Visualizing the Virus.
The Use of Data Visualizations in COVID-19 Documentaries

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This contribution will examine different communicative and narrative strategies adopted by some documentary productions in order to visualize something invisible, like the virus and its effects. Through the case studies I will take into account, my intent is to reflect upon the pandemic narration, which replaces or alternates the photographic realism of the images of pain and suffering, intended as scientific and incontrovertible proof of the virus manifestation, with a modernist narrative, mixing interviews with infographic material, maps, dashboards, photomicrographs, and computer graphics animations. Despite their profound mediation by software that makes pictures out of numbers, these informatic images, reported daily in news channels and broadcasts as well, besides shaping the relationships between scientific research, documentary, and its explanatory and pedagogical power to narrate, reconfigure the collective imagination of the pandemic in a bioinformation era.

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DISASTER MEDIA AND THE VIRUS IMAGERY

Even if it cannot be considered as a unique and unrepeatable mass-mediated event, a single and circumscribed traumatic experience, the SARS-CoV-2 pandemic (COVID-19) has led to a reconfiguration of the relationship between the event itself and its mediated representation. The COVID-19 pandemic and the health crisis have deeply affected the visual world, conditioning cinematic narratives of trauma as well as its imagery radically.

This contribution will examine different communicative and narrative strategies adopted by some documentary productions in order to visualize something invisible, like the virus and its effects. Through the case studies I will take into account, my intent is to reflect upon the pandemic narration, which replaces or alternates the photographic realism of the images of pain and suffering, intended as scientific and incontrovertible proof of the virus manifestation, with a modernist narrative, mixing interviews with infographic material, maps, dashboards, photomicrographs, and computer graphics animations. Despite their profound mediation by software that makes pictures out of numbers, these informatic images, reported daily in news channels

and broadcasts as well, besides shaping the relationships between scientific research, documentary, and its explanatory and pedagogical power to narrate, reconfigure the collective imagination of the pandemic in a bioinformation era.

However, it is certainly true that it is possible to frame these modernist forms within 'the larger transformations of documentary objects and media that have occurred with the advance and proliferations of digital technologies in the 21st century',[1] as Jihoon Kim points out. The scholar proposes the concept of 'expanded documentary' to indicate non-fiction media practices which reconfigure a standardized aesthetic form as well as involve a different mode of spectatorship, 'incorporating new consciousness, behaviors, and cultural or political climate affected by the digital technologies for production and postproduction of images and the non-theatrical experiential platforms, such as VR interfaces, interactive websites, and social media'.[2]

As I have mentioned before, media content, practice, and aesthetic change radically during crisis, as the COVID-19 pandemic, for instance, in informing and educating the audience about the scientific facts and government responses to the health crisis, how to stay safe, how to protect themselves, showing graphs and maps about infection rates, keeping viewers constantly updated about its spread.[3]

Scholars draw attention to the concept of disaster media, referring to how 'media are both complicit in the amplification of disastrous occurrence and helpful in the provision of reckoning and relief, support and succor'.[4] Cinema, as a media form, gives shape and meaning to disasters themselves, conditioning the ways in which they are imagined, experienced, and felt, promoting the construction of a cultural trauma.[5] Recently, several studies have focused on how cinema and media reflect upon and convey catastrophic events,[6] accidents,[7] ecological and environmental disasters[8] or migration as crisis.[9] Atrocities and disasters, testing the 'threshold of the visible',[10] could provoke a reconceptualization of the cinematic visualization practices and aesthetics.

Taking into account, through a media-archeological perspective, the relationship between historical moments and the emergence of a new audiovisual lexicon, Akira Lippit, in her text *Atomic Light*, for instance, focuses on how traumatic events have induced new film and media theories of optics, acoustics, and haptics which challenge the representability of the experience. The nuclear blast, and the atomic radiation, for instance, signaled a transformation of visual representation, as well as the conditions of visuality as such, like the X-rays, which disclosed the inside of the body. Lippit retraces the formation of a mode of avisuality, a secret visuality, 'not as a form of invisibility, in the sense of an absent or negated visibility: not as the antithesis of the visible but as a specific mode of impossible, unimaginable visuality'.[11]

Documentary cinema adopts similar visual aesthetics and narratives of data visualization widely adopted by the disaster media during the pandemic. The spectacle of pain with strong emotional impact, which historically characterizes the narrative of documentary cinema in portraying situations of crisis, war or natural disaster, changes significantly in the cases I intend to examine,

establishing a different relationship with reality and visual. What we can consider as a pre-existing media convention of crisis, namely the spectacular and sensationalistic images depicting human suffering, in this case, is often replaced by data visualizations and infographic material.

DATA VISUALIZATIONS IN COVID-19 DOCUMENTARIES

The first case I want to take into account is *Totally Under Control* (Alex Gibney, Ophelia Harutyunyan, and Suzanne Hillinger, 2020), produced by Hulu and realized during the first wave of COVID-19 pandemic. The film basically depicts Trump administration's response to the health crisis in the United States, retracing a timeline for the events, starting with the first documented case in Seattle back in January 2020 and then examining the spread of the virus over the following nine months. The documentary highlights the Trump administration's incompetence, corruption, and denial in the face of the global pandemic, often comparing the American response to that of South Korea. Alex Gibney with the co-directors Ophelia Harutyunyan and Suzanne Hillinger take an investigative path, focusing on how the President and his team in the White House put their personal power and political advantage above mitigating the spread of the virus. The film collects several zoom interviews, which are part of the pandemic imagery, of course, with scientists, healthcare reporters, correspondents from Asia, the ex-Secretary of Health and Human Services as well as the ex-CDC director, in order to provide a scientific counter narration, highlighting how the situation was not 'totally under control', as Trump affirmed, and the film title recalls.

In addition to that, the documentary adopts infographic material as digital storytelling tools in order to visualize the pandemic curve, the number of deceases and the spread of the virus, enabling viewers to comprehend complex information and to counterstrike the COVID infodemic.[12] Infographics, dashboards, 3D simulations, graphs and curves or graphical maps are widely adopted in documentary productions, because they make difficult information easily accessible even to non-experts, from a scientific point of view,[13] as well as for the storytelling potential of data visualization narratives.[14] The film refers, for instance, to one of the most reliable monitoring systems of the pandemic, which is the Johns Hopkins COVID-19 Dashboard, launched by the Center for Systems Science and Engineering at the University, for providing 'researchers, public health authorities, and the general public with a user-friendly tool to track the outbreak as it unfolds'.[15]

Referring to Ann Kaplan's study of trauma and its cultural politics, she differentiates a range of responses to traumatic events. Considering the war photographs of Rwanda and Iraq, Kaplan coins the term 'empty empathy', meaning 'the empathy elicited by images of suffering provided without any

context or background knowledge'.[16] To reflect upon the aesthetic strategies which produce traumatic effects on the viewers, she brings up Susan Sontag's description of her initial reaction to photographs of concentration camps victims,[17] which provides 'a clear example of vicarious image-induced trauma'.[18] According to Kaplan, Sontag and other scholars, such as John Berger,[19] for instance, it is necessary to re-approach the images of suffering, standing back and thinking, paying attention, re-conceptualizing other strategies for communicating, representing and understanding trauma. Ethical witnessing stands as a new level of responsibility, differentiating itself 'from vicarious trauma, from voyeurism/sensationalism, and from melodramatic attempts to close the wound as in Hollywood treatments of historical trauma'.[20] Besides leading to a broader understanding of the pandemic situation, rendering the scientific information real, accurate, and credible through a powerful narrative impact and emotional appeal, and stimulating a pro-social behavior, persuading viewers to take action and change their health behaviors accordingly, data visualizations as the substitution for photographic images of the phenomenal world reflect upon a reconceptualization of indexicality, realism, and evidence as well as of the representability of traumatic events. Data visualization narratives adopted in the documentary challenge 'the precedence of lens-based imagery as the privileged component of non-fiction filmic practice', shifting the reference status.[21]

In addition to that, even if it determines an experience of seeing without ever offering a concrete image, data visualization, as a rhetorical form that visualizes 'a relationship between the material world and its particular form of representation',[22] acts as a metaphorical authorial voice recalling the Bill Nichols's 'voice of God' concept.[23] Data visualization's narrative voice claims objective knowledge. It plays a key role in several scientific and educational documentaries such as National Geographic's production, *Mission Possible: The Race for a Vaccine* (Jesse Sweet, 2021), or the documentary limited series *Covid, Explained* (2020), which premiered on Netflix in April 26, 2020. The three episodes series, which is narrated by J.K. Simmons, Laura Linney, and Idris Elba, looks at how the virus grew and spread around the globe, the race to develop vaccines as well as the mechanisms for coping with the stress of the pandemic, and a global lockdown.

As Lisa Parks and Janet Walker point out, taking into account disaster media narration, infographic material concerning COVID-19 recalls data visualization referred to the global warming curve. The Hockey stick graphs, presenting the global or hemispherical temperature, have been used, for instance, in *An Inconvenient Truth* (Guggenheim, 2006), the documentary centered on the climate activism of former US vice president Al Gore. The film's global warming graph, depicting a dramatic climate shift, projecting an imminent catastrophe, tries to promote a collective action on climate change. In the age of big data and the current pandemic, graphs and curves dominate the mediascape and media imagery, through a collective image-building, insomuch as scientists and viewers are engaging with similar looking charts both for COVID-19 and

global warming. The disaster media heuristic, according to Parks and Walker, 'encourages us to reflect upon the coronavirus and global warming graphs together and in relation to other audiovisual mediations, which, as we argue throughout, co-produce the material realities they may seem only to depict'.[24]

THE ICONIC IMAGE OF THE VIRUS

Alongside the data visualization narratives, the 3D image of the coronavirus particle remains the most iconic symbol of the current pandemic imagery, its signature. Through this process of visualizing microbial entities, produced by sophisticated optical technologies and computational processes, it has been possible to give the virus an identity, a representation, a form, making tangible something invisible with the naked eye.[25] The iconic image of SARS-CoV-2 has been created by Alissa Eckert and Dan Higgins, medical illustrators at the Centers for Disease Control and Prevention in Atlanta. As Higgins affirms in an interview, they decide to create 'a realistic virus that people can envision when walking into public places or coming in close contact with strangers, something that says this virus is real, and it's to be taken seriously'.[26] 'Something to grab the public attention', Eckert states, a 'beauty shot', a detailed, solo close-up.[27] Working alongside scientists at CDC, in order to understand the microscopic virion, visible only through an electron microscope, the Coronavirus particle resembles 'a grey blob surrounded by a blurry haze of protein spikes'.[28] Even if they had a basic morphology of the structure, Eckert and Higgins wanted to present something that has no visual reference. Consequently, they made a series of design decisions and interventions, adding form, color, texture, and shadow for communicating the virus more clearly to the public as well as for provoking an emotional and visual impact. The color palette adds a feeling of danger, alarm, through the contrast between the bold red of the S proteins and the gray of the viral wall, for instance.[29]

Scientific images can be, of course, a powerful rhetorical expression in documentary cinema, for understanding the biopolitics of molecular life itself as well as, in this particular case, for reflecting upon the representability of the traumatic experience. It is certainly true that we can retrace an indissoluble link related to scientific and medical practice between documentary cinema and the microbiological world, since the early twentieth century. Techniques for filming radically transformed many scientific fields, including biology.[30] The first scientific film, *Fertilization and Development of the Sea Urchin Egg* (Julius Ries, 1907), capturing images of living, moving cells in a format that could be projected for teaching to medical students, adopts Marey's chronophotographic technique, exploring new possibilities through a dynamic medium instead of a static representation. Ries realized the first time-lapse film of cell development by condensing a 14-hour process in two-minutes, instead of presenting it through a series of still images.[31] Furthermore, the moving picture camera, which became necessary in scientific research since it has been commercially available in Europe, succeeds in depicting the microscopic world, making visible

the otherwise unimaginable, like the process of embryogenesis.[32] In the recent days, in the bioinformatic era, there has been an increasing shift from the analog depiction of biological processes to the digital renderings as, for instance, in *The Inner Life of the Cell* (2006),[33] which illustrates the leukocyte extravasation for defending the body against disease, through a computer-generated animation.

The conversion of hard data into animated images, as a modernist form of representation, challenges the production of documentary realism. Even if it refers to indexical qualities of medical imaging, data animated visualization is mediated and produced by algorithmic software that makes pictures out of numbers. However, these informatic images take on the status of evidence, functioning as bioinformatic media, producing new forms of biomedical knowledge. Reflecting upon the role that computers have played in transforming our conceptions of documentary evidence, Kirsten Ostherr affirms that 'these visualizations claim to document an unseen reality, and in doing so, they bring that very reality into being'.[34]

The iconic image of SARS-CoV-2 has been extensively used in the documentaries I have already mentioned, as well as in other productions, whose purpose was not strictly educational or scientific, such as in *In the Same Breath* (Nanfu Wang, 2021). In a similar way as *Totally under Control*, the HBO documentary focuses on the early days of the COVID-19 pandemic, retracing how the Chinese and American governments reacted to the outbreak. Wang assembled a team of cinematographers, producers and field researchers to film and document what was unfolding in Wuhan and then in the U.S. after the spread of misinformation. The film intends to defy the obfuscation and disinformation which has characterized the COVID-19 crisis, highlighting the responsibilities of the governments and how their lies have affected the lives of ordinary people. Analogously to her previous film, *One Child Nation* (2019), Wang explores how the governments and, consequently, the state-run media create political narratives out of tragedy, highlighting similar signs of propaganda and censorship effects both in China and in the U.S. However, in a different way compared to the previous film analyzed, *In the Same Breath* depicts more personal and intimate moments rather than addressing scientists, virologists and infographic material for educational purpose, through vlogs and video-dairies. It has been evident, indeed, how the impact of media technologies on users' daily lives, the new conditions of life under quarantine and the limitation of mobility have influenced collective and individual social narratives in the form of personal and intimate diaries written during the lockdown as well as the documentary lexicon. Collecting first-person self-documentation from who have filmed and published their life online under pandemic, *In the Same Breath* conveys an affective experience of fear and uncertainty. We meet several American healthcare workers traumatized by all the illness and death they have witnessed, who cannot speak about it because they have been warned by their own employers, as happened in China. The dramatic intimacy of these moments, as a man who has to decide whether his mother should be left to die at home or taken to die at an overcrowded hospital, or Wang's personal experience,

are juxtaposed with the data visualization narratives. The photographic realism of the images of pain and suffering are alternated with other scientific and incontrovertible proof of the virus manifestation, as the infographic material and the iconic image of SARS-CoV-2, recalling the collective pandemic imagery.

Reconceptualizing the images of suffering through different strategies and forms of representation for communicating and understanding trauma, the film suggests ethical witnessing, referring to Kaplan's notion. Biological digital renderings and data visualizations stand as modernist forms of representation, as techniques and practices increasingly used in contemporary documentary cinema like re-enactment, found footage, animation, which bring to a reconceptualization of indexicality, realism, and evidence as well as of the representability of traumatic events.

Moreover, *In the Same Breath* recurs to another visual element which plays a key role in the cultural trauma narration concerning the pandemic, as the drone footage of unusually desolate cities, in a post-apocalyptic scenario. In early February 2020, evocative assemblage of drone sequences captured firstly in the city of Wuhan, then across the world, invaded all over the networks and social media platforms, standing for the iconic symbol of social distancing. The pandemic drone imagery evokes a spectral situation, the aftermath of war, that Teresa Castro proposes to read 'against the background of our current ecological crisis'.[35] She highlights the connections between drone footage realized during the pandemic and aerial footage of wild animals taking over empty cities around the world, as the nature takes back its proper space, as well as images of anti-racist protests, referring especially to Black Lives Matter movement. 'The iconic symbol of distance tech produces the imagery of social distancing', as Caren Kaplan affirms, referring to the drone footages produced during the pandemic, which represent 'a haunting, melancholic nostalgia for what has been lost'.[36] Focusing almost completely on urban landscapes, and their material and environmental empty infrastructure, drone imagery depicts a modernity in peril, with 'an increasing non-human agency in the production of visibility', challenging the human fantasy of optical mastery over the earth.[37] Even from above it is impossible to see where the virus is. Ai Weiwei's *Coronation* (2020) extensively uses drone footage in order to depict the lockdown in Wuhan. Filmed against a dull grey sky, the city resembles a sci-fi dystopian movie set with skyscrapers empty of people, railways without trains, highways without cars. However, drone imagery, intensified by a soundtrack that sounds like atmospheric electronics and ghostly screams put through a vocoder, alongside footage representing survival situations like an unemployed man living out of his car or anonymous patients hospitalized in the intensive care unit offer a sensationalistic narration and form of representation. With no data visualizations, infographics, onscreen titles, or interviews but through fragmented images of individual pain, the film seems to arouse 'empty empathy', following Kaplan's concept, which could maybe provide an initial shock in the viewer rather than stimulating a pro-social behavior or a critical thinking. That's the risk films as *76 Days* (Hao Wu and Weixi Chen, 2020) or *The First Wave* (Matthew Heineman,

2021), for instance, can run into, focusing mainly on sensationalistic images of human suffering in intensive care units.

CONCLUSION

To conclude, in the present contribution I have examined different communicative and narrative strategies adopted by some documentary productions in order to visualize something invisible, like the virus and its effects. Infographics used to communicate complex quantitative or qualitative information in a visually engaging manner, in the age of big data and the current pandemic, tend to dominate the mediascape, signaling, consequently, a transformation of visual representation in documentaries as well. Even if it is difficult to historicize a current event as the COVID-19 pandemic, to locate a single prevailing trend in these pandemic non-fiction productions, or to propose a new categorization, it is possible to retrace new forms of imaginary geographies and visual devices in order to shape and construct the pandemic as historical agent of cultural trauma. The way of representing a pandemic has been very different considering, for instance, HIV, which, obviously, promoted documentary activism of the epidemic era, through films that criticize the social and political causes of the disease and mourn the huge losses within largely invisible communities.[38]

Nevertheless, a documentary concerning emerging viruses such as Ebola or SARS, like, for instance, *Pandemic: How to Prevent an Outbreak* (2020), adopts a deeply different audiovisual lexicon and forms of visualization compared to the cases I have taken into account. The six episodes documentary series, released on Netflix in January 2022, just before the COVID-19 was beginning its rampage all over the world, covers a range of specific issues concerning the possibility of an influenza pandemic, the search for a universal vaccine or anti-vax movement. It is possible to retrace an educational purpose since the series aims to explain how to prevent and contain a potentially global outbreak, even if the narration, structured like an espionage thriller, mainly focuses on sensationalistic rhetoric of contagion, from the deadly ramifications of the 1918 Spanish flu to the current days. Depicting a crowded animal market or a run-down farm as a possible center of contagion as well as focusing the attention on seriously ill people are explicative intents for conveying a sensationalistic sense of disaster.

On the other hand, mixing interviews with infographic material, maps, dashboards, photomicrographs, and computer graphics animations, some of the COVID documentaries I have taken into account reconfigure the collective imagination of the pandemic in a bioinformation era. The invisibility of the virus has led to a series of indirect and abstract images. Data visualization, using different kinds of elements like images, lists, graphs, charts, attractive color schemes, descriptive headings, and subheadings, going beyond an educational purpose and its explanatory and pedagogical power to narrate, can be considered a modernist form of representation, a new audiovisual lexicon to reconceptualize the images of suffering and the traumatic event.

Notes

[1] Jihoon Kim, 'Data Visualizations, Vlogs, Drone Imagery: Expanded Documentary Forms in the COVID-19 Emergency', *Film Criticism*, 45.1 (2021), <https://journals.publishing.umich.edu/fc/article/id/1060/> [accessed 15 July 2022]

[2] Ibidem, 3.

[3] COVID-19 in *International Media: Global Pandemic Responses*, ed. by John C. Pollock and Douglas A. Vakoch (London, New York: Routledge, 2022).

[4] Lisa Parks and Janet Walker, 'Disaster Media: Bending the Curve of Ecological Disruption and Moving toward Social Justice', *Media+Environment*, 2.1 (2020), 4, <https://mediaenviron.org/article/13474-disaster-media-bending-the-curve-of-ecological-disruption-and-moving-toward-social-justice> [accessed 27 April 2022]

[5] Ron Eyerman, 'Cultural Trauma and the Transmission of Traumatic Experience', *Social Research: An International Quarterly*, 87.3 (2020), 679–705 (679).

[6] See, for instance, Kirsten Ostherr, *Cinematic Prophyaxis: Globalization and Contagion in the Discourse of World Health* (Durham: Duke University Press, 2005); Nikita Mathias, *Disaster Cinema in Historical Perspective Mediations of the Sublime* (Amsterdam: Amsterdam University Press, 2020); *Defining Disaster: Disciplines and Domains*, ed. by Marie Aronsson-Storrier and Rasmus Dahlberg (Cheltenham: Edward Elgar Publishing, 2022).

[7] Karen Redrobe Beckman, *Crash: Cinema and the Politics of Speed and Stasis* (Durham: Duke University Press, 2010); Greg Siegel, *Forensic Media: Reconstructing Accidents in Accelerated Modernity* (Durham: Duke University Press, 2014).

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[10] Kaja Silverman, *The Threshold of the Visible World* (London, New York: Routledge, 1995).

[11] Akira Mizuta Lippit, *Atomic Light: Shadow Optics* (Minneapolis: University of Minnesota Press, 2006), 32.

[12] The term infodemic, from information and epidemic, refers to a situation where 'a few facts, mixed with fear, speculation, and rumor, amplified, and relayed swiftly worldwide by modern information technologies' affect economies, politics and security. The term has been coined by the journalist and political scientist David Rothkopf in 2003 in connection with SARS. David J. Rothkopf, 'When the Buzz Bites Back', *The Washington Post*, 11 May 2003, <https://www.washingtonpost.com/archive/opinions/2003/05/11/when-the-buzz-bites-back/bc8cd84f-cab6-4648-bf58-0277261af6cd/> [accessed 27 April 2022]

[13] Florian Hoof, 'Media of Trust: Visualizing the Pandemic', in *Pandemic Media: Preliminary Notes Toward an Inventory*, ed. by Philipp Dominik Keidl, Philipp Dominik Keidl and others, (Lüneburg: Meson Press, 2020), 231–242. Hoof's study on different data visualizations about the virus and the pandemic as a trustworthy form, since the society is acquainted with this specific visual culture, has been the starting point of my research.

[14] Deborah Toschi, 'Bodies and maps, display the habitat of the contagion', *Visual Culture Studies*, 2 (2021), 97–114.

[15] Ensheng Dong, Hongru Du, and Lauren Gardner, 'An Interactive Web-based Dashboard to Track COVID-19 in Real Time', *The Lancet Infectious Diseases*, 26.5 (2020), 533–534 (533).

[16] Ann Kaplan, *Trauma Culture. The Politics of Terror and Loss in Media and Literature* (New Brunswick: Rutgers University Press, 2005), 93.

[17] Susan Sontag, *On Photography* (New York: Straus and Giroux, 1977).

[18] Kaplan, 91.

[19] John Berger, 'Photographs of Agony', in *About Looking* (New York: Vintage Books, 1980), 41–44.

[20] Kaplan, 22.

[21] Kim, 6.

[22] Tess Takahashi, 'Data Visualization as Documentary Form: The Murmur of Digital Magnitude', *Discourse*,

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[23] Bill Nichols, 'The Voice of Documentary', *Film Quarterly*, 36.3 (1983).

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[28] Dan Higgins in Fairs.

[29] Julia Sonnevend, 'A virus as an icon: the 2020 pandemic in images', *American Journal of Cultural Sociology*, 8 (2020), 451–461.

[30] Jean Painlevé, 'Scientific Film' (1955), in *Science Is Fiction: The Films of Jean Painlevé*, ed. by Andy Masaki Bellows, Marina McDougall, and Brigitte Berg (Cambridge, MA: MIT Press, 2000), 160–169.

[31] Kirsten Ostherr, 'Animating Informatics: Scientific Discovery Through Documentary Film', in *A Companion to Contemporary Documentary Film*, ed. by Alexandra Juhasz and Alisa Lebow (Hoboken: John Wiley, 2015), 280–297.

[32] Hannah Landecker, 'Seeing Things: From Microcinematography to Live Cell Imaging', *Nature Methods*, 6.10 (2009), 707–709.

[33] The short film is commissioned by BioVisions, a multimedia collaboration based in the Department of Molecular and Cell Biology at Harvard University and funded by the Howard Hughes Medical Institute.

[34] Ostherr, 281.

[35] Teresa Castro, 'Of Drones and the Environmental Crisis in the Year of 2020', in *Pandemic Media*, 81–90.

[36] Caren Kaplan and Patricia R. Zimmerman, 'Coronavirus Drone Genres: Spectacles of Distance and Melancholia', *Film Quarterly*, (April 2020), <https://filmquarterly.org/2020/04/30/coronavirus-drone-genres-spectacles-of-distance-and-melancholia/> [accessed 15 July 2022]

[37] Ada Akerman, 'Covid-dronism: Pandemic Visions from Above', in *Pandemic Media*, 168–169.

[38] As far as HIV activist videos concerns see, for instance, Alex Juhasz, *AIDS TV: Identity, Community and Alternative Video* (Durham: Duke University Press, 1995).