Taking Imaginary Photos with Tamás Waliczky's *Imaginary Cameras*

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In 2019, Tamás Waliczky represented Hungary at the 58th Venice Biennale with his *Imaginary Cameras* (2016–19). At the time, the series consisted of digital renderings of 23 imagined devices—not just cameras, but projectors and viewers as well—displayed as photographic prints in lightboxes and as animations on television screens. Later that year, Waliczky added another digital rendering and another animation to the series. At the center of the Hungarian Pavilion was an outdoor interactive installation which functioned as a digital simulation—or "paraphrase," to use the artist's preferred term—of one of the cameras designed by Waliczky: a portrait lens was positioned at the level of the visitor, and a panoramic camera on top of a 15-meter-tall pole recorded images of the Venetian skyline. The two simultaneously recorded images were fused into a single digital photo, whimsically recalling the earliest forms of 19th-century studio portrait photography, which employed illusionistic backdrops to perform a version of the subject's socio-economic status.[1]

Waliczky's international career as an artist first took off in 1989, when he received the prestigious Golden Nica Award at the Linz Ars Electronica Festival. He had been working as a graphic designer for various computer game developing companies in Hungary, and had made another submission to the Linz Ars Electronica Festival the year prior, for which he received an Honorable Mention. At the time, behind the Iron Curtain, anything that was deemed an artwork, and which was intended to be exhibited for the public at home or abroad, had to receive a stamp of approval from the administrative offices responsible for overseeing all issues related to the arts. These offices, however, tended to be a few steps behind developments in the art world,

which allowed artworks that moved along the borders of art and technology or—as in the case of Waliczky—an artwork that existed as a file on a floppy disk, to slip under the radar. For the 1989 competition, Waliczky submitted a series entitled *Machines* (1989), consisting of three computer graphics depicting an automobile, a gramophone, and a sewing machine. Although these images were created at a much more rudimentary stage of computer graphics technology, this series has important affinities with the *Imaginary Cameras* series presented at the Venice Biennale 30 years later. In both cases, the objects depicted are machines, but while the *Imaginary Cameras* represent imaginary devices, the 1989 *Machines* show us existing, everyday technologies. As Hungarian art historian Miklós Peternák writes, while "the primary impression or audience view is the commonplace 'computers can be used to do this too,' in truth, the images have more of a constructed-structural and not an optical-natural relationship with the machines serving as models."[2] Nevertheless, the sewing machine, the gramophone, and the automobile are machines which perform comprehensible functions and operate according to familiar mechanisms. This is important, as in the series presented in Venice, we also see the cores of the (imaginary) machines without their cases or covers. We are looking at machine design, as the emphasis is on their inner workings. Assuming a basic familiarity with the operation of machines, we can almost see and hear the various mechanical parts and gears moving.

As the world of new media art rapidly changed, so did Waliczky's art, and 2D computer graphic stills, which at the time had been given their own, stand-alone category in digital art events, lost their initial relevance in the digital art world. Waliczky returned to making animations, a medium to which he had been drawn as a young child, as well as interactive installations. In other words, time-based media became his dominant practice for the following two-and-a-half decades. Many of his artworks reflected on questions of optics and perspective and, in many cases, his investigations into human perception and interpretation of visual spectacles touched on the similarities and discrepancies between the mechanisms of the eye and those of the camera. In the early video work *The Garden* (1992, 1996), Waliczky devised a so-called "waterdrop-perspective-system," in which every object is perceived from the vantage point of a child. In the video, which shows a toddler moving among her toys, the world appears as a sphere with the child at its center. Thus, objects grow or shrink, depending on how the child approaches them or walks away from them. The 3D computer animation *The Way* (1994)

depicts three joggers in a system of inverted one-point perspective, where what eyes trained in Western perspective would imagine as the vanishing point has been turned into a truly infinite horizon. Because of the flipped perspective, the further an object is from us, the larger it appears, and vice versa. The vanishing point almost perfectly corresponds to our viewpoint, so that objects disappear as they near us. In the interactive computer installation *Focus* (1998), we are presented with an image of a large group of people, along with two sliders corresponding to a camera's focus and aperture rings at the bottom of the image. As one plays with these sliders, different areas of the image come into focus. These works all force us to reexamine the accepted systems of visual depiction and how we actually see the world.

Many of Waliczky's works incorporate the temporal dimension of visual perception, sometimes depicting time spatially or space temporally. Sensing and wanting to explore the limitations of human understandings of the temporal structure, in his animation *Sculptures* (1997), Waliczky gave time a spatial dimension. Sequential images played according to the rules of persistence of vision show us motion in time, of course: what is new in Waliczky's *Sculptures* is that we are given the opportunity to see these sequential images—which Waliczky has turned into 3D sculptural models that he calls "time crystals"—from various viewpoints, including from "inside" the motion. Perspective, an element of spatial perception, and speed, an element of temporal perception, are thus intertwined.

In addition to the works mentioned above, several other compositions by Waliczky from the 1990s, 2000s, and 2010s dwell on questions of optics and perspective, and in a way, the *Imaginary Cameras*, which Waliczky began working on in 2016, was a culmination of his interest in human perception and the desire to create works of art under the aegis of perceptual realism with newly developed technologies. Although the majority of the devices envisioned in the *Imaginary Cameras* series are depicted using 2D images, Waliczky nevertheless playfully incorporates ideas of the temporal experience of visual representation.

According to Waliczky, the *Imaginary Cameras* series, which consists of depictions of 24 different fantasy-image-devices—which, in fact, could be constructed—reverses the widely held trope according to which newly invented technologies inherently change our ways of seeing. Instead, Waliczky argues, an inventor's vision and worldview often predetermine the mechanisms of the apparatus and the character of the images a given device can create.

Among the 24 devices envisioned through these renderings, several involve mechanisms which refer to earlier cameras that in their own time strove to expand the limits of photography's two-dimensionality by creating stereoscopic and immersive images. In a way, as a kind of media archaeologist, Waliczky searched for forgotten devices, devices which might have once been in use—possibly even in wide use for a brief time—but which don't belong to the mainstream history of the camera, partly because what made them peculiar was replaced by cameras deemed technologically superior or, as Waliczky argues, cameras which produced images that better suited our understanding of realistic depictions of visual spectacles. Accepting a kind of technological determinism, Waliczky, by emphasizing discontinuities, nevertheless imagines a nonlinear technical history. He poses the question as to what would have happened if these side branches had been the dominant lines in the history of the camera, or in other words, if these now disregarded cameras had been further developed.

In some instances, the individual camera depicted by Waliczky in a given image involves a comparatively small change to an already-imagined historical camera or the incorporation into such a camera of a rarely-used mechanism. As Michael Pritchard writes, "Tamás Waliczky has used the history of the still and moving cameras to form his own distinctive cameras and apparatuses. He has drawn on some of the earlier technical solutions and integrated them into his contemporary designs, and in some cases, he has taken them further to develop new ways of making images."[3] For example, in Waliczky's *Stereo Camera* (2017/2018), the knob with which one can adjust—reduce or increase—the distance between the two lenses is an existing, albeit seldomly included, part in traditional stereo cameras. This knob allows the photographer to make optimal stereoscopic images, whether the objects are closer or further away. This camera is given an anthropomorphic appearance due to its two viewfinders, as opposed to the usual single viewfinder most stereo cameras have. This periscope-like design, heightened by the depiction of the camera slightly from below, may refer to the type of stereo images that had a voyeuristic—and often erotic—quality or, conversely, to apparatuses used for geographical orientation by the military during times of war.

When borrowing components from earlier cameras, Waliczky prefers obscure elements, and his sources range from 1840's America to 1960's Russia. The lensless Wolcott camera of 1840—the first camera to be patented in the United States—created not only exceptionally sharp images, but due to

the inclusion of a concave mirror in the back, a non-reversed image could be produced on the plate, in contrast with Giroux's camera used by Daguerre. Because of the concave mirror, which focused and increased the amount of light reaching the silver-coated copper plate, the exposure time was drastically shortened. Thus, the Wolcott camera could be used to make portraits at a time when inanimate objects still constituted the majority of photography's subject matter. Alexander S. Wolcott opened his commercial photo studio in New York on March 4, 1840, but his invention soon fell out of use and, eventually, it was forgotten entirely, presumably because it proved too cumbersome, as it required a comparatively large mirror to make a photograph of a reasonable size—a mirror measuring 18 cm in diameter produced an image only 5 cm^2.[4] Having examined the original patent, Waliczky borrowed elements of the Wolcott camera—namely, the concave reflecting surface in the back and the large lensless hole in the front—for his *Mirror Camera* (2017/2018). To this he added the capability of recording a sequence of images which, if taken one after the other in a relatively rapid manner, create a short motion picture. The mechanism is the following: after exposure, a lever on top of the camera is turned and the adjacent light-sensitive surface is moved in front of the large hole and thus exposed. To augment a mid-19th-century camera with the capability of producing sequential images with a temporal dimension is an entirely natural gesture on the part of Waliczky, who has been creating time-based works for decades.

Based on his own account, one of the inspirations for his *Stereo Flipbook Viewer* (2018) was a Viewmaster which Waliczky received as a child from his uncle, who lived in Canada.[5] In this apparatus, Waliczky united two types of visual illusion: the imaginary viewer shows two images simultaneously, which feature slight differences in their visual angles to create the illusion of depth, and as the images are part of two flipbooks, which include still images viewed in quick succession, watching them also creates the illusion of motion. The idea of using stereoscopic images to mix the illusion of depth with the illusion of motion has 19th-century antecedents, of course: written records suggest that even Charles Wheatstone considered a possible combination of the stereoscope with a phenakistoscope, much as the two pioneers of motion photography, Eadweard Muybridge and Étienne-Jules Marey, also toyed with the idea of joining stereoscopy and photographic animation.[6]

The combined spectacle in Waliczky's machine can be perceived by only one person at a time, so the result corresponds closely with the experience of

today's virtual reality, which viewers experience individually through headsets, or, to recall another 19th-century precedent, Coleman Sellers' 1861 stereo movie design. Sellers was awarded a patent for a device in which a series of photographic stereo views of successive phases of a moving figure were exhibited in rapid succession, and a motion picture was thus produced.[7] In Sellers' own words, "[w]hat I aim to accomplish is...to so exhibit stereoscopic pictures as to make them represent objects in motion such as the revolving wheels of machinery, and the various motions of the human body, adding to the wonders of that marvelous invention the stereoscope a semblance of life that can only come from motion."[8] But there is another aspect of Waliczky's *Stereo Flipbook Viewer* that recalls an idea familiar to us—particularly since the advent of video art—namely the aesthetic strategy of the loop, which encompasses the possibility of an infinite repetition of a short image sequence. The flipbook sequence is set into motion by mechanically turning a lever on the right. As we watch the continuous repetition of the image sequence, our conventional understanding of linear time is disrupted. Beyond the entertainment value of such imaginary and actual devices, in which illusions of movement and space intermingle, we may also recall ideas concerning the connections between time and space or time and movement contemplated by thinkers such as Henri Lefebvre and Gilles Deleuze.[9]

Panoramic cameras, which on a smaller scale recalled the immersive media of large-scale painted panoramas, were created in the very early stages of 19th-century photography. Already in 1844, for example, Friedrich von Martens invented the Megaskop, which used a rotating lens and curved daguerreotype plates. Waliczky's *Panorama Camera* (2016/2018) records a 360-degree view with the help of a special mechanism which records the immersive image in one instant, without any time passing. In a sense, we are witnessing how the desire to recreate nature by using technological developments ultimately transforms our perception of the very reality it set out to copy, as seeing a 360-degree view in one instant is beyond the human eye's ability without the help of technological enhancement.[10] Through his imaginative devices, presented as pseudo-historical artifacts, the artist reveals to us the limits of our own perception.

Other cameras depicted in the series not only suggest new ways of seeing, but also present entirely new kinds of operations, which require us to strain our imagination to visualize the results they would produce. Examples of this include the *Orthographic Camera* (2017/2018), which features 169 tiny

lenses arranged in a grid-like arrangement. These lenses record the visual spectacle in a manner devoid of any distortions, thus creating an orthographic depiction, an image that one could create with an axonometric 3D design computer program. Another example is the *Camera for Abstract Film* (2017/2018), which has no dividers between frames but produces a continuous—"abstract"—recording on a film roll. This camera uses a 16mm film which has no perforations on its sides and, as it is hand-cranked, travels continuously from one reel to the next. As the camera has no stop-gear, the film receives all the light streamed through the lens, resulting in an abstract strip of light instead of a series of discrete, still images.

While we might associate the manner of operations of some of these cameras with computer software—and knowing that Waliczky for decades has been engaged primarily with creating born-digital artworks—the question nevertheless arises as to why he decided to visualize his camera-ideas as analog devices. His compositions are in fact so plausible, their aesthetic—the numerous varieties of metal surfaces and the meticulously thought-out use of lighting—reminds viewers so much of product photography that many visitors at first glance believe they are looking at a large-scale catalog for existing analog cameras. As the artist states, "I truly enjoy the preparation. The elaboration in the fullest detail, the treatment of material, the composition. I'm filled with wonder by the fact that we humans are capable of manufacturing clumsy little metal machines, that express our perceptions and visualize our opinions of the world."[11]

Like most new media artists, when reexhibiting or reinstalling his earlier works, Waliczky is faced with questions concerning the extent to which he should aspire to recreate the "original" setup of the display or reimagine it in the contemporary technological context. This is particularly relevant when the technology used to convey the artwork is an integral part of the artwork itself. For example, between 1986 and 1988, Waliczky created seven animations called *Mobiles* which, according to his original intent, run on seven separate Atari STs. That the entire memory (512 KB) of the computers used to display the animations is used up is an essential aspect of these works. Waliczky's works created specifically for the internet are perhaps even more telling examples of the obsolescence of certain programs: several of his works from the early 2000s that were uploaded for viewing on Waliczky's webpage now display the message, "The work was designed especially for the internet, but since April 9, 2019, Adobe Shockwave is discontinued and the Shockwa-

ve player for Windows is no longer available for download."[12] While both maintenance (repairing or replacing old hardware or software to create a legacy environment) and reconstruction (using new technology to emulate an original condition) present themselves as possible options to artists and curators in presenting these works, the likelihood of hardware and software becoming outmoded and difficult to support gives artists like Waliczky a heightened awareness of the obsolescence of technology.

The problematics stemming from the preservation of born-digital artworks are, of course, not novel issues. Domenico Quaranta recalls how, around the turn of the millennium, when faced with conservation and marketability issues, many authors of born-digital works turned to creating physical artifacts—material embodiments of their works, such as printouts, videotapes, and other documentary materials.[13] It is hard to dispute the very material presence of the *Imaginary Cameras* as high-quality prints displayed in expertly manufactured lightboxes. Yet, it should also be noted that these works, with a very real physical presence, were created after the rise of the new materialist paradigm, which questions previous perceptions of matter. Digital materialism, which has emerged out of new materialist media theory, strives to regard media not as products and seeks to move beyond questions of representation.[14] I argue that these ideas are inherent in Waliczky's *Imaginary Cameras*, which the viewer can use to create imaginary photographs, films, and other images in their own minds. As Sean Cubitt has noted, "materiality has a part still to play...in the very heart of the supposedly immaterial world of binary digits," and questions regarding materiality appear in several other ways in this series.[15] The shattering of the trope of the immateriality of born-digital artworks, which inferred on such works an immunity to decay and deterioration, may be one of the underlining themes of Waliczky's *Imaginary Cameras*. This increased awareness of the physical limitations and difficulties of preserving new media by museologists and restorers led artists such as Waliczky to emphasize the connections between old and new media in the work itself.

There are several ways in which *Imaginary Cameras* engages with questions concerning materiality. The devices depicted are not simply representations of non-functional cameras, but rather tools through which viewers can create images in their own minds. The devices represented in these lightboxes call on us to use them in our imagination, to bring their mechanisms to life through the creation of our own mental images, and to envision the material qualities

of both the machines and the images they create. The images they produce through their imaginary use exist only in our minds, but are nevertheless mediated through physical processes familiar to us (like light hitting a film strip or glass plate). Partly because the trope of the immateriality of digital imaging continues to survive, Waliczky reverses these ideas by engaging us in imagined processes of immaterial, analog picture-making.

As he himself has noted, Waliczky is interested in how mistakes and imperfections can emerge through analog processes and mechanisms. Mistakes in the digital world are referred to as glitches, and they are seemingly much easier to correct than mistakes in their analog counterparts. Computer software often has the capability of self-correcting small defects caused by the materiality of digital media. Once a digitally conceived work gains analog form, however, the possibility for small mistakes and imperfections to occur reemerges, such as the appearance of a hint of blue in a black and white print. Such imperfections or differences draw attention to the material aspect of digitally-born artworks.

The playfully self-referential *Glass Plate Viewer* (2018), which can be read as a comment on the discourse among museum professionals on questions of new media art preservation, also touches on questions of materiality in new media art. In the late 1960s, at the age of nine, Waliczky created the cartoon *Bigi-Bagi's Space Travel* using his own drawings and a super-8 camera. Fortunately, this animation has survived, and it is the original super-8 color film which appears in the *Glass Plate Viewer*. Much as a museum archivist might have done, Waliczky has "digitized" his own animation from 50 years ago to include the still frames in the device. What we perhaps don't immediately reckon with is the scrupulous process of recalibration of the colors that Waliczky had to perform in order to compensate for the different—albeit imaginary—presentation of the animation in the *Glass Plate Viewer*. In 1968, viewed as a projected reel of celluloid, the projector's light would have passed through the film and beamed the image onto a screen. In 2018, viewed as a film "transferred" onto a back-illuminated glass plate, the image is perceptible only through a magnifying lens. The backlit lightbox on which *Glass Plate Viewer* is exhibited mimics the illumination the glass plate receives in the digital image. In *Glass Plate Viewer*—the last device of the series exhibited in Venice—the worlds of analog and digital, virtual and physical, imaginary and material, coalesce into one.

One way to frame the technological history of the camera would be as a series of attempts to create "realistic" visual depictions of the natural world. Even if the meaning of the term "realistic" has been the subject of continuous debate, the drive to transcend the limits of the single two-dimensional image as a depiction of a three-dimensional world moving in time has remained one of the foremost goals throughout the history of photography. Through his art, Waliczky prompts us to reexamine with greater scrutiny the manner in which we perceive and depict the world through visual technologies. He uses cameras and photography but reverses their relationship to the temporal, augmenting stereo devices with a temporal quality while subtracting the usual temporal quality of the panoramic camera. Reflections on the temporal dimensions of these pseudo-19th- and 20th-century devices stem from Tamás Waliczky's work as a new media artist engaged with the time-based dimension of visual perception, and the mechanisms of his analog machines reflect their inventor's way of seeing.

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ENDNOTES

[1] Martina Baleva, "Revolution in the Darkroom: Nineteenth-Century Portrait Photography as a Visual Discourse of Authenticity in Historiography." *Hungarian Historical Review* 3, no. 2 (2014): 363–90.

[2] Miklós Peternák, "The Coordinates of Imagination and the Shutter Speed: On the Arts of Tamás Waliczky," in *Tamás Waliczky: Imaginary Cameras*, ed. Zsuzsanna Szegedy-Maszák (Budapest: Ludwig Museum – Museum of Contemporary Art, 2019): 14–27, 17–18.

[3] Michael Pritchard, "The Historical Antecedents to the Cameras of Tamás Waliczky," in *Tamás Waliczky: Imaginary Cameras*, ed. Zsuzsanna Szegedy-Maszák (Budapest: Ludwig Museum – Museum of Contemporary Art, 2019): 29–41.

[4] Frank Smith, "Alexander S. Wolcott: America's First Photographic Genius." *Signal: Communication-Electronics-Photography* 7. no. 5. (1953): 18–20.

[5] Anna Szepesi and Tamás Waliczky, "Cameras and Other Optical Devices: Anna Szepesi's Interview with Tamás Waliczky," in *Tamás Waliczky: Imaginary Cameras*, ed. Zsuzsanna Szegedy-Maszák (Budapest: Ludwig Museum – Museum of Contemporary Art, 2019): 42–93, 84.

⁶ As living room entertainment, Charles Paul Furne and Henri Alexis Omer Tournier's "Epreuve à Mouvement" series of the early 1860s offered an albeit brief sequence of motion within a stereo card.

⁷ Homer Croy, *How Motion Pictures Are Made* (New York: Harper, 1989), 5–9.

⁸ Coleman Sellers and G. Burnham, "Exhibiting Stereoscopic Pictures of Moving Objects," US Patent 31,357, issued February 5, 1861.

⁹ Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (London: Continuum, 2004 [1992]); Gilles Deleuze, *Cinema 2: The Time-Image*, trans. Hugh Tomlinson and Robert Galeta (Minneapolis: University of Minnesota Press, 1989 [1985]).

¹⁰ This observation was made by Blandine Joret with regards to André Bazin's "The Myth of Total Cinema." See Blandine Joret, *Studying Film with André Bazin* (Amsterdam: Amsterdam University Press, 2019), 183.

¹¹ Szepesi and Waliczky, "Cameras and Other Optical Devices," 51.

¹² See *https://www.waliczky.net*. Waliczky discusses these issues concerning the obsolescence of technology in a lecture delivered at a conference on media arts preservation See also Tamás Waliczky, "As A New Media Artist, How Has My Attitude towards the Use of the Internet Changed since 1999?," paper presented at the Media Art Preservation (MAPS2020) conference at Ludwig Museum – Museum of Contemporary Art, Budapest, 2020, *https://www.youtube.com/watch?v=b9yU7f7J1UM*.

¹³ Domenico Quaranta, "Exhibition Strategies for Digital Art: Examples and Considerations," in *Museums at the Post-Digital Turn*, eds. Lorenzo Giusti and Nicola Ricciardi (Milan: Mousse Publishing, 2019): 177–98.

¹⁴ Ramón Reichert and Annika Richterich, "Introduction: Digital Materialism," *Digital Culture & Society* 1, no 1 (2015): 5–17, 7.

¹⁵ Sean Cubitt, *The Cinema Effect* (Cambridge: MIT Press, 2004).