Memory Activism. Plasticity of Digital Sculptures

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Memory culture, aesthetic resistance, and reconstruction – these are critical topics explored by various contemporary sculptural positions. Referring mainly to the (digital) sculptures of Juan Covelli's *Speculative Treasures* (2020-2022) but also to Nora Al-Badri's *Babylonian Vision* (2020) and Morehshin Allahyari's *Material Speculation: ISIS* (2015-2016), this paper deals with the technological and artistic potential of restoring and reinterpreting collective social and cultural memories within a meta(speculative)-archaeological framework. These works oscillate between cultural, translocated heritage, colonial history, and algorithm-based art in the post-digital era, claiming the digital space as a decolonial space. I propose an extended concept of plasticity, which encompasses both computer-supported, screen-based and thus coded and imagined plasticity, as well as haptic plasticity experienced via 3D printing, thereby enabling the memorial aspect of digital sculptures. Neuronal, algorithmic, and sculptural plasticity generate memory in different ways. Speculation is here considered as an artistic strategy, complemented by speculative fabulation (SF) in the sense articulated by Donna Haraway. Drawing on Wüstenberg and Gutman's concept of memory activism as an artistic mobilization or strategy, which might be more precisely termed "memory artivism", the paper further elaborates on memory as both a means and an end, being in constant flux such as mirrored in the aesthetics of digital morphing.

— MEMORY ACTIVISM
— (DIGITAL) PLASTICITY
— MALABOU
— DIGITAL MORPHING
— SPECULATIVE ARCHEOLOGY
— 3-PRINTING

1. Introduction

Memory culture, aesthetic resistance, and reconstruction – these are critical topics explored by various contemporary sculptural positions. Artistic and speculative forms of sculptural reconstruction aim to preserve cultural heritage that is threatened, inaccessible, destroyed, or lost due to war, colonialism, or ecological catastrophes. In this text, I will discuss the technological possibilities for preserving the collective memory of historical events and artifacts through digital sculpture. I propose an extended concept of plasticity, which encompasses both computer-supported, screen-based – and thus coded and imagined plasticity –, as well as haptic plasticity experienced via 3D printing, thereby enabling the memorial aspect of digital sculptures. Neuronal, algorithmic, and sculptural plasticity generate memory in different ways. Here, plasticity is understood as something that generates form, which in turn produces memory through perception. But when modeling with software, such as the "memory" of a learning algorithm, how can we make sense of a work's plasticity, and which modes of perception are being engaged? Furthermore, I will analyze speculation as an artistic strategy and memory activism (Gutmann & Wüstenberg 2021) as artistic mobilization or strategy, within this genre-specific notion of plasticity. The focus will be on one exemplary case study: Juan Covelli's *Speculative Treasures* (2020-2022), contextualized alongside other artistic positions, such as Nora Al-Badri's *Babylonian Vision* (2020) and Morehshin Allahyari's *Material Speculation: ISIS* (2015-2016). Covelli's work oscillates between cultural, translocated heritage, colonial history, and algorithm-based art in the post-digital era. My text primarily deals with the plasticity of digital sculpture, which I will explore more closely through the aforementioned artistic positions. It examines how speculative digital reconstructions can act as tools for symbolic repatriation and aesthetic resistance, highlighting their ethical, historical, and philosophical implications.

Historically, aside from the metric-physical aspects, three-dimensional plastic space is essential for a comprehensive understanding of sculpture. According to Rosalind Krauss (1977) and Gottfried Boehm (2009), sculptural space tangibly manifests on the surface of each specific object – a place of communication with the environment and a kind of membrane for external exchange. In relation to 20th-century phenomenological concepts, Johann Gottfried Herder's understanding of sculpture (1778) as a physical experience, emphasizing the growing relevance of plasticity, hints at a new status of subjectivity surrounding the artistic artifact. The reversal of the genre hierarchy that he formulated, favoring a revaluation of the sense of touch, underscores the plasticity of the sculptural three-dimensional «*Bildsäule*» (image columns) (Herder 1994, 243-326). By (optically) touching the surface of the sculptural body, recipients experience their own physical presences as both subject and object; the perception of the other person becomes an existential experience. Thus, the understanding of a sculptural object is not primarily determined by our visual perception but rather by our «binocular-stereoscopic, motion-sensitive, haptic, and kinetic view» (Dobbe 2006, 117).

The nature of the surface has a decisive influence on how a sculpture «behaves» or appears, determining whether it opens up to its surroundings

or closes itself off hermetically. In addition to Boehm's pictorial-theoretical approach, Kurt Badt understands the epoch-spanning plastic process as a «basic method» in the sense of an organic-evolutionary surface design. According to Badt, plasticity is formulated in the «*Eindringlichkeit*» (forcefulness), in the «*Auf-uns-Eindringen*» (intrusion) of phenomena, in their «*Von-innen-nach-außen-Drängen*» (pushing from the inside outwards) (Badt 1963, 136). He summarizes: «A form is called plastic when life is perceptibly displayed in a way that shapes the body» (Badt 1963, 137), [1] i.e., entities whose power is expressed at the limits of their appearance – plasticity as a characteristic of the physical with growth processes. In conjunction with the evolving interest in the aesthetics and iconology of materials, the notion of plasticity is experiencing a Renaissance – for example, in Dietmar Rübel's seminal publication *Plastizität. Eine Kunstgeschichte des Veränderlichen*, published in 2012. As an antithesis to the sculpture-typical semantics of the eternal, the author examines the characteristics of the current principle of a plasticity based on the metabolism of non-durable substances and their capacity for metamorphosis (Rübel 2012).

[1] The quotes in the text are translated by the author.

However, with the development of digital and virtual sculptures, it is necessary to examine whether the bipolar duality of the plastic-haptic and the optic-visual still holds relevance. How are media-specific parameters, such as scalability and site-specificity, altered when sculptures circulate as files online and can be printed in different sizes at any time, thus regaining their physical corporeality and plasticity? How can the associated hierarchies and canon formations be critically reflected upon? Elisabeth von Samsonow points out that the 3D printer, insofar as it becomes the apparatus of virtual sculpture, brings back into play not only a long-abandoned idea of printing in the sense of historical reproduction techniques, but also a seemingly outdated concept of sculpture (Samsonow 2007, 280). With a data set as a transcription of a physical object, one can print a sculpture.

Etymologically, the term "plasticity" derives from the Greek *plassein*, meaning "to model". Originally, it referred to something that is easily malleable, but it also encompassed the ideas of being shaped through education and practice, as well as the notions of invention and deceit. The term entered the German language in the 18th century as «*Einbildungskraft*» (imagination) and/or «*anschauende Erkenntnis*» (visual cognition), and it was Hegel, among others, who attributed it with philosophical significance (Dongowski 2002, 818). In this way, "plastic" and "plasticity" became fundamental aesthetic concepts in German aesthetics and art theory.

The French philosopher Catherine Malabou has extensively explored the concept of plasticity, drawing from medicine, psychology, and philosophy, in addition to her critical reading of Hegel. According to Malabou, plasticity does not adhere to any form-preserving principle: rather, it can both take shape and give form. She describes it as «a sort of natural sculpting that forms our identity, an identity modeled by experience» (Malabou 2012, 3). Malabou identifies three types of cerebral plasticity: the modeling of neuronal connections, their modification, and the brain's ability to heal (Malabou 2008, 17–29). She also introduces the concept of destructive plasticity, which occurs during accidents, surgical interventions, and trauma, arguing that destruction is a crucial aspect of cerebral plasticity, which restores its dialectical nature. Malabou conceives of form as movement,

considering living materials that give birth to their own form and also shapes itself through external influences (see also Malabou 2017). In her opinion, form and essence are intertwined, with the biological merging with the social. We are open to change while also resisting deformation. Plasticity, therefore, signifies openness, adaptability, and resistance; just as the brain is shaped by interactions, history inscribes itself upon it (see also Ströbele 2018, 154-156). Plasticity thus «denotes both what is *gestaltend* and what is *gestaltet*, both *Bildung* and *Bildbarkeit*» (Iacobone 2025, 7). Malabou speaks of an experience shaping the body and existence of people, leaving its traces. In this context, cerebral plasticity corresponds to the ability to shape memory and form a narrative, which is crucial here. This capacity is reflected in our lifelong ability to create new experiences and memories, leading Malabou to question what we want to do with our brain and its synaptic plasticity (Malabou 2008, 7). However, she cautions against equating plasticity with flexibility, which she views as the ideological form of plasticity – flexibility being «plasticity minus its genius» (Malabou 2008, 12). Therefore, the question should not be «To what point are we flexible?» but rather «To what extent are we plastic?» (Malabou 2008, 14). The plastic art of the brain, she argues, creates a «statue capable of self-repair» (Malabou 2008, 27-28). Malabou frequently employs artistic metaphors, especially relating to sculpture, and refers to the cerebral system as a self-sculptured structure. The self, in her view, is defined by the synthesis of all the brain's plastic processes. Referring to Malabou, plasticity is related to the digital medium and to collective memory.

2. Juan Covelli's *Speculative Treasures*

In the series *Speculative Treasures* (2020-2022), Juan Covelli focuses on translocated sculptures from Colombia's archaeological heritage, working to restore their visibility against oblivion [FIG. 1]. After studying philosophy and photography at Central Saint Martin's School in London, he is now living in Bogotá as an artist and curator. *Speculative Treasures* is based on a Generative Adversarial Network (GAN) trained to reconstruct the archaeological artifacts of the pre-Columbian *Quimbaya Treasure* in 2D. The treasure is currently housed in the Museo de América in Madrid. Covelli selected twelve sculptures from this treasure, which dates back from the 6th century BC to the Spanish conquest, and includes over one hundred burial objects from the Quimbaya people, who lived in the Cauca Valley of present-day Colombia. In 1892, the then Colombian president ceded the treasure to the Spanish Queen Maria Cristina, as a «thank you» for the support of the Spanish crown in the arbitration award on the borders between Colombia and Venezuela (Perea et al. 2013). Despite years of discussions about possible restitution, the objects remain in the Spanish museum. Covelli thus describes the intention of his artistic work as follows: «the purpose of this project is to find alternatives for the symbolic repatriation of this precious treasure using artificial intelligence as a radical tool for creation» (Covelli 2022).

For this symbolic speculative form of artistic reconstruction and virtual repatriation, Covelli trained a machine-learning algorithm using around 15,000 images of similar artifacts from the Museo del Oro in Bogotà [FIG. 2]. He utilized this data pool because he was not permitted to

[FIG. 1] Detail of brass-filled filament 3D-printed sculptures, part of the *Speculative Treasures* installation, displayed in a vitrine at the Museum of America, alongside replicas of the Quimbaya Treasure. This piece is part of the Espejito exhibition, curated by Grandeza Studio at the Museum of America, Madrid, 2024. Image credit: Marina Navarro.

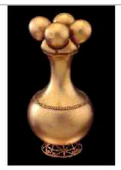
[FIG. 2] Selection tables of objects from the Gold Museum collection in Bogotá, provided by the museum's curator and anthropologist, Héctor García Botero. 2020, courtesy of the artist Juan Covelli.

Banco de la República. Bogotá D.C.,Colombia
13/10/2020

Selección inicial proyecto Juan Carlos Covelli 13/10/2020

Página 1

Registro: O00015
Función: Recipiente para cal
Forma:
Componentes: 1
Datación: 500 a.C. - 700 d.C.
Dimensiones: 23,5 x 11,4 cm
Peso: 777,7 gramos
Categoría: Excepcional
Técnica manuf. 1: Fundición a la cera perdida con núcleo en varias fundiciones
Técnica manuf. 2:
Unidad Cultural: Cauca Medio - Quimbaya Periodo Temprano



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Función: Colgante
Forma:
Componentes: 1
Datación: 500 a.C. - 700 d.C.
Dimensiones: 3,2 x 1,2 cm
Peso: 9,35 gramos
Categoría: 2
Técnica manuf. 1: Fundición a la cera perdida
Técnica manuf. 2:
Unidad Cultural: Cauca Medio - Quimbaya Periodo Temprano

Registro: O00314
Función: Colgante
Forma:
Componentes: 4
Datación: 500 a.C. - 700 d.C.
Dimensiones: 6 x 5,5 cm
Peso: 28,74 gramos
Categoría: 1
Técnica manuf. 1: Fundición a la cera perdida
Técnica manuf. 2: Martillado
Unidad Cultural: Cauca Medio - Quimbaya Periodo Temprano

Registro: O00338
Función: Recipiente para cal
Forma:
Componentes: 2
Datación: 500 a.C. - 700 d.C.
Dimensiones: 11 x 9,5 cm
Peso: 415,9 gramos
Categoría: Excepcional
Técnica manuf. 1: Fundición a la cera perdida con núcleo cerrado y tabiques
Técnica manuf. 2:
Unidad Cultural: Cauca Medio - Quimbaya Periodo Temprano

Banco de la República. Bogotá D.C.,Colombia
17/11/2020

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Página 1

Registro: O00026
Función: Palillo para cal
Forma: Con remate
Representación: Antropomorfo
Aditamentos: Con figura zoomorfa
Unidad Cultural: Calima Valle - Periodo Yotoco
Datación: 200 a.C. - 1300 d.C.
Procedencia: Restrepo (Colombia, Valle del Cauca)
Dimensiones: 30 x 2,2 cm
Técnica manuf. 1: Fundición a la cera perdida
Técnica manuf. 2:
Técnica manuf. 3:

Registro: O00029
Función: Recipiente para cal
Forma: Zoomorfo
Representación: En forma de felino
Aditamentos:
Unidad Cultural: Calima Valle - Periodo Yotoco
Datación: 200 a.C. - 1300 d.C.
Procedencia: Restrepo (Colombia, Valle del Cauca)
Dimensiones: 6,5 x 13,3 x 6,5 cm
Técnica manuf. 1:
Técnica manuf. 2: Martillado sobre modelo
Técnica manuf. 3: Ensamblado con clavos

Registro: O00080
Función: Colgante
Forma: Antropozoomorfo
Representación: Tipo Darién
Aditamentos:
Unidad Cultural: Chocó - Chocó
Datación: 500 d.C. - 1600 d.C.
Procedencia: Quindío (Colombia)
Dimensiones: 9,1 x 6,6 cm
Técnica manuf. 1:
Técnica manuf. 2:
Técnica manuf. 3:

scan the original sculptures in Madrid and, according to the artist, was also denied free access to image material.

Monetary paywalls in commercial image production are also a relevant topic of Nora Al-Badri, who used a neural network based on Mesopotamian, Neo-Sumerian, and Assyrian artifacts to create a kind of speculative archaeology (*Babylonian Vision*, 2020) [FIG. 3]. Her neural network was trained with 10,000 images from various museum collections, some obtained without permission. [2] Similarly, Morehshin Allahyari emphasized the lack of information and the problem of limited access to relevant data due to commercial image politics: «I want to protect them not only from ISIS, but from Silicon Valley, from Google, from all the tech companies in the West, from all the white men and their colonialist technologies» (Allahyari 2019). In her sculptural series *Material Speculation: ISIS* (2015-2016), Allahyari reconstructed 12 artifacts from the Mosul Museum in Iraq that were destroyed by ISIS, using digital modeling and 3D printing. In her research, Allahyari explored the concept of digital colonialism and viewed these reconstructed sculptures as time capsules that attempt to resist the destruction of history and protect memories in their «digital exile» for future societies. [3] Each figurative sculpture contains a USB drive and a memory card with text information about this endangered cultural heritage (see e.g. Ströbele 2023, 97-98). Covelli approaches translocated historical heritage speculatively through its virtual simulation to support its visibility and commemoration. In the context of the Spanish museum the treasure is somehow uprooted twice.

[2] https://www.nora-al-badri.de/works-index [6.9.2024].

[3] https://morehshin.com/material-speculation-isis/ [06.09.2024].

All three artists raise institution-critical problems of accessibility and (free) availability of image material. Today, data sets are trained with millions of images, primarily controlled by large corporations from the global North; much of the visual content also originates from these regions – a hegemonic distribution that these artists counter with aesthetic resistance in the form of synthetic, plastic images.

In the first phase, Covelli's GAN was trained to learn how to create new sculptures whose aesthetic qualities and stylistic forms were similar to those of the original objects in Madrid [FIG. 4]. The results are twelve videos, which were acquired by the same institution for the contemporary art collection, as well as 3D scans of 30 objects from the Museo del Oro. This «speculative process», as Covelli calls it, reflects a seemingly common interest and resulted in four sculptures printed in brass filament (2023-2024) in the second phase of the project [FIG. 5]. In this phase, Covelli used a different AI architecture:

> it was the artist and engineer Daniel Jiménez who offered the technological solution through a model called Transformer2NeRF. […] First, the input image is fed into a Transformer encoder, which extracts a set of features that capture the spatial and contextual relationships within the image. These features are then passed through a 3D dense neural layer or network, which produces an initial 3D model. This model is later refined using a NeRF architecture, which takes the 2D image and the initial 3D model as inputs and generates a more detailed 3D representation with considerable computational efficiency, without requiring information from all sides of the object. (Peña et al. 2024)

[FIG. 3] Nora Al-Badri, Video Stills *Babylonian Vision*, 2020, courtesy of the artist.

[FIG. 4] Scanning process of the Quimbaya Poporo at the Gold Museum, Bogotá, 2022, courtesy of the artist Juan Covelli.

[FIG. 5] Detail of the *Speculative Treasures* project website, which can be viewed at https://www.tesoro-sespeculativos.xyz/ (2024), courtesy of the artist Juan Covelli.

According to the artist, the advantage of using a Transformer encoder is that the high-resolution images can be processed efficiently, leading to more accurate 3D models that better reflect complex spatial – and one might add, plastic – relationships within the scene, favoring a more realistic and detailed figurative representation. The current plan is to make six exhibits available for download on a website, allowing them to be printed individually and thus circulate digitally on the Internet. [4] With each download to a hard drive, the narrative will be rewritten.

[4] https://www.tesorosespeculativos.xyz/ [6.9.2024].

Speculation comes from the Latin *speculari*, meaning «to observe». It describes a hypothetical train of thoughts that extends beyond tangible reality. «Speculation», according to Rosalyn Diprose, «is futural: it keeps open (past and present) worlds to potentiality, possibility, and the unknown» (Diprose 2017, 40). Referring to Alfred North Whitehead and Isabelle Stengers, Diprose emphasizes the contrast between practical thinking, abstract reflection, and empirical evidence, favoring instead introspection and prediction (futural, without a predictable outcome). Speculating, according to Naomi (now Noam) Gramlich, is a linguistic-material assemblage *with*, *through*, and *in* bodies (Gramlich 2020, 21). Gramlich suggests that «long before the speculative turn, thinking in *futurum II* and the visionary design of other pasts, presents, and futures were constitutive components of feminist, post, and decolonial theories as well as gender and queer studies» (Gramlich 2020, 9). Feminist speculation – the term stands here as a counter-program to supposedly firmly established and objective knowledge – takes the reality-constituting power and significance of fictions and narratives seriously and claims them for itself through reconfiguration. Speculation, as an ontological endeavor also characterizes Covelli's *Speculative Treasures*.

In the summer of 2024, an exhibition opened at the Museo de América in Madrid, where Covelli exhibited a 3D-printed brass sculpture in a vitrine, displayed alongside seven replicas of the original sculptures, which were created in Spain in the 1970s [FIG. 6]. The impression of physical plasticity is further emphasized by leaving the print grooves and a rough surface, the machine-produced *modelé*, suggesting traces of artificial patina. The material accumulation of the printer still refers to the original production method of a *Plastik* (from the Greek *platto*, meaning «to form», «to shape») as opposed to sculpture, which is created using a subtractive process (*sculpere* meaning «to cut», «to engrave», «to carve»). The questions are: do these speculative sculptures function as metaphorical references to the historical treasure? Is this attempt at mechanical representability and describability an artistic strategy for memory research?

Additionally, the artist personally placed a small sign with a dedication to the (so far unsuccessful) restitution attempts – without agreement, as a subversive gesture of artistic-memorial resistance. Together with additional information, the viewers might have reclaimed this sculpture in a specific historical-political context. The question remains how their memory is affected by this simultaneously preservative and subversive artistic practice?

Digital morphing – a fundamental characteristic of GAN-based art and contemporary visual culture, such as in Covelli's work – embodies the future world of ontological mobility [FIG. 7]. Unlike museums and excavation sites, these digital sculptures are neither titled nor classified. Instead,

[FIG. 6] View of the *Speculative Treasures* installation in a vitrine at the Museum of America, along with replicas of the Quimbaya Treasure. Part of the *Espejito, Espejito* exhibition, curated by Grandeza Studio at the Museum of America, Madrid, 2024. Image credit: Asier Rua, courtesy of the artist Juan Covelli.

[FIG. 7] Still image from one of the videos produced in the first phase of *Speculative Treasures* (2022), courtesy of the artist Juan Covelli.

they are strung together as an artistic-speculative archaeology. These visual worlds represent traces of memory and potentially infinite archives of objects of remembrance. The computer-generated special effects in image processing make transitions and object contours – specifically the figures' physiognomy, body shapes, and plasticity – appear fluid in a seamless transformation. This stylistic feature underscores the imagined post-humanist paradigm of fluid body boundaries rather than integral, bounded beings, as proposed by Donna Haraway and others, leading to a visualization of "becoming".

Norah Campbell and Mike Saren argue that «the concept of morphing, or flow, is almost universally regarded as positive, or at least apolitical, in poststructural theory» (Campbell & Saren 2010, 162). They use the term «morphing» to «describe the feats of an imagined technological posthumanism which cruises effortlessly and seamlessly through ontologies. […] It can have a distinctly uncanny effect» (Campbell & Saren 2010, 163). Thus, digital morphing demonstrates that technology does not oppose nature but simulates it. It leads to simulacra in Covelli's artistic research using artificial intelligence with vague references to the heritage's reality taken from a data pool without the presence of a stable referent. These alienated digital simulacra are detached from material substance and represent mainly themselves, similar to the Baudrillardian understanding (Baudrillard 1978, see also Quéau 1995, Hinterwaldner 2010, 33-41). [5] Computer-assisted data mining creates new images that express a knowledge of the heritage and encompass a fictional, sculptural aesthetic of digital plasticity in todays (post-)digital age. [6]

[5] Maybe these screen-based, sculptural images could be related to the simulacra of Baudrillard's third order, in which the real functions as an alibi for the model and cannot exceed the model (see e.g. Hinterwaldner 2010, 36-37).

[6] Thanks are due to Mara-Johanna Kölmel, who drew my attention to her blog text "Digital plasticity. From an art historical phenomenon to contemporary architectures of power" (Kölmel 2022) after I had submitted this paper. Her dissertation *Sculpture in the Augmented Sphere. Reflections at the Intersection of Corporeality, Plasticity and Monumentality* will be published in 2025.

This specific aesthetics of digital morphing allows for new intermediate images (*Zwischenbilder*), following a plasticity of alienation (*Verfremdung*) [FIG. 8]. Their fluid, sometimes distorted contours, however, give them an uncanny quality; as deforming intermediate beings, they embody a vague idea of what the original artifacts might have looked like. But how important is the specific shape, and what is the significance of each figurative distortion produced by artificial intelligence? In Covelli's case, this characterization of uncanniness may reflect a kind of artistic, metaphorical sadness, which is the result of the denied access to the original artifacts.

A material is plastic if it cannot return to its original form and resists infinite polymorphism (see e.g. Malabou 2008, 15). While the morphing sculptural image is characterized by an imagined plasticity encoded through computer programming, the printed figure is defined by its physical facticity, and thus its material, touchable plasticity. This can be experienced kinetically and succinctly through its all-pervasiveness. The contours of the digital, morphing (intermediate) images themselves are attempted to be grasped by the eyes in favor of their imagined physicality (only) evoked on the screen – as if they wanted to bring their fluidity to a brief standstill in order to see them in their entirety. The plasticity of the algorithmically generated shape visible on the screen (that is, the

[FIG. 8] *Speculative Treasures*, installation view of Futures Past (2022), arebyte Gallery, London. Image by Max Colson.

spatiality and corporeality of the virtual artifact) is enhanced by the process of morphing. Scanned three-dimensional images translated into binary codes, as seen in Covelli's *Speculative Treasure*, are retranslated into their sculptural dimension when they can be haptically experienced again through printing. This process allows the image to be accessed ubiquitously in digital form with a suitable apparatus, making its data available for download.

Covelli's digital and printable monuments address ethical, philosophical, and historical challenges through an artistic strategy of speculative archaeology. The artist approaches the original historical artifacts by utilizing fed-in image material, allowing the algorithm to evoke a virtual form of memory from this data pool; the plasticity of the brain functions in a similar way, since individual memory is often composed of fragments. Referring to Malabou, plasticity is here related to the digital medium and to collective memory at the same time.

Drawing on theories of memory research, Gutman and Wüstenberg have formulated their concept of «memory activism» (2021), which sits at the intersection of memory studies and social movement research. The two authors, who edited *The Routledge Handbook of Memory Activism* in 2022, aim to define the often loosely-used term «memory activism» more precisely. According to them, memory activism presupposes a clear memorial goal; it can manifest as a public appearance by an individual or collective action, usually emerging from grassroots movements rather than state organization. «Memory activists use memory as *the* crucial way of transforming society from below», they explain, emphasizing the belief in the transformative power of memory as central to the concept (Gutman & Wüstenberg 2021, 4). For Gutman & Wüstenberg,

it is essential to maintain a terminological and semantic value-neutrality, encompassing both democratic and anti-democratic actions. Here, I propose understanding the term as an artistic mobilization or strategy, which might be more precisely termed «memory artivism». [7] *Memory artivism* thus refers to memory as both a means and an end. Memory cultures and practices are never static; they are always in flux. Four different roles or types of relationships to the object of memory – Victims, Pragmatists, Resistors and Heroes, and Entangled Agents – determine the behavior of the respective actors. In the case of Covelli, biographical factors particularly contribute to why he could be considered a «Resistor»: someone «whose interpretations of the past have been contested in the past or are being contested in the present» (Gutman & Wüstenberg 2021, 7). Memory activists pursue the mnemonic goal of fixing memories or resisting change, for example in opposition to forgetting or a particular culture of remembrance.

[7] Referring to Stéphanie Lemoine and Samiar Ouardi's publication *Artivisme. Art, action politique et résistance culturelle* (2010), Dominique Berthet (2018) further elaborates on this transdisciplinary form of art. «Artivism» (a blend of art and activism) encompasses artistic actions that address social and political issues, reviving agitational practices in resistance to neoliberal capitalism. Using examples such as Pussy Riot and the Guerilla Girls, Berthet explains that artivism spans a wide range of approaches, from traditional techniques to ephemeral, situation-based aesthetic practices realized in public spaces or on the Internet.

Conclusion

In conclusion, although computers became an artistic medium in the 1950s and digital technologies such as CNC, augmented reality, virtual reality, and 3D scanning and printing processes have been utilized by artists since the 1980s, there has been a noticeable lack of comprehensive reflection on plasticity within sculptural discourse (see e.g. Kölmel & Ströbele 2023). While the projects by Juan Covelli, Morehshin Allahyari, and Nora Al-Badri pursue different goals, they all employ digital and sculptural media to preserve cultural heritage against oblivion through speculation, imagination, and fabulation. By doing so, they demonstrate the technological and artistic potential of restoring and reinterpreting collective social and cultural memories within a meta(speculative)-archaeological framework. These artists claim the digital space as a decolonial space. The extent to which artistic rethinking through computers and machine learning can contribute to the renewed and greater visibility of endangered, inaccessible, or destroyed historical artifacts – in the form of expanded memory artivism – is to be examined on a case-by-case basis. In this context, memory culture, aesthetic resistance, reconstruction, and canon reflection are essential characteristics, perhaps complemented by speculative fabulation (SF) in the sense articulated by Donna Haraway as a mode of attention, care and a practice of worlding where the lines between realism and fantasy are blurred (Haraway 2011; 2016, 213-218). Here, scientific, historic facts and speculative fabulation intertwine and are reconfigured in techno-based surrogates with a digital plasticity. SF traces and follows a metaphorical, technocultural thread, as seen in the digital sculptures aimed at countering forgetting. These artists are engaging in protective efforts against the loss of cultural property or the absence of restitution, while criticizing colonizing hierarchies. From an extensive pool of images, algorithm-supported digital sculptures are created via morphing, stretching the canon to the point of absurdity, ultimately leading to a cultural dead end and thus opening new perspectives.

Plasticity refers to both the physicality (or virtually perceived three-dimensionality) and the malleability of a material. In the latter sense, it also refers to the malleability of one's memory as a process of becoming – thereby circling back to Malabou's neuronal concept. The memory image and the digital image are characterized by an imagined plasticity that is imprinted in our imagination. Technologically, the algorithm encodes, models, or plasticizes the digital memory sculpture. Just as the learning process of the brain is described as its plasticity, the algorithm learns through further programming and development. In Gestalt psychology, plasticity is the intelligence factor that allows perceptions and experiences to be placed in entirely new contexts, similar to assembling a form in the mind's eye: «because with the sheer mass of data, cultural big data, [...] structures and patterns can be made visible that would otherwise remain invisible and very abstract, or that are not talked about in a society» (Al-Badri 2024). Nora Al-Badri refers to this process as *technoheritage* and questions whether artificial intelligence can process and stimulate our collective memory of the past. While «heritage» or legacy typically focuses on the past, Covelli, along with Al-Badri and Allahyari, emphasizes a speculative, more collective, and inclusive future, aiming to conceive sculptures as a means of countering forgetting. 3D processing, publication, and distribution of the files function as a tool of artistic resistance – memory artivism – against the translocation and iconoclasm of historical statues, in favor of the traditional-historical task of sculptural *memoria*. Digital sculptures demand an expanded understanding of plasticity: a coded, screen-based, and imagined plasticity, but also a haptic plasticity that manifests through 3D printing. Plasticity, in this context, is understood as something that generates memory.

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