Discursive and dialogic interfaces, panoptic power and "penetrative technologies" in Denis Villeneuve's *Blade Runner 2049*

Sebastian Jakub Konefał

University of Gdańsk
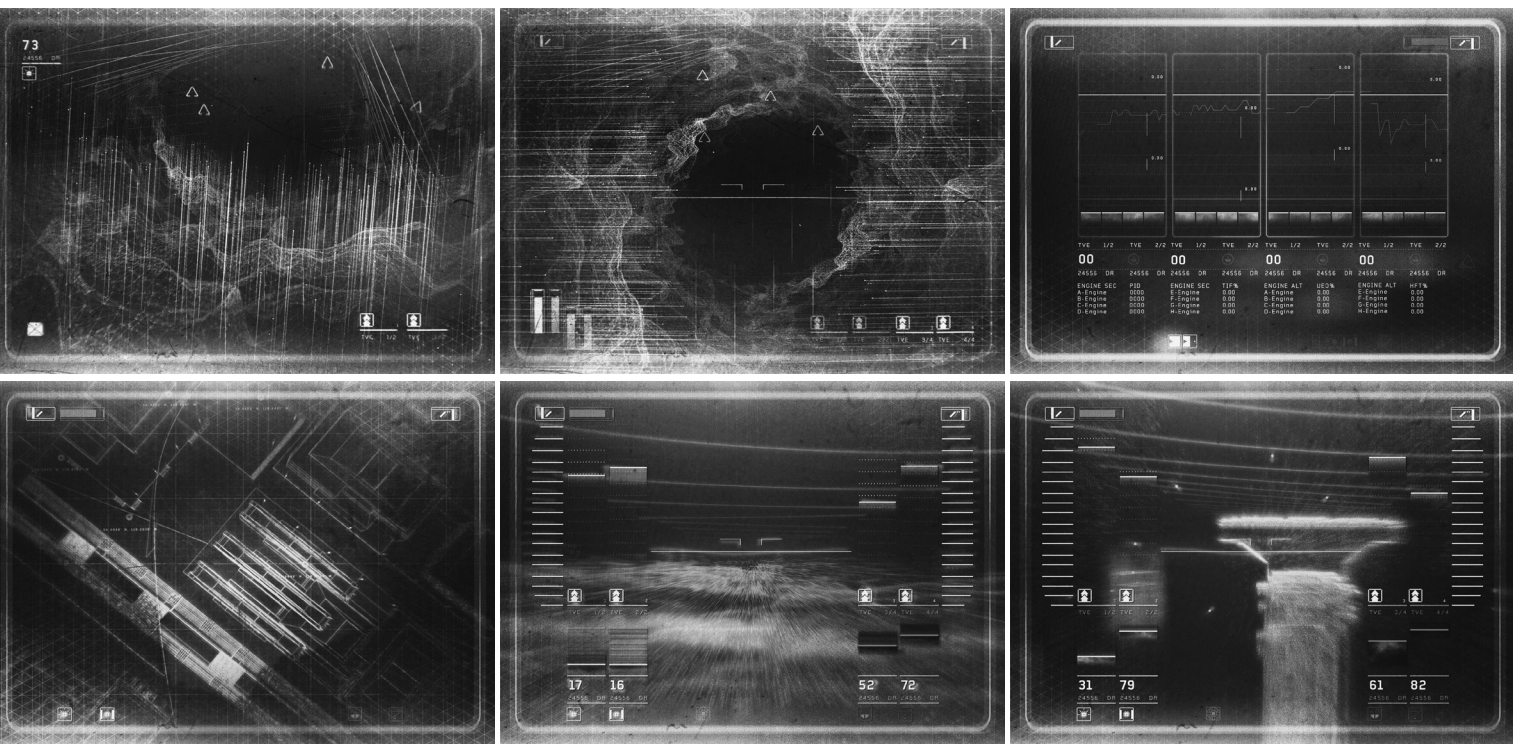
> The power to envision is the power that sets out to make concrete sense of the abstract and absurd universe into which we are falling[1].

Introduction: Input/Output

The world depicted in Ridley Scott's *Blade Runner* (1982) is one of the most immersively designed cinematic universes. Apart from the evocative sets that encompass entire streets and the outstanding costumes, the designs associated with certain technologies also played a major role in the creation of a dystopian future. Many of their interfaces were linked here to visual perception, for "ocularcentrism" (and a reflection on image culture) are among the film's dominant visuals. The replicants, copies without originals endowed with other people's memories, and figures of people addicted to the "dictatorship of visibility" locate the technological reflections from Hampton Fancher's script in the spaces of Jean Baudrillard's then-popular theories (including the famous simulacrum)[2]. However, among the alienating relations of humans with their technological creations omnipresent in R. Scott's work, we also find examples of transcending reflections on the postmodern aesthetics of the emptiness of signs and the ubiquitous precession of *simulacra*.

1. Control panel interfaces of the police spinner from the film *Blade Runner 2049.* Photos from: J. Yuen, *"Blade Runner 2049" – UI Design*, https://www.hudsandguis.com/home/2018/blade-–runner-2049 (access date: 2.01.2024)

[1] **V. Flusser**, *Into the Universe of Technical Images*, Transl. N. A. Roth, Introd. M. Poster, Minneapolis 2011, p. 37.

[2] One of the first interpretations of postmodern elements in *Blade Runner* is the article: **G. Bruno**, *Ramble City: Postmodernism and "Blade Runner"*, "October" 1987, No. 2.

[3] This scene can be interpreted as an invitation for the interpreter to abandon the postmodern perspective and embark on a search for ontological themes in the film.

[4] **P. Zawojski**, *Człowiek i aparat. Viléma Flussera filozofia fotografii,* http://www.zawojski.com/2006/04/19/czlowiek-i-aparat-vilema-flussera-filozofia-fotografii (access date: 21.11.2023).

[5] *Glossary*, Ed. **A. Müller-Pohle**, **B. Neubauer**, "European Photography" 1992, No.2,https://equivalence.com/vilem-flusser-glossary (access date: 3.04.2024). **P. Zawojski** (*ibidem*; quoted from: **E. Bonse**, *The Adventure of the Future: Vilém Flusser's Last Interview*, "European Photography" 2001/2002, nr 2, p. 13) adds that Flusser also distinguishes between tool, machine and apparatus: "A tool is a device that functions dependent on a human. A machine is a device whose functioning makes a human being dependent on it, so it is a reverse relation. An apparatus, on the other hand, is a device in which the relation between a human and a device is reversible". I will, however, replace in the text the Flusserian term "functionaries" with the Derridean "Archons", which are more telling for the subject matter under study. At the same time, for stylistic reasons, I will treat the nouns "machine" and "device" synonymously here. See also **J. Derrida**, *Gorączka archiwum. Impresja freudowska*, Transl. J. Momro, Warszawa 2016, pp. 1-3.

[6] See **V. Flusser**, *op. cit.*, pp. 29-30, 61-68.

One of the more memorable scenes related to a perspective closer to ontological exploration (alongside the famous humanity test) is the moment when the protagonist uses a machine with the enigmatic name Esper to carry out a visual investigation. A voice-reactive automaton, designed by the set designers as a hybrid of a CRT screen and an "image scanner – video recorder", here analyses a Polaroid photograph, searching for and magnifying the indicated areas. After a while, the device crosses the boundaries of the mirror captured in the photograph and reaches, at an "impossible angle", a weighty clue[3]. Which in turn leads the futuristic detective to another clue in his investigation on the escape of a group of post-humans, who have arrived on Earth to meet their creators from the omnipotent Tyrell Corporation. Intertextually referencing a key scene from Michelangelo Antonioni's *Blow Up* (1966), the sequence of penetrating a paper photograph in 3D seems to be a successful attempt to visualise the idea of technology reaching beyond human perception and accessing the impossible, interestingly correlating with the theses of Vilém Flusser, among others. The latter referred, among other things, to the notion of telematics, which Piotr Zawojski writes on:

is a technology that enables, generally speaking, to convert the discursivity of present technical images, based on formal algorithms […] into dialogical forms, that is, forms that enable two-way communication[4].

Its agent is an apparatus:

A toy that simulates thought and is so complex that the person playing with it cannot comprehend it; its game consists of combinations of symbols contained in its program; while fully automated apparatuses have no need of human intervention, many apparatuses require humans as players and functionaries[5].

For Flusser, the study of the specificity of apparatuses and their impact on the ontic perception of the world is the starting point for a reflection on the role of technology in our lives. Technology should, in his view, be dialogical, i.e. allowing us to transcend the enslaving power of discursive media (such as the press, theatre or cinema, which, in Flusser's view, cement social hierarchies), enabling a gesture of openness to genuine dialogue and freedom[6].

It is not without reason that in Antonioni's and Scott's films, it is photography that is the intermediary communicating their protagonists with the in(re)cognizable. Flusser, after all, built his theories starting from what he believed was the first interactive device – the camera. According to Flusser, "only with the help of photography, film, television, video, and in the future above all computer-synthesised images, will we be able to return to tangible experience, rec-

ognition, value and action, moving away from the world of abstraction"[7]. The *Blade Runner* sequel, directed by Denis Villeneuve, will expand this set with futuristic references to other optical apparatuses linked to the mission of penetrating aspects of being invisible to human eyes – notably microscopes and binoculars – also mentioned several times in the writings of the author of *Into the Universe of Technical Images*.

In addition to these, the cinematic interface designs discussed here will utilise simulated images of scans obtained through the use of different types of waveforms (connoting the contemporary relationship of humans with devices such as ultrasound, X-ray, sampler, oscilloscope or radar). At this point I would also like to point out that in my text I use the term interface following the model used by the pioneers of cybernetics: Vannevar Bush, Norbert Wiener and Joseph Carl Robnett Licklider. Their research was concerned with laying the foundations for communication between humans and machines (and also animals). So, when using the term interface – I am referring to a software or device "translator" – communicating between people and technology products.

Unfortunately, most of the technologies and associated UIs from the first and second parts of *Blade Runner* have been portrayed as Flusserian **discursive** machines – making users dependent on them and sustaining the panoptic power that is a pillar of this dystopian world[8]. For *Blade Runner*'s universe is a space of technological inequality and surveillance. In the vision of the sequel, this surveillance even reaches into realms inaccessible to human perception on a mega-scale (tracking from spy satellites and the activities of large corporations in space) as well as on a nano-scale – combining various forms of scanning, searching, collecting and selecting digital and biological information. Knowledge itself is a precious commodity here, giving and sustaining power. Its acquisition is specialised in Villeneuve's film by, among others, blade runners, who could also be called – this time – "data hunters".

The Flusserian category of **dialogicity**, on the other hand, will be linked in the film's plot to post-humans. Their figures, as biological-technological hybrids, are examples of the most refined, personalised bio-hybrid neural interfaces[9], which, thanks to their unique characteristics, guide selected representatives of the homo sapiens towards the unknown and the unknowable. And it is to the post-humans and their associated dialogical and discursive interfaces from Denis Villeneuve's 2017 film that I will devote the following text. I will base my analyses and interpretations on selected texts by Michel Foucault, Jacques Derrida and Vilém Flusser, as well as statements by the designers of special effects and set design for *Blade Runner 2049*.

[7] *Ibidem*, pp. 37–38.

[8] The dystopian concept of the panoptic world from the *Blade Runner* franchise (which now consists, alongside the films, of comic books, video games, an anime series and books) is an extension of the universe created by Philip K. Dick in his novel *Do Androids Dream of Electric Sheep*, published in the US in 1968.

[9] See e.g. **P. Lunenfeld**, *Generacje: jak komputer stał się maszyną generującą kulturę*, [in:] *Mindware. Technologie dialogu*, Ed. **P. Celiński**, Lublin 2012, pp. 40–50.

[10] Timothy Morton's theory of hyperobjects assumes the existence of eco-annihilation objects, the perception and understanding of which is made much more difficult, if not impossible, for humans. See **A. Barcz**, *Przedmioty ekozagłady. Spekulatywna teoria hiperobiektów Timothy'ego Mortona i jej (możliwe) ślady w literaturze*, "Teksty Drugie" 2018, No. 2, p. 78. See also **T. Morton**, *Hyperobjects: Philosophy and Ecology after the End of the World*, Minneapolis-London 2013.

[11] **I. Failes**, *A Visual Journey through the Screen Graphics of "Blade Runner 2049"*, https://vfxblog.com/2017/11/08/a-visual-journey-through-the-screen-graphics-of-blade-runner-2049 (access date: 21.12.2023).

[12] **P. Frelik** (*NeoCYBERliberalPUNKizm – polityka i ideologia cyberpunka*, "Teksty Drugie" 2021, No. 6) rightly points out that some of the effects of the climate catastrophe depicted in the film do not harmonise with actual data related to, e.g., the study of the greenhouse effect. The uchronic universe of *Blade Runner* remains faithful to Philip K. Dick's literary ideas, where instead of a warming climate, there is its radical cooling and people's lives are threatened by radioactive fallout. However, between Dick's and Scott's visions, the sequel's scriptwriters have additionally woven in references to the real-life dangers of climate change – such as i.a. food and water shortages, floods or extreme air pollution.

The twilight of the Anthropocene and the art of interface design

One of the central themes that separates the cultural and economic paradigms (as well as the ways in which interfaces are designed) of the universe from Ridley Scott's film and its sequel is the so-called black out. The backstory of this event was presented in a short anime directed by Shinichiro Watanabe to announce the release of the *Blade Runner* sequel. Forming part of three online paratexts, the film *Blade Runner 2022: Black Out* depicts the origins and course of a terrorist operation undertaken by a group of replicants to undermine the system of capitalist exploitation of post-humans. It results in the destruction of all electronic devices and the loss of most of the Earthlings" digitally archived cultural heritage. The successful attempt to erase the "collective memory of humanity" in the *Blade Runner* sequel thus grows into an intriguing act of revenge, involving an attempt to equalise the status of the homo sapiens species and the replicants – industrially manufactured beings whose emotional stability was ensured by fabricated memories. The hyperobject[10] of "total blackout" will also prove defining for the further technological development of humanity in the *Blade Runner* universe. Therefore, the staff at UK-based Territory Studio, hired to create the visualisation of the devices from the world of *Blade Runner 2049*, had, in their visualisations of the futuristic equipment, to emphasise the technological break caused by the incident of Earthlings being cut off from the ability to use electricity:

> Words that Denis used to describe what he wanted included: "abstract, organic, optical, physical".
> We ended up with an extremely experimental approach – never tied to CG, the R&D process involved looking at alternative interface technologies, at optical and physical effects and layering of textures that suggested age, dilapidation and a different path [of technological development – S. J. K.][11].

Paradoxically, however, while the cinematic ideas for GUI visualisation and the presentation of alternative materials for screen creation can be considered original, the formulas for the operation of "post-apocalyptic" interfaces themselves are not fundamentally different from those we know today. For in *BR2049*, voice and gesture-based interfaces and on-screen graphical operating system interfaces dominate. Several times, technologies supported by holograms and augmented reality and also neuro-interfaces also appear here. Interestingly, Villeneuve's vision of a society living at the end of the Anthropocene[12] omits almost entirely the idea of communicating with more technologically advanced machines by means of haptics (used only once in the scene of ordering food in a street fast food outlet). In this way, the creators probably wanted to emphasize the trauma of humanity associated with the black out experience, manifested in the loss of "tactile trust" in technology.

[13] **I. Failes**, *op. cit.*

[14] **J. Derrida**, *op. cit.*, pp. 1–7.

The interfaces of the information-seeking (or information-processing and storage) devices themselves also had to change their appearance after the "total blackout", as some of them began to act in the new world as guardians and functionaries of the valuable salvaged knowledge. The results of the Territory studio's work proved intriguing in this field. As many of the interfaces shown in the film not only do not resemble those of the first part, but also creatively reinterpret the conventions of showing futuristic UIs from science fiction cinema:

> We looked at the microcapsule technology used in E-Ink displays and advancements in bioluminescence, to see how colour and what palettes can be achieved in the absence of LED screens.
> To achieve "physicality" and organic textures, we brought in optical lenses, old school projections, microfiche, and rolodex cards and other stuff to the studio. Even fluids, fruit and meat products were dissected and photographed[13].

It is significant, however, that the detective work of the film's protagonist, Officer K (played by Ryan Gosling), is ordered to him by the police not to compile scraps of hidden and destroyed knowledge to "unravel the mysteries" of the first part of the dilogy, but is ultimately intended to lead to another little black out, because (according to his superior) revealing knowledge of the psychic and biological similarities between humans and replicants would contribute "to the collapse of the wall" separating the homo sapiens from its futuristic creations. A posthuman revolution would also threaten the memory rulers at whose behest the protagonist unwittingly acts – invigilated and exploited in various ways by the police and Wallace's all-powerful corporation. I will refer to both of these apparatuses of biopower here by the borrowed Greek term "Archons", used by Jacques Derrida in his *Archive Fever*[14]. Significantly, they are represented in Villeneuve's film not only by their associated humans and replicants, but also by futuristic data archives and their interfaces. The struggle to maintain the status quo guarantees the Archons an unequally hierarchical world where advanced technologies are only available to a select few. As Jono Yuen rightly notes in his analysis of the special effects associated with the UI in *BR2049*:

> As a result the UI designs can be broken down based on different class structures. Wallace Corporation, the leading technological super power in the film, have the most advanced technology and their UI design is the most elegant and minimalist of the lot. The system used by the LAPD is much less advanced, but still much better than what the general public has access to. They are a bit clunky and gritty in comparison to the Wallace UI. Then there's K's spinner, which is dilapidated and barely functional and helps re-enforce K's low status as a Blade Runner.

[15] **J. Yuen**, *Blade Runner 2049 – UI Design*, https://www.hudsandguis.com/home/2018/blade-runner-2049 (access date: 21.12.2023).

[16] This is how "flying cars" are called in the *Blade Runner* universe. Philip K. Dick used the term "hoovercar" in his novel.

[17] **RocketStock**, *The Near-Future Design and Surprising Influences behind Sci-Fi UI*, https://blog.pond5.com/54667-computer-screen-design-territory-films (access date: 21.12.2023).

This approach to UI design helps provide context to the story and adds depth to the characters[15].

The protagonist's fictional journey through successive data archives and his interactions with various devices in order to solve the investigation assigned to him thus becomes not only a mission to find the truth about events from thirty years ago. It is also an attempt to map the structure of a futuristic hierarchy of the world, ruled by the masters of technocratic desires and the guardians of memory and knowledge, whose omnipotent power does not differ so much from the realities of our lives, which are increasingly dependent on the providers and creators of modern technology.

Part I. Police access and "penetrative interfaces"
Let us therefore move on to an analysis of the film. The very first minutes of the introduction to the plot reveal the unusual integration of the main character with the machines he operates. We see here the procedure of awakening the post-human through the apparatus of a flying vehicle. On one of the screens of the self-propelled spinner[16], the protagonist's face appears and a moment later it is "activated" by means of a sound signal (so that we also know immediately that we are dealing with a replicant). In one of the interviews, the creators of the vehicle's GUI designs reveal that:

> To convey age and disrepair we designed interfaces with warping, ghosting and colour degradation, adding glitches and surface textures to suggest an out of date technology that has seen a long and rough life.
> The LAPD's technology in 2049 is functional, with clear military references. Navigation screens blend geographic details with minimalistic iconography. The geometric detail of the black and white scans sent from the pilotfish drone contrast sharply with cockpit displays, reminding the audience of advanced capability in **surveillance** and **reconnaissance** [emph. S. J. K.][17].

A moment later, we watch the exposition of a technological extension of the vehicle's reconnaissance tools – a police drone, controlled by voice and gestures, which detaches itself from the futuristic car and begins to scan the surrounding area. Meanwhile, K himself is concerned with establishing the true identity of the escaped replicant, Sapper Morton (played by Dave Bautista). The final proof of this character's post-human nature is a retinal scan, one of many visual references to the panoptic power system of the futuristic society. Circumstantial evidence from this procedure (and from the entire course of the search of the farm) immediately goes into the police archive. Information about the killed replicant also appears on a screen placed in the vehicle the detective is travelling in.

The spinner is operated through the screen, where applications are put for scanning and also for communication, navigation and linking to databases. Their GUIs include gyroscopic scales, divisions and graphs, and various types of wave visualization, as well as collections of numbers and letters, presumably related to analysing and collecting all kinds of information. The blue backgrounds used by the designers bring to mind spy and medical technologies, reminding us of the historical entanglement of many contemporary interfaces in military C3I systems for command, control, communication and reconnaissance[18] [Fig. 1]. By the way, this type of colour combinations will appear in several other scenes in the film, emphasizing the protagonist's participation in the "war for knowledge".

Curiously, communication with police staff and reporting work here is done in a rather traditional way. K dials the video call by voice and the report of the search and intervention scene is written down on some futuristic equivalent of e-paper. Other procedures, however, are already a little more complicated. The eye of the killed replicant, scanned in the vehicle, activates a screen placed in the spinner, showing Sapper Morton's data. A panel layout of the displayed content is used here, and its graphic designs (which include, among other things, fingerprints), resemble a photographic film in their colour scheme and transparency effect. While photographs of subsequent suspects can be scrolled through using animation, in a manner reminiscent of classic police records and library cards.

In this several-second exposition of the interface, the inquisitive viewer will also catch a number of elements highlighting the panoptic nature of law enforcement. In addition to information on the gender, models and appearance of the individuals sought, the top part of the GUI includes medical records with mini-scans that look like maps of brain activity. Such a profound intrusion of penetrating, recording and archiving apparatuses perfectly illustrates the functions of panoptic power, as described by Foucault in his monograph *Discipline and Punish*. Power, according to the French thinker, is exercised in this type of system by means of, among other things, classification, which subjects the behaviour and psychological portraits of individuals to in-depth analysis. Here, Foucault invokes a schema that he describes as "tabular"[19]. It involves a strategy of ordering, categorising and cataloguing, aimed at minimising differences and assigning to fixed patterns. This type of action, in turn, is an act that reinforces the correlation of discourses of knowledge and power. "Tabular schema" thus contributes to the "production of knowledge" by the apparatuses of power[20], reinforcing the **discursive** nature of the technologies used in the film.

Another activity from the ground search scene, related to environment and information management and the discursivity of interfaces, will be a "deep scan" of the surface, performed by a police drone, through which K will discover mysterious remains. Presented

[18] See **P. Lunenfeld**, *op. cit.*, pp. 39–40.

[19] **M. Foucault**, *Nadzorować i karać. Narodziny więzienia*, Transl. T. Komendant, Warszawa 2020, pp. 220–221.

[20] *Ibidem.*

[21] **M. Kostyszak**, *Istota techniki. Głos Martina Heideggera*, Wrocław 1998, pp. 53–85.

[22] The topic of neo–liberal themes in Villeneuve's film is addressed, i.a., in the articles: **K. Marshall**, *Mere Data Makes a Man: Artificial Intelligences in "Blade Runner 2049"*, [in:] *ReFocus: The Films of Denis Villeneuve*, Ed. **J. English**, **M. Pascal**, Edinburgh 2023; **P. E. Wegner**, *We, the People of "Blade Runner 2049"*, "Science Fiction Film & Television" 2020, No. 1..

on screen, the procedure is controlled by finger gestures and the user's voice, determining the maximum depth of ground penetration. The actions of the machine are again observed on the spinner's monitor, but this time reproducing a three-dimensional image of the analysed interior of a tree and the secrets hidden under its roots, which are identified by a graphic distinction from a very raster and grainy image. Thus, the very opening scene of the film, associated with the discovery on a protein farm of the remains of the characters from the first part of the dilogy, alludes to the Heideggerian postulate of the humanisation of technology in the service of the investigation of truth[21] and the Flusserian dream of the **apparatus of dialogicity**. After all, Rachel's remains, buried in the roots of a dead tree, are found here thanks to the fusion of the extended cognitive processes of Officer K's artificial intelligence and the panoptical power of the scanners that have been installed in the police equipment. But the trouble is that the technologies used in the vehicle do not serve **dialogicity** (understood as the pursuit of emancipation and freedom), but surveillance and gaining superiority in the war for data. With this attitude, the *BR2049* screenwriters join the technophobic anxieties plaguing many philosophers about the development of technology and the sum total of neo-liberal anxieties, already present in the prose of the author of the literary original of the universe and particularly developed in *Blade Runner 2049*[22].

The next fragment of the film, related to the theme of searching, scanning, assembling and storing knowledge, is a scene set in a police laboratory. The creators of the script and the futuristic setting have conceived the place as a storehouse of data and physical evidence. It is not, however, an archive familiar from classic crime narratives, that is, full of files, shelves and defenders of the law wandering around, overwhelmed by their work. It is rather a "medicalised space" straight out of Michel Foucault's *The Birth of the Clinic*, closer in its concept to the spatial creations of procedural series that have also been fashionable in Poland for some time. After all, it gathers not only crime data, but also the dead bodies of crime victims and other, more "trace" remains of people – such as bone fragments or teeth and hair.

Moreover, it could also be argued that this is another space serving the idea of panoptic control of society, where the secrets of the bodies of dead beings are subjected to various forms of "digital archiving" – scanned, segregated and stored using computerised apparatus and audiovisual tools. It is also noteworthy that, yet again in Villeneuve's film, it is the eye and mind of the post-human that pick up a significant trace in the investigation that is initiated. This time it is a code engraved on the tissues in nano-script, which contains the letters N7, indicating that the deceased was a replicant, belonging to the Nexus 7 generation that rebelled against their creators. It is also significant that the panoptic interfaces and associated devic-

es in the LAPD lab scenes have a strongly retrotopic feel. The two screens on the stands, in fact, resemble old CRT monitors, and the circular-framed images they display are reminiscent of eye-testing devices. However, the spherical structure of the images displayed on them makes it possible to rotate the scans in 3D and (thanks to the close-ups) to explore deeper and deeper – in this case penetrating as far as the bone structures. The association with ophthalmic equipment is by no means coincidental. Peter Eszenyi, responsible for designing the interfaces of, among other things, the "morgue" scene[23], recalls that during the process of conceptualising the special effects for the film:

> the first idea that occurred to me was this childhood experience at the opticians. The moment when, thanks to the interplay of the lenses my vision suddenly unblurred and that is where the inspiration for the morgue sequence came from. Studying some low light fishtanks with deep sea creatures helped to drive the design further. As a starting point a crudely modelled thigh bone was created, we used that to establish the idea, play with the shapes and framing and when we got the relevant beats from the art department I finalised the hero female pelvis. I experimented with the optical qualities of the lenses in different ways, making them scratched, changing the index of refraction, the thickness and other parameters. After a bit of experimentation I figured the best way to achieve the optical look is to render the bone sequence separately and apply it as a texture to thin layer of glass. This way I could put a light behind it and achieve something even more analogue that way[24].

Interestingly, the framing in the analysed scenes is directed in such a way that we do not see the manipulators used to control this "post-X-ray" device. Whereas a detail discovered during the process of "technological immersion", which turns out to be the next important lead for the investigation, is here carefully mapped and highlighted. Through such visual treatments, the aforementioned procedures deepen the impression of interacting with technologies that can generate hidden truths out of the chaos of abstraction.

A similar effect was also achieved in the interfaces of the next database, related to penetration into areas invisible to the human eye. We are talking about the DENABASE, the database of genotypes that K visits in one of the subsequent scenes from the film. For in the next scenes, the archive investigation take place on an even deeper level of "penetrating the invisible". Accompanied by his hologramic girlfriend, K browses through the DNA database of Wallace's corporate creations in an attempt to find traces of a genetic anomaly that could lead him to the identity of the child kept hidden by the replicants. In turn, the moment of searching the DENABASE corresponds in an interesting way with the aforementioned photographic sequence from Ridley Scott's film, in which Deckard, thanks to advanced technolo-

[23] The term "morgue" was used in the materials on the creation of the film. See **T. Lapointe**, *"Blade Runner 2049": Interlinked: The Art*, London 2020, p. 90.

[24] **P. Eszenyi**, *Portfolio*, https://petereszenyi.com/portfolio/blade-runner-2049 (access date: 21.12.2023).

[25] P. Zawojski, *op. cit.*

[26] In visualising this interface, another company specialising in computer–generated special effects (CGI) – the US–Canadian Cantina Creative – also helped. Its employees' designs for the film can be viewed on: *"Blade Runner 2049": Screen Graphics*, https://cantinacreative.com/film/blade–runner–2049 (access date: 21.12.2024).

[27] I. Failes, *op. cit.*

gy, reached "deep into the Polaroid photograph" in order to find the hidden clue necessary for the continuation of the investigation. The *BR2049* cinematic visualisations of interfaces from this scene allude also again to Flusserian epistemological tools – "for cognition, speculation, presentation", "derived from the line: water surface – magnifying glass – microscope – telescope"[25]. Indeed, the device used by K and Joi resembles a microscope or some other optical apparatus in its appearance. The originators[26] of this design mention that what we see on the screen is:

> The DENABASE is a DNA data base. A huge machine, it contains an archive of individual DNA cards. We looked at different card systems to get a sense of what felt physical and could support the in camera shot and performance that Denis wanted for that story beat.
>
> We referenced microfiche systems that you sit in front of, look into and can physically scroll through.
>
> […]
>
> […] The suggestion of technological advancement lies in the voice command functionality, and the repeated error message in Japanese suggests a reliance on old decrepit technology. The UI feels functional and out of date. Together, all this sets the stage for displaying K's superior cognitive abilities as he manually reads hundreds of cards until he finds what he's looking for[27].

And it is, of course, the posthuman, once again in the film, who reaches the truth hidden behind the abstraction of the interfaces at the end of the DENABASE scene. The superhuman status of the information seekers, moreover, is wittily commented on by K and Joi during their work: "Mere data makes a man, A and C and T and G. The alphabet of you. All from four symbols. I am only 2: 1 and 0. Half as much but twice as elegant, sweetheart".

At this point, it can also be argued that the very randomness of the human gene selection process during reproduction is ironically commented on by the special effects creators in the scene of browsing the DNA archive, as the sentences of the genomes are scrolled here in an interface designed like a gambling machine, often colloquially referred to as a "one-armed bandit" [Fig. 2]. It is also significant that the visualisations of the DNA systems can be moved and superimposed in this unusual GUI, so that, after painstaking, superhuman work, a duplicated pair can be made to emerge. The translational qualities of the interfaces (intended at their origin to translate machine language for humans and vice versa) are also highlighted in the film, as moments later we see the information from the duplicated genotype being translated into English, revealing incomplete personal data profiles containing only the child's gender and statistical numbers. The profiles collected in the archive also make it possible to follow the fate of the original and the copy, as another tab informs

2. The DENABASE interfaces from *Blade Runner 2049*. Photo from: P. Eszenyi, TRI01_DNA_DEV_MAIN,
https://petereszenyi.com/portfolio/blade (access date: 2.01.2024)

[28] **P. Celiński,** *Biomedia i antropologia gestów i ciała*, [in:] *Vilém Flusser i kultura mediów. O dialogu między słowem, pismem i obrazem technicznym*, Sc. Ed. **P. Wiatr**, **M. Sanakiewicz**, Lublin 2021, p. 107.

K that the wanted girl died in the orphanage due to a genetic defect and the genetically identical boy disappeared.

Sadly, in such perspective, the posthumans and their integrated interfaces, who search for truth, once again appear as merely instruments of futuristic biopower – despite the fact that they represent in the film an attitude of almost complete fusion with the technology through which they operate such machines as the spinner or various types of information bank interfaces. In this type of "biomedial system":

> there is less and less resistance to ways in which the body can be opened up to connections and communications that bypass the sensorium and distanced perception. Apart from the subject bound to his or her organism, programmes, interfaces, data streams and stimulators, ready to undertake this task, can be involved in the structure of information and management of the organic substance, plugged into various networks and communication channels. Bodies, organisms thus become databases managed alphanumerically from the outside and in the same way managing the environment themselves[28].

Fortunately, the negative connotations of the panoptic relationship between discursive interfaces and posthuman figures will be reinterpreted in the second half of the investigation, which I will focus on later in this text.

Part II. Interfaces of surveillance and discipline. The Wallace Corporation's panoptical archives
In examining the ways in which interfaces are represented in Villeneuve's piece, it is also important to note that the system of panoptic relations here is based not only on surveillance and knowledge management, but also on the disciplining of individuals. Therefore, several other scenes from the film are related to **discursive** technologies and testing procedures. For example, Officer K is a replicant whose mental state must be constantly monitored. In turn, manifestations of human behaviour among posthumans are treated as dangerous aberrations in the *Blade Runner* universe. They are therefore picked up by means of the so-called Baseline Test. The Baseline scan, in turn, is the opposite of the Voight-Kampff procedure from the first part of the film, designed to detect inhuman behaviour of subjects suspected of being replicants (advertised by the Tyrell Corporation as "more human than human").

The first visualisation of the course of the test is shown very ascetically in the film – in an isolated white and beige somewhat "hospital" space, the test subject K stares at a beeping device with three lenses, repeating passages from Vladimir Nabokov's *Pale Fire* and automatically answering questions from the person checking his reactions. In the scene of "scanning K's psyche", we do not see any

GUI interfaces, as they presumably remain placed on the side of the person administering the test. However, during the second test, in which the protagonist performs negatively, the GUI creators return to the motif of penetration/scanning, this time using more abstract associations:
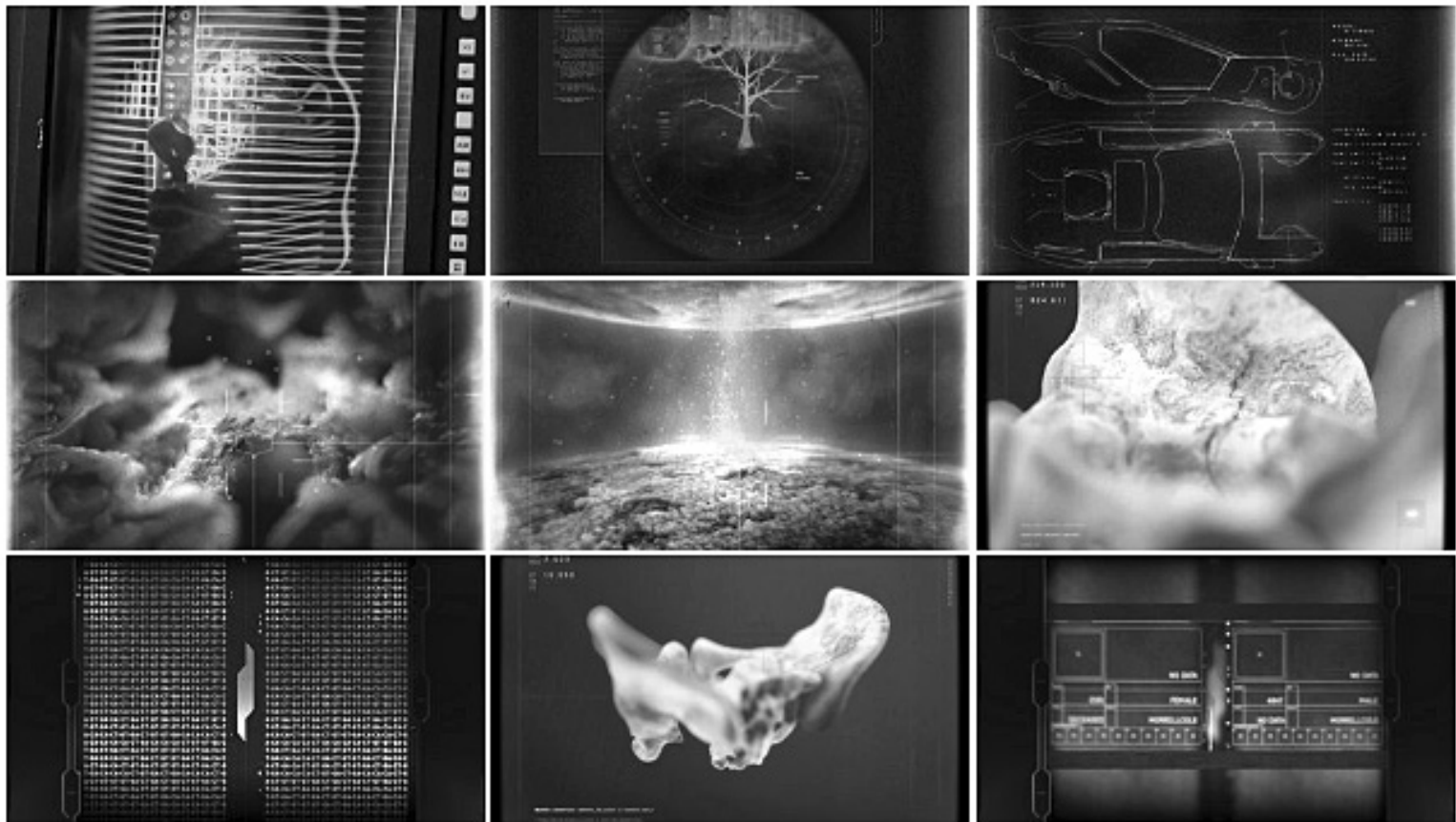
> The baseline scan is intended to be a more precise version of the Voight-Kampff test, showing technological progression since the original film. Rather than showing an iris, as in the original, Denis wanted this new test to show the view through the optic nerve, suggesting neural activity in the replicant. The intention was not to mirror human brains or neurons, but to achieve a level of abstraction in the images, that had an aesthetic, as much as organic quality.
>
> We needed to design a series of animations that show different aspects of brain activity and to avoid MRI references we aimed for a level of pure organic abstraction. We ideally wanted to achieve that without using brain tissue, so when we found a dried out grapefruit in the studio, we began to experiment with macrophotography and photogrammetry. We showed a series of different treatments to Denis and Paul and they loved the texture, so we explored that route further[29].

What is important, before Lieutenant Joshi begins to observe the abstract representation of K's neurological activity mentioned by the creators (nota bene visually resembling somewhat the famous light fountain from Pale Fire's protagonist's vision), on the screens in the LAPD chief's office we see one of the most classically designed interfaces. It presents the tabs, windows and user menus familiar from modern operating systems, as well as the large caption "ANOMALY DETECTED".

The subsequent sequence of shots also includes a physical dashboard, with a keyboard and a joystick, and the screens show scrolling text, shots of K's profile and visualisations of acoustic waves from the protagonist's speech [Fig. 3]. The shift from the GUI's invisibility motif of the first instalment to the presentation of so many indicators of the subject's reactions is obviously intended to emphasise the emotional tension associated with K's awakening of human emotions and the gravity of the fatal consequences of this phenomenon ("awakened" posthumans are killed). In this kind of plot idea, it is not difficult to find the assumption that the functionaries of the apparatuses of power, thanks to the penetrating interfaces, gain the right to decide about life and death. This fact correlates interestingly with Flusser's remarks on the affinities of the root words of the nouns government and cybernetics:

> The word "government" is from the Greek verb "*kybernein*", meaning "to steer" and can be recognized in "*cybernetics*". The German word "*Regierung*" is from the Latin-Etruscan noun "*rex*", meaning 'king', and its root is

the ancient "*rg*" meaning 'right'. At this first glance, then, "government" is concerned with steering, taxation, and tax collection and "*Regierung*" with jurisprudence and institutions[30].

It is not surprising, then, that in his mission to map the roles of "power producers" and information guardians, K will also find himself, sooner or later, in the central organ of biopower. The earthly headquarters of Wallace Corporation is, after all, the next place, after the police buildings, associated with the panoptic order and the devices used to "produce and archive knowledge" that the protagonist visits. Before reaching the database containing information on each generation of posthumans, K briefly speaks to an employee of this gigantic data store. Only a golden light (presumably intended to connote the surviving wisdom of humanity wielded by the company) fills the interior of the Wallace building's "reception" immersed in darkness. The unsettling atmosphere of the scene is heightened by the array of geometric curves used in the set design. And the interface itself of the machine locating information about the sought-after replicant model is placed on a screen again resembling an e-paper.
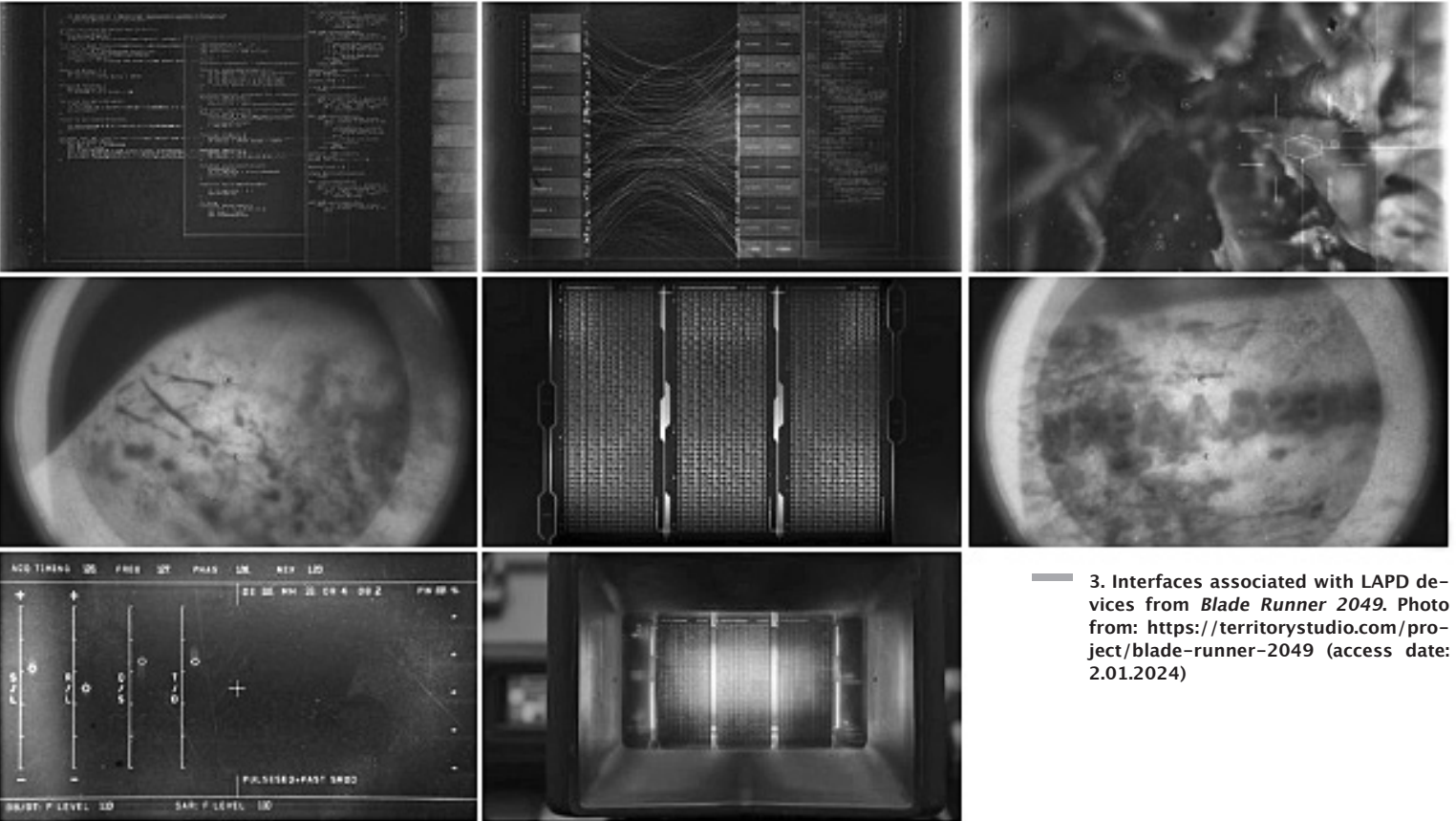
3. Interfaces associated with LAPD devices from *Blade Runner 2049*. **Photo from: https://territorystudio.com/project/blade-runner-2049 (access date: 2.01.2024)**

Importantly, in the "reception" scenes, the motif of technological penetration is used again, as a corporate employee checks the DNA (from Rachel's hair) by means of a scanning device. The course of the penetration process is accompanied by Hans Zimmer's mantric music, which creates an atmosphere of discovering the secrets of a once living organism[31]. The sample shown on the screen is instantly "loaded" and presented in a form designed to resemble a fusion of X-ray photography and ultrasound examination, additionally accompanied by a clear font informing where to look in the corporation's archives for information on the origin of the remains.

The Archons' reign over knowledge is emphasized through the monumental interior architecture of the archives where a "librarian" takes the policeman. However, the thousands of classically designed binders here hide rather unusual storage media – housed on transparent rectangular plates that are viewed against the light. Access to older databases is located even lower and is guarded by an interface that recognizes the retina of the person authorized to view the information[32] and the memory records themselves are kept in an isolated room, which resembles a fusion of bunker and server room architec-

[31] Unlike in the first part of the film, the replicants in the sequel appear to be genetically modified biological beings rather than androids.

[32] In turn, the scene in which Lieutenant Joshi was killed used the access interface associated with the full face scanning procedure.

33 **N. Summers**, *Designing the Technology of "Blade Runner 2049"*, https://www.engadget.com/2017–10–20–designing–the–technology–of–blade–runner–2049.html (access date: 21.12.2023).

ture. Yet instead of computers or other electronic equipment, here we find the most original storage media from the film - small transparent spheres. The device used to read them does not have a screen interface, but reacts to movement – pulling the "memory ball" inside and then returning it and automatically closing the screen.

The "mechanical interface" used here is a form of bridge with the technology of thirty years ago, where machines such as the Esper or the Voight-Kampff tester were also operated manually. A futuristic flash disk is inserted into a reader reminiscent of portable DVD models integrated into LCD screens. It stores an audio recording of the memorable Voight-Kampff test scene from the first part of the film, as well as shots of Rachel's eye when she was subjected by Deckard to the test procedure. This self-referential procedure makes intriguing use of the idea of "a database within a database", as Denis Villeneuve's sequel becomes, thanks to this strategy, itself an "audiovisual archive", containing a "intermedially" simulated piece of Scott's already classic work.

However, the hierarchical structure of Wallace Corporation's edifice is not only characterised by the spatial organisation of the building. As I have already mentioned, the technologies themselves and the ways in which they are operated also define the social status of the characters appearing in the film. A good example of this visual strategy is the communicator, which summons Luv to the archive from another part of the building. It is presented in a scene introducing the highest-ranking employee in the corporate structure. The interface of the device operated by the replicant is modelled on Apple's tablet and computer designs. The white casing with a silver finish and the dark display (on which the "AUTO ALERT" message appears) create an impression of elegant minimalism.

This unusual display posed daunting challenges for the designers, who had to create technologies based on low power consumption in the world of the twilight of the Anthropocene:

> "I vividly remember debating bacteria", Eszenyi said. "Can they use certain types of bacteria to create green colours. Or blue ones?". They thought about jellyfish that often wash ashore and turn everything a startling shade of blue. Could they be harnessed somehow to create a primitive colour display? How would that work? At one point they were imagining bacteria that could be genetically engineered to change colour. They thought about computers that could excite them to trigger a colour-switch, thereby altering the image. But then there was the screen. "Would this display be fast enough to be usable?", Eszenyi asked. "Or would it be a slow-changing kind of thing?"[33]

When it comes to the communicator used by Luv, lines of text appear very dynamically on the screen, again suggesting that the corporation has better equipment than, for example, the police spinner devices already mentioned – full of "retro" buttons and operated by voice commands [Fig. 4].
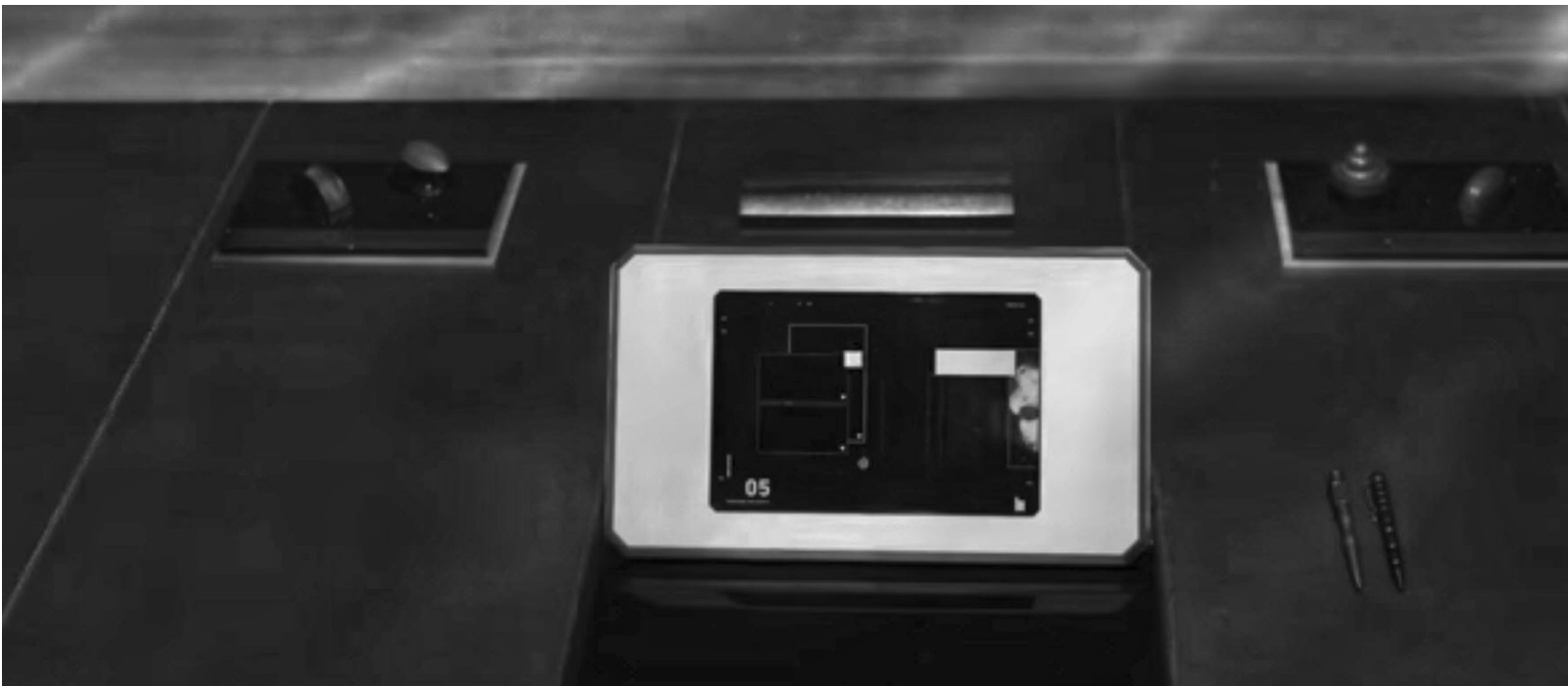
4. The minimalism and elegance of the Luv's communicator interface. Photo from: *Blade Runner 2049*, **dir. D. Villeneuve, USA–UK–Canada–Hungary–Spain 2017**

5. Luv's optic–voice neuro–interface. Photo from: *Blade Runner 2049*, dir. D. Villeneuve, USA–UK–Canada–Hungary–Spain 2017

³⁴ **J. Derrida,** *op. cit., passim.*

³⁵ *Ibidem*, p. 2.

³⁶ *Ibidem*, p. 1.

It is easy to see that in the scenes from the Wallace Corporation headquarters discussed above, the technology concerns appear as the rulers of knowledge and history, whom Jacques Derrida referred to in his Archive Fever with the term "Archons" taken from Greek[34]. This is an interesting correlation, because in the *Blade Runner* universe the rulers and employees of the corporation act precisely as guardians of memory and power. The author of *Spectres of Marx* notes that the Greek root of the term – "*Archeion* means not only the seat, but also the house or dwelling of high officials […] – those who rule and issue orders"[35]. Derrida puts forward the thesis that the word archive:

> binds two principles into one: a principle in accordance with nature and history, where things take their origin – this is a physical, historical or ontological principle – but also a principle measured by law: where men and gods command and rule, [and] where power, social order is exercised[36].

This theme will be developed in a scene in which Niander Wallace (Jared Leto), equipped with a high-tech vision prosthesis, brings another posthuman being to life in the presence of Luv, only to callously annihilate her a moment later. His role in the film's plot corresponds, of course, to that of Eldon Tyrell from *Blade Runner*. Not only does he, like his predecessor, manage an omnipotent company, but he also wields the right to life and death. It is also worth noting that in the creation of Wallace's character, once again the motif of

6. **Luv's optic–voice neuro–interface. Photo from:** *Blade Runner 2049*, **dir. D. Villeneuve, USA–UK–Canada–Hungary–Spain 2017**

technological penetration into the essence of things was used. The owner of the corporation is, after all, a blind biotechnology genius who controls as many as six camera drones thanks to technological implants. These devices extend human visual perception with new data processing capabilities through multiple channels of information gathering. Paul Smart and Nigel Shadbolt, in their bravura analysis of the surveillance themes in *Blade Runner 2049* entitled *The Eyes of God*, rightly point out that Niander Wallace is the personification of the all-seeing panoptic system:

> In Greek mythology, Argus Panoptes, is a many-eyed giant whose epithet "Panoptes" (meaning "all-seeing") resonates with fears about the surveillance potential of technologies. […]
>
> The upshot is that Wallace views the world not through his own biological eyes but through the lenses of technology. The peculiar form of biotechnological bonding exemplified by Niander Wallace speaks to our contemporary concerns with techno- logical augmentation, human enhancement, and the ethics of brain– machine interfaces. It also speaks to issues concerning the extent to which technologies are apt to effect a change in the nature of our embodiment, thereby altering our perceptual and cognitive contact with reality[37].

However, a panoptic ruler would not be able to reign in his kingdom all alone. Derrida rightly observes that knowledge and "docu-

[37] **N. Shadbolt**, **P. Smart**, *The Eyes of God*, [in:] *"Blade Runner 2049": A Philosophical Exploration*, Ed. **T. Shanahan**, **P. Smart**, London – New York 2020, pp. 213, 209.

[38] **J. Derrida**, *op. cit.*, p. 3.

[39] **V. Flusser**, *Człowiek jako podmiot lub projekt*, [in:] *idem*, *Kultura pisma. Z filozofii słowa i obrazu*, Transl., Afterw. P. Wiatr, Warszawa 2018, p. 69.

[40] **P. Celiński**, *op. cit.*, p. 98.

[41] See *ibidem*, p. 107.

ments need a guardian and a location"[38]. While the central locus of panoptic power on Earth is the corporation's headquarters, already described – the guardian of its secrets in the plot of *Blade Runner 2049* is primarily the replicant Luv, who monitors K's investigations and is Wallace's favourite, to whom the creator even gave her name. The replicant's ties to the power and might of the mega-corporation can be seen in her acts such as killing Lieutenant Joshi or tracking and defending the attacked K with a satellite, controlled by her through the use of an optical neuro-interface [Fig. 5].

The latter scene requires brief discussion here, as it demonstrates in an interesting (and similar to K's behaviour in the spinner) way the integration of replicants into the interfaces of the devices that accompany them in their work. The corporation's surveillance technology, after all, turns out to be an unexpected aid to the posthuman policeman when he finds himself under attack. The antagonist launches a missile attack on the aggressors from the air – entering the targets' coordinates by voice and checking their location with a device inserted into her glasses. She performs all these actions remotely, from her office, while also receiving the services of a futuristic manicurist [Fig. 6]. It is not difficult to see that, once again, the optic-phonic interface that translates the operator's commands and transmits them to another device (in this case an armed satellite) has been designed very ascetically in the film. We do not notice any buttons or graphical user interface elements here. And, as with Wallace's drones-eyes, the perception-expanding technology remains almost invisible and linked to the user's multitasking skills.

Paradoxically, however, armed with equipment that widens the boundaries of vision, the anti-heroes in the film often behave short-sightedly, unable to pursue the truth. Whereas the posthuman protagonist, created through corporation's technology, not only enters into a dialogical relationship with himself and the Other, but also turns out to be a carrier of the emancipatory gestures that Flusser calls for when he writes: "we are projects for the construction of ourselves and of alternative worlds"[39].

As Piotr Celiński proves in his text *Biomedia i antropologia gestów ciała* (Biomedia and the Anthropology of Bodily Gestures), these gestures, in Flusser's understanding:

> constitute a kind of cultural-biological hybrid, which molecularly – and thus inseparably and irreducibly – links bodies and their organic dynamics with the will and intention of the person using them. It is his or her primary expression[40].

And it guarantees emancipatory freedom. Such a hybrid is ultimately what the film's protagonist becomes. For the nameless posthuman turns out to be a figure of the most perfect biomedial interface[41]. His actions not only lead to the discovery of the truth about the

investigation and the aims of the Archons, but, above all, enable the protagonist of the first part of the film to establish a real relationship with his daughter.

There are several other intriguing examples of the exploration of the theme of **discursive** and **dialogic** interfaces in the plot of *Blade Runner 2049*[42]. GUIs using holograms, neuro-interfaces and augmented reality as sources of interactive communication appear in the film in scenes, among others, from an abandoned Las Vegas casino and in threads involving K's virtual girlfriend (Joi) and Dr. Anna Stelline. In particular, the latter character and the augmented reality (AR) and 3D projection interfaces associated with his work deserve a brief analysis, as they link to the finale of the film's investigation. The final clue in the investigation finally leads K to discover the truth about his own identity. The secret was hidden in yet another of the Wallace Corporation's panoptic archives, of the utmost importance, which was harnessed to the mission of fabricating dreams and memories.

The figure of the "producer of memories", as a thread related to the Wallace Corporation, contains, in its construction, several references to elements linking to a metadiegetic requiem for the genius of cinematography (or, more broadly, 20th-century audiovisual culture as a whole) and a critique of the futuristic strategy of producing phantoms of (post)audio-visual culture used in the film for the panoptic control of people and their creations. The device used to create, correct and edit her "films" by K's genetic twin, after all, resembles the sizable lens of a photographic or movie camera. Interestingly, it is another of the complex electronic equipment operated in the film partly manually. For the character controls them using physical buttons, located on the sides of the "lens" and the cylindrical rings around it. In the scene of creating a cake for someone's fake memory, we also see a holographic interface, which helps Stelline to spatially layout objects and determine their size. When Ana makes adjustments to the composition, lines of a hard-to-read interface text also appears on the left. While adding more objects (which are the children gathered around the cake), semi-circular graphic interfaces presented in augmented reality are also displayed next to the hologram. Remarkably, however, the complexity of the dream-making process seems disproportionate to the small manual activities performed by the designer. Thus, it can be hypothesised that this character, like Luv and Wallace, also makes use of her neural grafts. Moreover, in the scene of K's meeting with her "sister", further references to scanning procedures are also employed, as in order to read the protagonist's implanted memories, Dr. Ana Stelline needs another penetrating apparatus. Its design was constructed as a hybrid of an optical device with a double eyepiece and two other parts, which scan the front and back of the subject's head. However, the scene of testing the authenticity of K's memories does not show any on-screen or holographic

[42] An intriguing aspect of the relevance of the subject matter of Villeneuve's film and the creative potential of the interfaces designed for it may also be an example of the "feedback" between the world of fiction and the aeras of technology and design, as we can already see artistic attempts on the Internet to transfer the aesthetics of penetration techniques to real GUIs for mobile phones and tablets, inspired precisely by ideas from *Blade Runner 2049*. See *Wallace Corp: UI+UX Design*, https://bootcamp.uxdesign.cc/case-study-tripping-with-ui-in-blade-runner-universe-91db39678bc4 (access date: 21.12.2023).

interfaces, presumably to sufficiently heighten the emotional charge of the relationship between K and Ana.

It is significant that Ana, who is kept "in a technological cage", seems at the same time the most spiritual and sensitive character in the film. The set and costume designers, as well as the actress playing her (Carla Juri), have taken care to include a number of elements capable of giving this impression. The atypical accent, the delicacy of her movements and subtlety of her behaviour, as well as her ease of emotion, together with the design of her "natural clothes" and the idea of moving barefoot around the futuristic "hermit's cell" in which the character lives – these are treatments that effectively create an impression of ephemerality, especially when one adds to her ontical status the autoimmune disease she suffers from (allegedly she has been isolated from society because the real world could kill her).

Yet Dr. Stelline's fragility also harbours highly ambiguous contexts, linked to the concept of **discursive** interfaces. After all, Ana is an employee of a mega-corporation, whose creations ensure the stability of the software of Wallace's company-produced post-human brains. By her own admission, saturating the replicants' memories with slightly more subversive content could lead to further "bugs in their software" – as is the case of the "awakened" K – and ultimately trigger the posthuman revolution so hoped for by the underground activists centred around Deckard and Rachel. Finally, the character of Anna is linked to the territories of dreams, memories also through her genuine identity. For Niander Wallace, after all, she is the last chance to fulfil his pan-capitalist ambitions and plans to lower the cost of producing biotech slaves by naturally reproducing rather than manufacturing them. For Deckard, meeting his daughter is the element that restores his faith in life and for the rebellious replicants, the heroine will perhaps one day become the reincarnated symbol of a miracle and the awaited leader of an uprising. At last, for K, the truth associated with learning the secret of his genetic twin turns out to be a traumatic disappointment, but at the same time also "an act of liberation from the panoptic illusion", directing him towards the ultimate making of the (super)human gesture of sacrificing his own life for another person. Through this, the nameless posthuman confronts Wallace's panoptic system and dies as a free being, aware of his true identity.

Conclusion: Inside/Outside

The film's ending, heralding the coming of the posthuman revolution – in addition to the spectre of the end of anthropocentric human dominion, also brings the hope of the advent of a **telematic** society and the beginning of an era of dialogic communication between the homo sapiens and their technological creations – no longer needing technological interfaces. Of such a futuristic opening to Otherness, Flusser writes:

we will lead a spectral, oneiric, psychedelic existence. […] The pure information we will play with will be channeled to other people, who will be able to transform it. […] We will no longer exist "objectively", but "intersubjectively". Dialogically. A pure information society will be a play of everyone with everyone, in which new information will always be created, more and more incredibly[43].

There's no denying that the vision Flusser unfolds before us seems as utopian as it is dystopian – much like the science-fiction worlds derived from the technophobic imagination of Philip K. Dick. For the time being, however, the **dialogicity** dreamed up by Flusser remains more of a wishful thinking of futurologists and media scholars. The ephemerality of digitized national heritage, the increasing popularity of employing big data processes to influence our reactions and decisions, as well as the lack of sufficient control over the development of artificial intelligence, data trafficking and cases of unauthorized use of images, e.g. associated with deepfake technologies, are just selected examples of contemporary phenomena already widely discussed in the Polish media as well. Without a doubt, then, we are already living in a future that has arrived in a form closer to the predictions of cyberpunks and posthumanists than those of transhumanists. The question remains, what more can we do to change its discursive course toward dialogicity, so that perhaps we won't be plunged into an era of panoptic eclipse similar to that of the *Blade Runner* universe.

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Sebastian Jakub Konefał, PhD, DSc, Assoc. Prof. (University of Gdańsk), sebastian.konefal@ug.edu.pl, ORCID: 0000-0002-8930-235X

Employee of the Institute of Cultural Research at the University of Gdańsk. Author of the books *Corpus futuri. Literackie i filmowe wizerunki postludzi w anglosaskiej fantastyce naukowej oraz ich komiksowe i telewizyjne reinterpretacje* (Corpus futuri: Literary and cinematic images of posthumans in Anglo-Saxon science fiction and their comic book and television reinterpretations, 2013), *Kino Islandii: Tradycja i ponowoczesność* (Cinema of Islandia: History and Postmodernity, 2016), and *The Cinema of Iceland: Between Tradition and Liquid Modernity* (2019). Academic editor of the anthologies *Anatomia wyobraźni* (Anatomy of the imagination, 2014), *Powieści graficzne. Leksykon* (Graphic novels: Lexicon, 2015), *Strefy mroku. Groza w kulturze audiowizualnej* (Zones of darkness: Horror in audiovisual culture, 2017), as well as co-editor of the anthologies *Sacrum w kinie. Dekadę później* (Sacrum in cinema: A decade later, 2013), and *Schronienia. Eseje na czas kryzysu* (Shelters: Essays for a Time of Crisis, 2023). He published articles in "Kino", "Kwartalnik Filmowy", "Studia Filmoznawcze", "Panoptikum", "Studia Humanistyczne AGH", "Er(r)go", and "Journal of Comics and Graphic Novels". His research interests focus on genre cinema (especially science fiction and horror), comics and Nordic culture.

Summary

SEBASTIAN JAKUB KONEFAL (University of Gdańsk) / Discursive and dialogic interfaces, panoptic power and "penetrative technologies" in Denis Villeneuve's *Blade Runner 2049*

Denis Villeneuve's *Blade Runner 2049* (2017) is a culture text that, in many scenes, creatively uses visualisations of futuristic machine interfaces designed to scan and penetrate realms inaccessible to humans. Many of these devices can be interpreted from the perspective of Vilém Flusser's research on discursive and dialogic technologies. The former, according to the philosopher, serve to enslave individuals, while the latter as emancipatory gestures. The universe presented in Villeneuve's film has the characteristics of a panoptic dystopia, in which knowledge is an element of strengthening corporate and state power. The discursive technologies associated with panoptic power, and their interfaces and functionaries, are here vested with the mission of finding and archiving data lost in a catastrophic incident to reinforce the oppressive order. The agent of telemetric upheaval, on the other hand, is the main character – the posthuman, who turns out by the end of the plot to be the personification of the idea of a dialogical interface – which can serve the homo sapiens with his cognitive abilities to discover inaccessible truths, enabling them to find a symbiotic way of humanity's existence with its technological creations and opening up to the Other.