Day, United States

FRANCIS HARWOOD, BUST OF A MAN WITH LINEAR OVERLAY, YALE CENTER FOR BRITISH ART, NEW HAVEN, 2023

The first piece I selected to photograph was *Bust of a Man* (ca. 1758), attributed to Francis Harwood (1726/27–1783) and held in the collection of the Yale Center for British Art in New Haven. The sculpture at Yale is one of two nearly identical busts by Harwood—the second version is at the J. Paul Getty Museum in Los Angeles. Having photographed both, I continue to be fascinated by the similarities and differences between them, particularly in terms of the depiction of race and the sculptural conventions of racial stereotypes that permeated eighteenth-century Europe. The bust at the Getty has Harwood's signature; the sculptor also darkened the color of the stone to enhance it. The bust at Yale is black limestone; unlike the Getty version, it has irises carved into each eye, and its scar is more visible. These details have led scholars to assert that the figure may have been modeled after a living person. Furthermore, art historians have noted its significant difference from the racist typologies employed in earlier blackamoor figures across Europe. *Bust of a Man* is an example where individual facial features have contributed positively to the interpretation of the object and raised questions around authorship, portraiture, naming conventions, and the historical depiction of race.


D-56

DEATH MASK OF MAXIMILIEN ROBESPIERRE WITH LINEAR OVERLAY, NATIONAL MUSEUM OF NATURAL HISTORY, PARIS, 2010

The death mask of Maximilien Robespierre (1758–1794), attributed to Anna Marie Tussaud (1761–1850, a.k.a. Madame Tussaud), is an object so widely copied that it can be found in scientific collections across Europe. For his role in instigating the French Revolution and the subsequent Reign of Terror that took more than 17,000 lives, Robespierre was guillotined in Paris, in the middle of the Place de la Concorde, before a cheering mob. His death mask has been a matter of debate for centuries. Some argue that the nose and forehead of the plaster cast do not match painted depictions of him. This debate reminds me of an early technology of facial recognition, a machine called the physiognotrace, which aided in the production of silhouettes by enabling the user to trace an exact outline of the sitter's profile.

Using contemporary digital technologies, scholars recently confirmed the mask's identity by comparing the plaster cast with a drawn portrait of Robespierre made between 1791 and 1793 and held in the collection of the Château de Versailles. These scholars matched the scarring on his skin as rendered in the drawing, which would have been unknown to Tussaud, with the pockmarks recorded in the death mask.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BUST WITH PHRENOLOGICAL MARKINGS WITH LINEAR OVERLAY, NATIONAL MUSEUM OF NATURAL HISTORY, PARIS, 2010

A phrenological head from the Museum of Man in Paris, a branch of France's National Museum of Natural History, is included in *System Overload* because phrenological heads were widely distributed throughout Europe and the United States during the nineteenth century, pointing to the popularity of the pseudosciences, even if they were not always taken seriously. The idea that a person's moral character could be determined by studying the bumps on their head reinforced existing biases around race, ableness, and heteronormativity. (But the good news is, one's *amour de la vie*—"love of life"—can be determined by the size of a bump just behind the right ear!)

INDIGENOUS MEXICAN WITH LINEAR OVERLAY, NATIONAL MUSEUM OF NATURAL HISTORY, PARIS, 2010

A second bust from the National Museum of Natural History in Paris derives from a series of plasters that were meant to replicate the appearance, including skin pigmentation, of Indigenous peoples in Mexico as proof of racial difference. The bust was painted using a range of brown tones. However, these seem less than convincing from the remaining visible traces of color. Additional busts in the collection in Paris represent significant historical figures along with ethnographic collections representing individuals and groups from around the globe.

AZTEC FIGURE OF XIPE TOTEC WITH LINEAR OVERLAY, LOS ANGELES COUNTY MUSEUM OF ART, 2020

I chose to include *Figure of Xipe Totec* (The Flayed Lord) from the collection of the Los Angeles County Museum of Art (LACMA) to acknowledge that there are different ways of knowing, and to draw directly on my own ancestry. In Aztec mythology, Xipe Totec is the deity of rebirth, life, and death. Aztec peoples often represented Xipe Totec as a ceramic figure with open mouth and closed eyes, and wearing the skin of a human sacrifice. Some ceramic versions include small bulbous projections that may represent fat deposits inside skin. Stone versions on occasion include an opening in the chest cavity for human hearts, which may have been covered in the skin of sacrificed bodies. The different skin layers speak to an emphasis on renewal and rebirth, but also resonate for me in terms of thinking about scientific uses of the body.


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115
ANTROPOLOGIA CRIMINALE
STUPRATORE

NO. 115 WITH LINEAR OVERLAY, LOMBROSO MUSEUM, TURIN, 2022

The mask designated No. 115 was produced in 1888 under the supervision of Professor Lorenzo Tenchini (1852–1906) at the University of Parma. The ceroplastic-like mask now belongs to the Cesare Lombroso Museum of Criminal Anthropology in Turin, Italy, which houses a selection of masks Tenchini created using the bodies of inmates who were executed or died in prison. Cesare Lombroso (1835–1909) was an Italian physician, eugenicist, and founder of an Italian school of criminology. Lombroso and his fellow criminologists set out, with calipers in hand, to measure the human face, ultimately projecting their own biases as they sought to demonstrate the existence of "born criminals." Heads were measured, brains preserved, and materials produced for study.

Tenchini's material processes remain largely a mystery, but analysis has shown that his masks include layers of plaster, gauze, wax, and human epidermis. No. 115 invites a wider comparison between different ways of knowing, from the ancient world's ritualized use of human skin to Tenchini's misguided emphasis on skin and other facial markers in the field of criminology. Such practices reflect injurious worldviews, and today facial recognition technologies are raising concerns about the misidentification of Black and Brown subjects, enabling the continuation of racial bias in policing. Further, it is recognized that the overrepresentation of white subjects extends into the design of facial recognition technologies.

Additional works pictured in *System Overload* at the Wende Museum are from the Panama–California Exposition that took place in San Diego during 1915 to 1916, as well as figurative sculptures commissioned from Malvina Hoffman for *The Race of Mankind* exhibition that opened in 1933 at the Field Museum of Natural History in Chicago. These objects point to histories of anthropology as a research field, museological display, and the "human zoos" at World's Fairs, which all furthered the establishment, reinforcement, and institutionalization of popular misconceptions around human difference.

LENIN BUST MANUFACTURED BY ZSOLNAY CERAMIC FACTORY WITH LINEAR OVERLAY, WENDE MUSEUM, CULVER CITY, CALIFORNIA, 2020

There is not enough space here to mention all of the photographed objects in *System Overload*, so I will end with the glazed turquoise bust of Vladimir Lenin that offers a counterpoint to the other objects discussed here. This object is a stark reminder of the role Lenin's bust played in the Eastern Bloc, and it indirectly guides us to thinking about facial identification systems employed during the Cold War, when the study of human difference was prioritized at border crossings, notably Checkpoint Charlie in Berlin. The East German training materials for facial identification outlined various methods for identifying individuals attempting to cross the border. These materials' grids of physical traits such as noses, eyes, and hairlines were used to surveil individuals, while Lenin's likeness was so widely recognized that few details were needed to communicate his symbolic presence—and that of the state.

System Overload presents a cautionary view of the past and reminder to be aware of the policing technologies that continue to disproportionately impact Black and Brown communities. This artwork advocates for restorative justice models where reconciliation and restitution take precedence over punishment. Researching and photographing these contested objects in the institutions where they were housed was possible thanks to the help of many individuals across institutions, who generously shared their knowledge and willingness to engage with the past in new ways. *System Overload* literally fills our view with glimpses of the many ways that facial identification systems have informed artistic, scientific, and cultural ways of knowing. By shedding light on the past, this artwork creates a generative space to learn, to heal, and to imagine new ways of knowing.

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LIAT SEGAL

HYPERREALITY

Liat Segal, *Hyperreality* production process via custom-made painting machine, 2024, Israel, electronics, mechanic, software, data, acrylic ink on vinyl

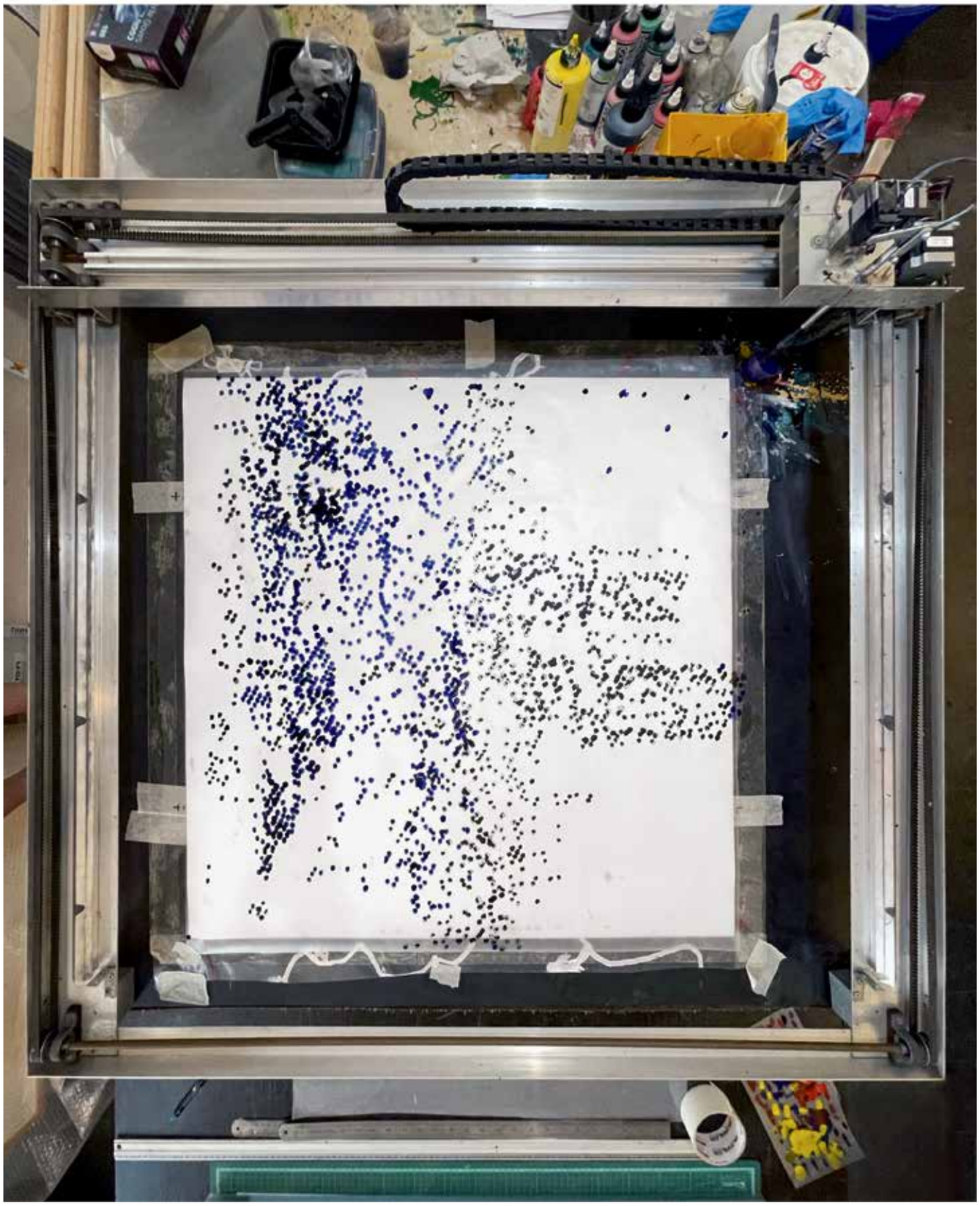
The site-specific immersive installation *Hyperreality* (2024) covers the Wende Museum's windows with layers of coded drawings, transforming the building's indoor ambiance and exterior façade. The drawings, which look abstract, originate from photographs selected to represent the identity and worldview of a single human observer: myself. Via a purpose-built painting machine, a revealing private portfolio went through a series of digital and analog manipulations and encodings to the point of unrecognizability. *Hyperreality* thus manifests fundamental human needs—for self-representation, communication, and belonging—as they are enmeshed with the deep fear of being secretly watched, monitored, and controlled. In today's digital existence, surveillance is often the price we agree to pay to satisfy our thirst for human contact. While surveillance has many dimensions, *Hyperreality* focuses on our rooted compliance with it.

In my art-making practice, I transform and materialize information into physical structures. I deal with human experience in the age of Big Data and ask questions about identity, memory, intimacy, presence, control, and communication. I observe human processes and behaviors at times of information overflow and explore the social and psychological changes brought on by the ever-rising accumulation of digital personal data.

In the past, as a computer science and biology researcher, I explored complex systems and machine learning. Today, I use technology as my artistic medium. I create with technologies regardless of their original contexts. The artwork takes form in multiple dimensionalities: physical structure, motion and mechanics, electronics, software, and data. The act of building and activating machines in my work is significant to me because the technical choices I make affect the final artwork just as much as the touch of a painter would. *Hyperreality* follows this path.

The iconic image of a spy sneaking into a dark alley, secretly watching their target, is long gone. Today we are our own spies. Data is constantly produced and collected by and on us, capturing our lives and our worldviews. An email provider knows more about a user's day-to-day life than their closest flesh-and-blood friends. A mobile phone manufacturer is familiar with a user's desires and kinks, dark secrets, and white lies (not that they have any). We are knowingly monitored, yet choose freely to share our private images, geographical locations, connections, and opinions on social media apps, instant messaging freeware, and other services. More than ever, we are under constant surveillance—if not by governments, then by commercial companies (trying to monetize us), digital followers and friends, or, occasionally, a past lover.

Police cameras installed at street corners and governmental biometric monitoring systems notoriously connote the watchful eye of Big Brother, the totalitarian authority in George Orwell's 1949 dystopian novel *Nineteen Eighty-Four*. Yet, paradoxically, people are most exposed under the assumed privacy of their mobile devices. The new normal is that commercial entities provide us



[opposite] Liat Segal, *Hyperreality* production process via custom-made painting machine, 2024, Israel, electronics, mechanic, software, data, acrylic ink on vinyl

[following spread] Liat Segal, *Hyperreality* image abstractization process (high-resolution image reduced into a collection of digital dots and flattened to a palette of a few basic colors via custom-made painting machine), 2024, Israel

with convenient services, sometimes free of charge. However, "If you're not paying for the product, then you are the product," as Tristan Harris, former design ethicist at Google, has memorably stated. The data we provide when using these services is collected and used for learning our preferences and predicting our behavior. Based on such data, we are, for example, targeted for advertisements likely to make us buy yet another product. And while that scenario is implied by the fine print of user agreements (which we never read but quickly agree to), this is not so much the case with government surveillance. Different countries have different privacy laws and ethics, yet history shows that over time governments generally increase their capacity (and will) to monitor civilians. While theoretically we can stop using a specific product, it is not realistic for most people to go off the grid or emigrate in response to slowly rising privacy breaches by governments.

Whoever the monitoring entity is, the general mechanism is similar. As we live our lives, many of us carry and use "smart" devices. In tech jargon, the smartness of a device usually refers to its autonomous computational power, ability to sense its environment, and connectivity to a network of other devices streaming information back and forth. Apart from its basic functionality, a smart device is a platform for third-party software that extends its personalized capabilities, and as such, its appeal to the user. The superpowers we may gain through smart devices come at the price of privacy, however. Multiple times daily, most of us actively agree to forfeit our privacy at the click of a button. Data collected and uploaded to the "cloud" accumulates in the mega data centers sometimes referred to as "information parks." Algorithmic analysis of this data produces insights regarding users' specific tendencies, with the aim of predicting and manipulating their behavior. Discussing some nice shoes on a messaging app will likely bring advertisements for fashionable apparel on your social media feed. The logic is simple: an engaging user experience induces more data, leading to more accurate targeting algorithms, resulting in higher revenues and an even more engaging user experience. And the cycle continues.

It may not come as a surprise that we love seeing reflections of our best selves. Of the enormous number of photos we take on our mobile devices, we select only a few to filter, beautify, and share across various media. Such images have become an inherent part of our communication and self-representation. In this sense, representation becomes our reality. Another effective engagement tactic is related to the phenomenon of "echo chambers." As algorithms learn a user's political orientation, for example, the user will likely be exposed primarily to posts shared by people with similar views. This, in turn, can shape and amplify specific voices in society, affecting one's view of reality. Within an echo chamber, without exposure to oppositional perspectives, we may feel reinforced in the belief that our views are correct and ethical.

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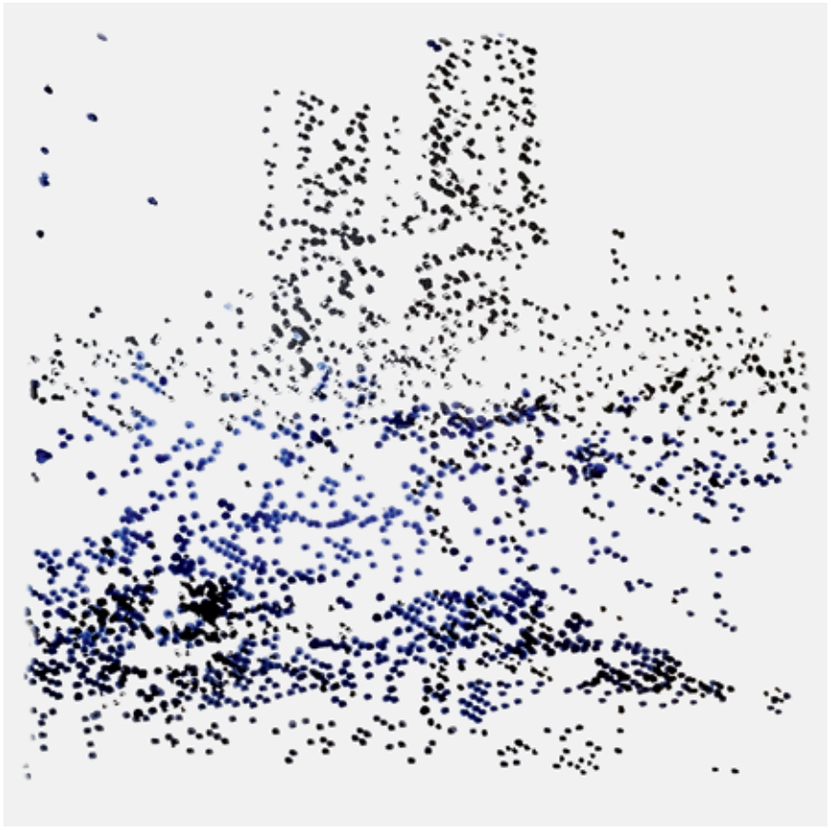

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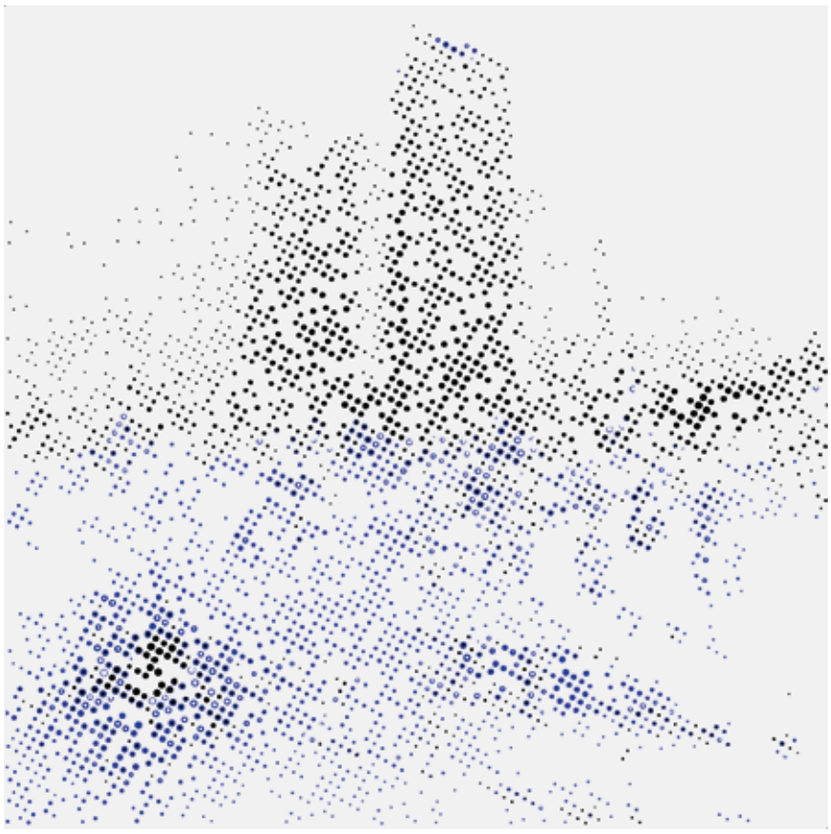

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Installation view, Liat Segal, *Hyperreality*

As these examples show, digital representations of physical reality become actual reality: the boundaries between the physical and virtual worlds blur, and the two realms intersect seamlessly into a state of "hyperreality." French philosopher Jean Baudrillard coined this term in his book *Simulacra and Simulation* (1981), observing that the contemporary world is a simulacrum. In other words, images have replaced reality to such an extent that we cannot distinguish between the real and the unreal. Hyperreality, according to Baudrillard, tricks consciousness into viewing representations as real, detaching the perceived reality from the original and making it more and more abstract.

The artwork *Hyperreality* manifests an iterative process of the representation and abstraction of physical reality. Images stored on my personal mobile device have gone through a series of filters and other digital manipulations. These representations of representations were then painted by a purpose-built machine to be returned to the physical domain. The abstract results depict realities of their own, distant from the original photos.

As an immersive installation, *Hyperreality* spreads throughout the entire Wende Museum. Drawings cover the museum windows, filtering light and casting shadows. One hundred images were selected out of hundreds of thousands taken by me or collected from my social media feed and other digital sources. Pictured among the several decades of my personal photos are everyday scenarios, special events, loved ones, and passers-by. Some photos were snapped while strolling; some document artworks; others were taken at political rallies. Some are intimate. Many are timely captures of inflammatory public issues, such as social media posts regarding judicial overhaul protests in Tel Aviv, my hometown. Some are images I wish I hadn't seen: the horrific atrocities that took place in Israel on October 7th and throughout the war in Gaza and Israel in the months that followed. Some are photos of my newborn son. Choosing a single image out of every thousand stored was a subjective and tedious process. I tried representing the essence of my world as seen through my eyes. The final collection may be an informative depiction of my environment, connections, beliefs, and personality.

After I chose a specific image, it went through a series of digital manipulations. The original high-resolution image was reduced into a collection of dots that partially encapsulate the nature of the image. Filtering algorithms manipulated the colors of the image. Inspired by stained glass windows, I reduced and flattened the color depth of the original image to a palette of a few basic colors. The processed results were then encoded into a set of machine-readable instructions, which were fed into a large painting machine that I developed and built. The machine drew using a paintbrush on a ground of semi-transparent medium, pumping ink into the paintbrush while electric motors set its trajectory according to the provided instructions.

This machine is not an "off-the-shelf" product. In developing and building it, I did not aim to optimize precision and efficiency

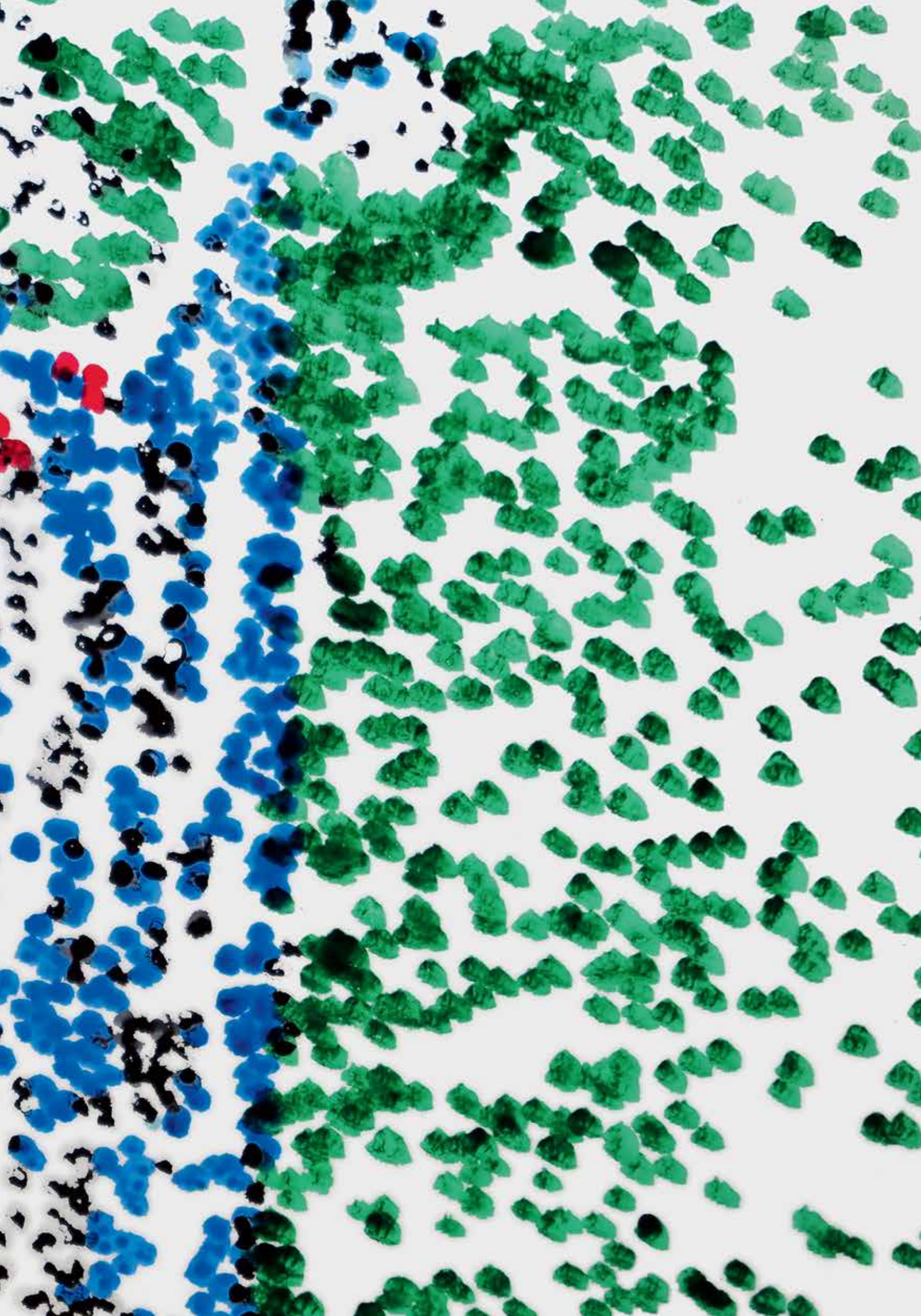
[following spread] Detail of
Liat Segal, *Hyperreality*

to match industrial standards. The distinct pattern of the paintbrush's fibers remains visible in the drawings, and random ink drops cause spots here and there on the finished surface. In this sense, randomness is a welcomed feature of the machine. In my view, mechanical glitches give the machine's output something of a human touch. Had there been too much or very little randomness, the result would have felt chaotic or mechanical, respectively. Interestingly, the right balance between control and randomness gives a drawing a human flavor. While the final abstract drawings of *Hyperreality* originate in data, they induce, I think, an uncanny feeling of being both mechanical and human. As they represent data, the abstract-looking drawings may be considered figurative, portraying something "real." A materialized representation of representations, far from the original. A hyperreality.

The drawings' installation on the Wende's windows effects a resemblance to cathedral glass. In religious contexts, stained glass windows tell biblical stories in brilliant colors, casting light and doctrines upon a congregation. It could be argued that in such contexts representations of stories and ideas become stronger than material reality, becoming actual reality, or, again, hyperreality. Religious symbols are so dominant that a believer may even forget they are symbols. Wars have started and lives been sacrificed over such symbols. This suggests that these symbols have meaningful functions, serving primal human needs and tendencies.

Nowadays, Big Tech transmutes some of the most ancient pillars of humanity: identity, community, and influence. While religion and Big Tech seem to be of opposing cultures, their mechanisms and roles in human lives are not necessarily far apart. Whether in the context of religion, governance, or technology, hyperreality is used as a tool for increasing devotion and engagement. These systems are optimized to make individuals believe they are deciding and acting of their own free will, while, in fact, they are being surveilled and manipulated. In a tradition-inflected hyperreality, people are constantly under God's watchful eye and confess their sins to achieve redemption. In the new Big Tech version, individuals choose to share their data to feel a sense of self-worth and communication.

Orwell's *Nineteen Eighty-Four* ends with a heartbreaking acceptance by its protagonist: "But it was all right, everything was all right, the struggle was finished. He had won the victory over himself. He loved Big Brother." In today's global political climate, as concerns about encroaching totalitarianism are growing, Orwell's novel is more relevant than ever. If we freely choose to hand our privacy over to the Big Brother in our pockets, privacy may be less important to us than we would like to acknowledge. If humans repeatedly prefer hyperrealities to the immediate physical world, perhaps the former have intrinsic values that make them worthwhile. Rather than opposing them, observing these human tendencies may teach us something about the fundamental human needs they serve.



CONTRIBUTORS

Marieke Drost is a historian of science and freelance researcher specializing in the histories of technology and culture, with a special interest in biometric technologies. She has worked as a science journalist and radio producer for broadcasting companies in the Netherlands.

Ken Gonzales-Day is an artist whose interdisciplinary practice considers the historical construction of race and the limits of representational systems. He holds the Fletcher Jones Chair in Art at Scripps College in Claremont, California, and serves on the Board of Directors for L.A.C.E. (Los Angeles Contemporary Exhibitions).

Paul Reuvers and Marc Simons are the co-founders of the Crypto Museum in Eindhoven. Both are also electronics engineers. Reuvers works on technologies of embedded software and user interfaces. Simons focuses on the development of circuitry. They recently collaborated on developing an intelligent agricultural weed-control system.

Joes Segal is Chief Curator and Director of Programming at the Wende Museum, where he has organized more than thirty exhibitions and numerous programs. He is the author of *Art and Politics: Between Purity and Propaganda* (2016) and co-editor, with Peter Romijn and Giles Scott-Smith, of *Divided Dreamworlds?: The Cultural Cold War in East and West* (2012).

Liat Segal is a contemporary media artist whose practice fuses art, science, and technology and observes human existence in an age of Big Data. Her works materialize the digital through the use of software, electronics, mechanics, and information as her artistic mediums. Segal's artworks have been exhibited in museums and galleries worldwide, on Earth, and in outer space.

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[front cover] From teaching materials prepared by Major Seifert, senior assistant at the Institute for Criminalistics, and Second Lieutenant Berndt, clerk for personal identification, Ministry for State Security of the GDR (Stasi) Law School, Potsdam, 1967, East Germany. Collection BstU (Stasi Archives). Photo courtesy of Stasi Media Library, BstU (Stasi Records Archive)

[back cover] Gerhard Lang, from the series *Palaeanthropical Physiognomy*, 1991–1992/2024, Germany, print on dry plate. Courtesy of Gerhard Lang. Photo © 2024 Gerhard Lang / Artists Rights Society (ARS), New York / VG Bild-Kunst, Bonn

[front flap] Graham Fink, from the series *Drawing with My Eyes,* 2015, United Kingdom, Tobii Eye Track software renderings printed on A3 paper. © and courtesy of Graham Fink

[back flap] Gerd Scherm, mail art to Robert Rehfeldt, 1975, West Germany, stamps on handwritten letter. Courtesy of the Mail Art Archive of Ruth Wolf-Rehfeldt and Robert Rehfeldt, ChertLüdde. © Gerd Scherm. Photo courtesy of ChertLüdde

[front inside flap, both] Hand-drawn facial recognition images and notes, Checkpoint Charlie border guard training materials, 1975–1989, East Germany. Collection Wende Museum. Photo courtesy of Wende Museum

[back inside flap, left] Anthro Art (Volker Hamann), *Africa Arise*, 1988, West Germany, booklet. Courtesy of the Mail Art Archive of Ruth Wolf-Rehfeldt and Robert Rehfeldt, ChertLüdde. © Anthro Art (Volker Hamann). Photo courtesy of ChertLüdde

[back inside flap, right] Asya Dodina and Slava Polishchuk, *Is Anyone Listening or Am I Talking to Myself?,* 2011, United States, mixed media on canvas. Courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation. © Asya Dodina and Slava Polishchuk. Photo courtesy of Kolodzei Collection of Russian and Eastern European Art, Kolodzei Art Foundation

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