Tokenistic behavior? Exploring Blockchain and DAOs as a participatory practice in museums

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Abstract　The paper examines the possibilities offered by decentralized autonomous organizations (DAOs) for supporting audience participation in the museum sector . DAOs, a type of digital infrastructure underpinned by blockchains and smart contracts, have been seen as informing a more autonomous, self-managing, transparent, and more efficient online organization, one capable of shaping how users participate and communicate with one another. At the same time significant questions have been raised over how DAO technologies complicate the human issues of democracy and shared authority. This paper explores and evaluates the impact of DAO structures in the context of museum participation, specifically viewing them through the lens of shared authority and democracy. It argues that these technologies are capable of offering evidence-based participation, but that this is contingent on access and trust.

Keywords　Participation, DAOs, democracy, audience engagement, NFTs

INTRODUCTION1

How could digital technologies influence or transform participation in the museum sector? And how might such engagement impact inclusivity and access? The following paper examines these questions in the context of decentralized autonomous organizations (DAOs), digital infrastructures that are underpinned by blockchains and smart contracts. DAOs have evoked powerful possibilities in potentially contradictory directions. They have been seen as having the potential to inform more autonomous, self-managing, transparent, and more efficient online organizations that could shape how users participate and communicate with one another; at the same time, significant questions have been raised over how these technologies complicate the human issues of democracy and shared authority (Chohan, 2017). In the context of the arts sector, artist Rhea Myers has described DAOs in similar terms as "a collaboration between code, capital, and community: they are the blockchain equivalent of a charitable trust" (Trouillot et al., 2022). Myers' definition of a DAO offers an interesting correlation with cultural institutions. The emergence of various types of art DAOs provides a framework in which to examine how these structures might influence or transform audience participation in museums. Relevant DAOs in the arts sector include collector DAOs such as Fingerprints DAO, artist DAOs such as Black Swan DAO, and gallery-based DAOs such as Artsect and Bright Moments (London) and, most recently, the launch of the token-based DAO in Basel by House of Electronic Arts (HEK). Together, these initiatives are currently exploring the possibilities that DAOs can offer as new avenues for membership schemes, decentralized governance, and engaging audiences. A frequent ambition is to challenge traditional structures of art funding and engagement by reconsidering the relationship between an organization and its audiences.

　　The present discussion seeks to explore and evaluate the impact of DAOs on ideas such as shared authority, participation, and democratization in the context of museum participation and theory. By this means I aim to ideate on how these structures transform (if at all) audience participation as an engagement activity, and to what extent they contribute to a 'democratizing' process in museums. My discussion is situated in the broader narrative within museum theory known as 'new museology'

and within the shift toward the 'participatory museum' (which takes a visitor-oriented approach and explores participation as a tool to engage audiences and challenge institutional authority: Simon, 2010; Vergo, 1989). The paper examines how far DAOs can contribute to this discussion by examining the key components of these digital infrastructures and how they relate to shared authority and democracy. I use the term 'museum' in a broad sense to explore audience participation; however, I will argue that the application of DAO methodologies in audience engagement is contingent on access, control, and trust. The effectiveness of a DAO is contingent on the audience (and their knowledge of the technologies involved), on what is being shared, and on the level of trust between audience and organization.

SHARING AUTHORITY AND DEMOCRACY

In the cultural sector, participation is reflective of a wider shift toward an audience-centered practice. Various external factors powering this shift include changes in cultural policy such as the changing economic landscape in governmental support across the UK, the US, and Europe (Lang et al., 2006), changes in views from within the profession and museum theory as highlighted by 'new museology' (Vergo, 1989), and increased competition and pressures from other cultural and creative experiences (Black, 2012). 'Participation' can also refer to a range of various activities, from arts attendance, artistic participation, community engagement and outreach to social activism and audience empowerment (Bishop, 2012; Brown and Novak-Leonard, 2011; Janes and Sandell, 2019; Lynch, 2011; Simon, 2010).

The focus of the discussion is on audience participation. Alan Brown and Jennifer Novak-Leonard's examination of participation as part of the wider US, UK, and Australian cultural ecologies, for example, presents five variations on audience involvement, ranging from spectating and enhanced engagement to more participatory forms such as crowdsourcing, co-creation, and audience-as-artist. Their analysis highlights how audiences gain different levels of curatorial, interpretative, and inventive (creative) control. Here, crowdsourcing might include activities such as audience contributions to an open call, co-creation might include practices such as participatory theater, whereas audience-as-artist focuses on the audience taking artistic control, as seen in, for example, Hans Ulrich Obrist's *Do It* exhibition.[1] In this way, participation represents varying forms of sharing the creative process or experience with the audience.

This idea is similarly highlighted in the discourse on arts audience participation. Nicolas Bourriaud's book *Relational Aesthetics* (2002), for example, presents a paradigm that characterizes contemporary art environments as acting as catalysts for temporal social interactions and dialogue between audience members. This concept is illustrated in examples such as Rirkrit Tiravanija's *Untitled* (1992), in which museum-goers participated in the making and eating of pad thai. Tiravanija's artwork aimed to create a form of togetherness, breaking down the artist–audience relation through social exchange to describe participation as a form of social interaction and shared art making.

However, Claire Bishop (2004) has questioned the reasoning and quality of the formed relationships in relational aesthetics art, arguing that these works lack the democratic intent associated with participation. For Bishop (2012), arts participation focuses on three key points: activating the viewer, challenging singular authorship, and reinstating collective bonds. In doing so, Bishop connects audience participation to ideas of democracy and community building, an idea similarly highlighted in Nico Carpentier's discussion of the term in media and communication. In his AIP model (access, interaction, and participation), Carpentier (2011, 2015) examines participation in relation to 'access' and 'interaction,' highlighting access as a form of 'presence' and 'interaction' as

1 https://curatorsintl.org/exhibitions/18072-do-it-2013 (Accessed December 1, 202323)

the formation of 'socio-communicative relationships' (Carpentier, 2011, p. 129). Carpentier grounds his understanding of participation in democracy theory, arguing that to conflate participation with interaction or access risks undermining its democratic potential. Carpentier further distinguishes between minimalist and maximalist participation, whereby minimalist participation is understood as a unidirectional and controlled form orchestrated by an 'elite selection,' whereas maximalist participation represents a multidirectional form of control between participants, one that aims to amplify participation among individuals (Carpentier, 2011, pp. 17, 69). For museums, Carpentier (2011) argues, these ideas represent a shift toward new museology and community-oriented practices where discourse on politics and power are made visible through museum practice.

Like Bishop, therefore, Carpentier situates participation as part of a wide democratic process founded on two key themes: the sharing of authority, and democracy. The first of these two themes is also significant in Nina Simon's (2010) work on museum participation. Her book *The Participatory Museum* identifies and establishes the various forms of participation evident in museum audience engagement practice, proposing that these distinct approaches can help institutions meet the needs of their audiences and regain a sense of relevancy through a more open structure to engaging audiences. Taking a pragmatic approach illustrated through a series of case studies and examples, she represents participation in museums in a matrix consisting of 'contributory', 'collaborative', 'co-creative', and 'hosted'. Here, 'contributory' focuses on an institutionally controlled participatory process, 'collaborative' focuses on a sharing and active process between audience and institution, 'co-creative' is oriented to long-term community engagement work in which project goals are aligned with the community rather than the institution, and 'hosted' where the institution turns over the gallery space to a community group. Simon's matrix is therefore differentiated by levels of shared control. Her 'contributory' approach reflects Carpentier's definition of minimalist participation, whereas her 'co-creative' and 'hosted' approaches are more aligned with a shared authoritative and maximal approach to participation.

Inge Zwart, taking an alternative approach (2023), presents three interpretations of what participation can do for museums and democracy. A museum can act as an *actor in democracy*, aiming to challenge the assumption of the institution's neutrality to consider how cultural institutions may play a role in social activism and empowerment (Janes, 2010; Janes and Sandell, 2019; Morse, 2020; Sandell, 1998). A second interpretation sees the museum as a *forum for democracy*. This approach considers the nature of institutions in defining national identities, social values, and civic behavior, an idea that scholars such as Eilean Hooper-Greenhill (1992), Tony Bennett (1995), Stuart Hall (1999) and Fiona Cameron (2008) have considered in the context of Michel Foucault and the logic of governmentality. A third interpretation sees participation as informing a *process of democratizing* the museum. This approach considers how participation might challenge traditional structures, emphasizing a practice of decentering institutional and curatorial authority. This idea is represented in the shift from elitist institutions as "temple-like" spaces "[whose] insistence on proven excellence" upholds the institution as an authority in presenting ideas to the public through its collections (Cameron, 1972, p. 195). In response, institutions aim to be more 'forum' and open spaces that challenge institutional authority through practices such as community programming or events. Here the Wing Luke Asian Museum in Seattle (US) offers a case in point. The Wing Luke Museum has been leading a community-led exhibition program in which anyone can propose an exhibition and the museum, alongside a group of community members known as the Core Advisory Committee, then launches the exhibition over a two-to-three-year process(Simon, 2010; Wing Luke Museum, 2023).

Zwart's third interpretation also highlights decentralization as an important theme in audience participation. Decentralization draws on Paul Baran's (1964) notable work on communication networks, which describes decentralization as a structure in opposition to centralization, whereby

reliance on one node is no longer required and instead multiple nodes are responsible for sharing communications across the network. This reflects participation: in both cases, nodes (participants) across the network are activated/encouraged to contribute control shared across the network rather than centralized within the museum. However, concerns over 'letting go' of curatorial, interpretative, or inventive authority can create a centralizing effect in museum public engagement (Adair et al., 2011), to the extent that participation does not genuinely reflect sharing authority, instead participation could even feel superficial in nature. This in turn can create a 'logic of contribution' in which participatory initiatives do little to change institutional structures or ways of working, a point particularly relevant in community outreach work (Morse, 2020).

In response to these ideas, scholars have explored how distribution might challenge these concerns and inspire institutions to re-evaluate how they use participation in their practice (Dewdney et al., 2012; Morse, 2020, 2014). Baran identifies 'distribution' as a communication network that presents a shared agency network. It differs from decentralization in that each node is in equal contact with another, whereas in decentralization, agency is distributed unevenly (Fig 1, Baran, 1964). Nuala Morse has used this concept to reflect on community engagement work, ideating on how distribution could be a way to view museums as part of a wider network in which value might flow in and beyond the institution (Morse, 2020, 2014). These ideas represent a 'shared', rather than 'sharing' authority, where the present tense of the verb is used to identify weighted decision-making, whereas 'shared' implies something that is inherently mutual (Frisch, 2011). Such ideas are difficult to achieve in practice, but such terms as 'shared' or 'distributed' prompt reflection on what participation as a practice aims to achieve and how effective current approaches are.

This focus on decentralization also prompts questions over what decentralizing technologies can do to support the sharing of authority. For example, early writers in digital museology such as Peter Walsh (1997) and Jennifer Trant (1999) have examined how the internet as a peer-to-peer network could be a medium in which to challenge the 'unassailable voice' of the institution, while bringing about new modes of communication between audiences and museums. Similarly, the adoption of Web 2.0 with social media, blogging, and platforms such as Flickr and Wikimedia has opened new avenues for museums to explore sharing curatorial, interpretative, and inventive authority. Indeed, as noted by Oonagh Murphy (2016), crowdsourcing and social media have the potential to be 'disruptive' when it comes to participation by enabling visitors to engage with and interpret collections on their own terms and perspectives. This is exemplified in social media trends such the 'Getty Challenge,' whereby during the Covid-19 lockdowns, users on Instagram attempted to remix and recreate their favorite artworks using materials found in their own homes. Similarly, engagement in Web 2.0 practices can inform what Lori Phillips (2013) has described as an 'open authority' practice, where digital content is user-generated but under the guidance and support of the institution. Cases such as the Rijksmuseum's Rijkstudio give insight into how this open approach
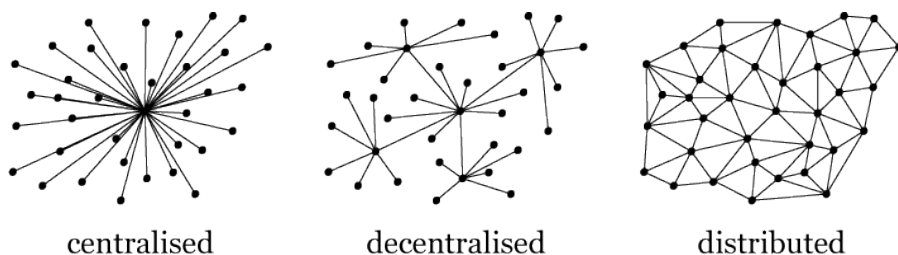

Fig. 1. Centralised, Decentralised, Distributed Networks Diagram. Source: Wikimedia commons https://commons.wikimedia.org/wiki/File:Centralised-decentralised-distributed.png

might be implemented by providing the space for users to curate and remix from the collections, but within the context of the museum website.

But such provocations are limited by issues of access and control. They therefore raise questions over how effectively technologies of this kind can be democratizing (Beaude, 2016; Gere, 1997). Indeed, access not only reflects concerns over physical access to technologies, but also highlights the technical literacy required to engage, both for the participants and for the cultural professionals managing the project (Murphy, 2019). And once again, this raises concerns about control. Participatory projects could introduce scaffolding techniques throughout the process of engagement to negotiate the openness of participation and create a more inclusive and comfortable environment for visitors to participate (Simon, 2010), perhaps by including probing questions, or having staff support or answer questions. But doing so risks over-producing the experience, which could limit the type of participation that occurs (Murphy, 2019; Simon, 2007). Here we see the intricate dynamic between supporting wider participation and sharing control, a dynamic that is extremely salient with the introduction of new decentralizing technologies such as blockchains, smart contracts, and DAOs. Indeed, to what extent can such technologies be supportive in this process of democratizing the museum, and at what cost to access and inclusivity?

BLOCKCHAIN AND MUSEUMS

Blockchain has been described as the fifth disruptive computing paradigm of the modern world (Swan, 2015), a technology which could have the same impact as mobile phones or social networking and inform an internet of value built on decentralized tokens and assets (Tapscott and Tapscott, 2018). These bold statements connect this emerging technology with a democratic intent supported by decentralized digital ownership and privacy. Blockchains are immutable distributed ledgers, well-known for the issuance of cryptocurrencies such as Bitcoin, a type of fungible token and 'money-like' technology that envisioned an alternative financial system warped by extremist ideas, most notably 'cyber-libertarianism,' that obscured the material and social function of cryptocurrencies by using them for extreme wealth creation and speculation (Golumbia, 2016). A similar effect has taken place with NFTs, a type of digital asset recorded into a blockchain that became widely used in 2021 as an alternative form of digital ownership, mostly notably after the Beeple sale at Christies in March 2021 where *The First 5,000 Days* was sold for $69 million, which helped to fuel a market with hyper-capitalism, speculation, and market bubbles over 2021 and 2022, and in so doing it fueled unequal wealth distribution across artists and collectors in that market, a result far removed from the original visions of NFTs as a democratizing force for artists in the art market (Idelberger and Mezei, 2022; Nadini et al., 2021; Vasan et al., 2022). This situates both cryptocurrencies and NFTs as part of a 'money story,' a story in which the these technologies have become deeply embedded in manipulated markets (Catlow, 2021; Whitaker & Burnett-Ambrams, 2023). They appear to have been exploited by marketization hidden "under a veneer of decentralisation" (Herian, 2018).

However, there is also a 'democracy story' to this technology that has been somewhat overlooked (Whitaker & Burnett-Ambrams, 2023). As Amy Whitaker and Nora Burnett-Ambrams describe, blockchains such as the Ethereum blockchain (the blockchain commonly used by the art market) are decentralized peer-to-peer networks that present an opportunity for democratic experiments. This opportunity is highlighted, for example, in the way that smart contracts – computer programs that can be integrated onto a blockchain and encode conditions that can be executed through transactions (Filippi et al., 2021) – can be used to create more equitable structures for artists. Smart contracts function as the management systems of NFTs and are used to mint and exchange NFTs in the ecosystem. They can automatically distribute revenue from sales of an NFT,

for example in cases where a work was collaboratively made. Similarly, smart contracts can provide more equitable structures for galleries, as demonstrated by TRANSFER gallery's *Pieces of Me* online exhibition, produced in collaboration with left.gallery, in which each work was sold as an NFT with the associated smart contract distributing sales automatically, with 70 percent going to the artist, and 30 percent distributed to every contributor of the exhibition.[2]

Decentralized autonomous organizations (DAOs) are also a key part of this story. It has been argued that DAOs provide a digital structure for coordination, shared ownership, and potentially for a digital commons (Rozas et al., 2021). DAOs refer to an organizational structure that combines human and computer coordination, using smart contracts to explore (and attempt to resolve) ongoing issues around collective action and decision-making (DuPont, 2019). Smart contracts are not legally binding, but DAOs provide a way of automating agreements, triggered by members voting. In so doing, it creates a transparent infrastructure for governing whereby decisions are recorded on the immutable ledger of a blockchain. Combining transparency with an online community, this technical framework creates a horizontal structure for consensus, enabling users who might not know each other to coordinate. A case in point is the Constituent DAO, which drew headlines in 2021 when it managed to crowdfund $47 million from users on the internet to attempt to collectively purchase a copy of the US constitution at a Sotheby's auction (Nelson and Tan, 2021).

The 'money' story and the 'democracy' story are not mutually exclusive, however, and when the cultural sector engages with DAO technology, tensions can emerge between the two. The academic literature on museums and blockchains demonstrates that the technology has the potential to affect various elements of cultural practice, including fundraising, audience engagement, preservation, and collection sharing (Jung, 2022; Liddell, 2023, 2021; Nolin and Whitaker, 2023; Stublić et al., 2023; Valeonti et al., 2021). The first museum to engage with blockchains was the Museum of Applied Arts/Contemporary Art, Vienna, when it collected *Event Listeners* (2015), a blockchain-based artwork by Harm van den Dorpel. Since then, blockchain technology has infiltrated both collecting and exhibiting (in the cases of ZKM, Karlsruhe, and the Pompidou Center, Paris), fundraising with NFTs (in the cases of the Uffizi Galleries and the British Museum), as well as exhibition design (in the case of the LAS Art Foundation's exhibition with Ian Cheng *Life After BOB,* and MoMA's exhibition with Refik Anadol, New York *Unsupervised),* the technology has also been explored as a medium for personal experience (for example in the author's previous PhD research project with National Museums Liverpool (Liddell, 2022)). From a participatory perspective, however, there are two trends – NFT fundraising and NFT mementoes –that offer reflection on how this technology can inform both a 'money' and 'democracy' story in museum practice.

To begin with NFT fundraising. This is the practice of using NFTs to create a collection campaign, sold to raise income for a cultural institution. One recent example includes the Opéra National de Paris who collaborated with the artist collective Obvious to launch their first NFT collection in March 2023. The artworks sold each contained a video overlaid with music presenting three generative works – Coryphée, Sujet, and Étoile – which reflected the dance movements and aesthetics of the four seasons, developed using AI algorithms. Collectors could purchase an NFT for 0.11 ETH (around $200) from March 14; however, not until March 21 would the collectors find out which of the three works they had bought. In addition, Coryphée, Sujet, and Étoile represent three levels of rarity, each of which provides the collector with different exclusive benefits. For example, Coryphée provides collectors with access to the collection on the Discord online channel,[3] a whitelist (early access) for future drops (collections) by the institution, and a monthly subscription

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2 See http://piecesofme.online (Accessed December 1, 2023)
3 Discord is an online platform that provides a voice, video, and text communication channels for online communities. It is typically used in the blockchain field to create a sense of community by enabling collectors to communicate with each other and the project founders (Sharma et al., 2022).

to the institution's streaming platform. Sujet provides these benefits with the addition of meeting the Obvious collective, having a tour around the Palais Garnier, and receiving a signed poster and an invitation to a rehearsal at the Paris Opéra. Étoile offers these benefits with the addition of two tickets to a performance, an annual subscription to the streaming platforms, a pair of signed dance shoes, two invitations to the season presentation, and a screening of their NFT artworks at the Palais Garnier (Opéra de Paris, 2023).

On the other hand, live minting is an emerging trend in exhibition design. Live minting allows visitors to mint an NFT in an exhibition as a type of 'digital memento.' For example, the LAS Foundation incorporated a live minting element into their exhibition of Ian Cheng's *Life After BOB*. Visitors were prompted to check in at the start of the exhibition by inserting personal data such as their birthday and their nickname, which printed out a wristband with a QR code and a unique prompt that could be used to mint a unique NFT. As the narrative of the exhibition unfolded, the production of an NFT at the end of the visit was designed to embody the experience and the themes of the experience by producing a personalized NFT for the visitor based on the personal data provided, which could be minted free of charge (LAS Foundation, 2022; Liddell, 2023).

These examples show how blockchain can inform new approaches to engaging audiences. NFT fundraising creates a kind of access token, whereby collectors gain various levels of access into the cultural institution, including access to a Discord server. Likewise, for the Paris Opéra, this online space offers a 'structure to distribute [further] content' to their collectors, enabling the institution to build a community of donors who may continue to support the institution even after the initial drop. This in turn could build lifetime value, as well as opening up opportunities for participation by giving collectors a sense of presence in the institution (Carpentier, 2015; Kelly, 1998; Nolin and Whitaker, 2023; Sargeant and Jay, 2014). A similar idea could be implemented with live minting. As a practice, this informs new customizable forms of interactivity; but these tokens could also be used to identify and collate a new online community for the institution. As above, offering minted tokens could open opportunities for new lines of communication and participation. In other words, could open up a process of democratization.

However, these practices also raise concerns about inclusivity. NFT fundraising may support the creation of new communities, but it restricts access to those who know and those who want to engage with NFTs. To overcome these technical challenges, Paris Opéra provided credit-card payment options for buyers. According to Henri Jouhad, a consultant on the project, 20 percent of buyers were purchasing an NFT for the first time, indicating that the project was accessible to those unfamiliar with the technology (WAC, 2023). However, Jouhad also noted that 90 percent of buyers were male, which suggests that the initiative failed to attract a more diverse group of donors. Although reports on NFT collectors highlight that this is changing, with more women entering blockchain and NFT field (Gold et al., 2022), this unequal ratio of male to female buyers in this project highlights the male-dominated nature of blockchains and cryptocurrencies and raises concerns about how inclusive this type of fundraising practice can be and to what extent it reinforces a monoculture of donors (Jung, 2015). Similarly, both NFT fundraising and NFT mementos highlight the tensions around engagement and money when using this technology. NFTs exist as both a commodity and an artwork, a hybrid that 'slips back and forth between art and money and manages to be both at the same time' (O'Dwyer, 2018). This raises questions over to what extent these tokens 'economize' the exhibition or the experience of visiting (Liddell, 2023; MacLeod, 2020) they reinforce the idea of the 'experience economy' (Pine and Gilmore, 1999). NFTs may be a new means to create online communities, but that new means is itself situated within a larger and speculative market, creating tensions between the 'money' and the 'democracy' story.

DAOS AND PARTICIPATION

DAOs – decentralized autonomous organizations, namely, digital structures using smart contracts and blockchains to support self-governance and collective action – can take many different forms. There are investment DAOs, such as Metacartel, which reflect a type of collective venture capitalist fund where members pool funds to support new initiatives in the blockchain field.[4] On the other hand, the artist Jonas Lund turned himself into a DAO in 2018 when he created his own token, the Jonas Lund Token, which he distributed to various stakeholders including gallerists, curators, and collectors who had supported his career. These tokens give the holders influence over the artist's future career by giving them power to submit proposals and vote on what Lund's next artistic endeavors should be.[5]

Collector DAOs have also gained notoriety in the field. Collector DAOs are museum-like in their approach in that they aim to collect, preserve, and exhibit certain artworks. For example, Fingerprints DAO, established in 2021, has the mission of preserving blockchain and smart contract-based artwork (Fingerprints DAO, 2021). Fingerprints exists primarily online through its website, a Discord server, and Snapshot (a blockchain-supported voting platform). Fingerprints is a three-tiered organization composed of a 'community' which consists of anyone who is part of the public Discord; second, 'token holders', who are community members who hold up to 5000 of the DAO's governance token called $PRINTS, they can vote on formal proposals for the DAO; and third, 'members' who are voted in and who possess over 5,000 $PRINTS and accordingly hold full membership privileges, including access to private channels in Discord and the ability to submit proposals. These latter members have an influence on major decisions for Fingerprints. In addition, members are divided into five democratically elected committees that run various elements of the DAO, including curation and acquisition, community, design and marketing, finance, and strategic partnerships (Fingerprints DAO, 2022).

A similar structure is implemented in the 'Friends of HEK' DAO, an initiative launched in the second half of 2023 by House of Electronic Arts, a cultural organization focused on art and technology based in Basel, Switzerland. Like Fingerprints, Friends of HEK consists of a Discord server and a Snapshot page for voting. Friends of HEK additionally replicates the structure of NFT fundraising, using the NFT as an access token into a community, whereby anyone can purchase one of these tokens for 0.04 ETH (60 Swiss francs)[6] to become part of the HEK community for one year. The tokens are available for purchase either via cryptocurrency or credit-card payments, and HEK provides instructions on how to purchase and validate their token to enter the Discord community. Anyone with membership can participate in discussion on the Discord server and can vote via the Snapshot platform. Recent decisions have included voting on proposals for a solo show on HEK's online platform.[7]

Emilie Sitzia has described agency in cultural participation as requiring intention (where a participant can define the goal), action (where active participation is required to achieve the goal), and outcome (where the result is aligned with the goal originally set) (Sitzia, 2019, p. 188). In principle, DAOs such as Fingerprints or Friends of HEK follow a similar procedure, with the Discord server acting as a central tool to set intention, apply action, and highlight the outcomes. The Discord server is an online space for anyone to engage with members and for a sense of community to form through asynchronous dialogue. Discord also acts as an online forum, as anyone who is part of the server can

4 See https://www.metacartel.org/ (Accessed December 1, 2023)
5 See https://jlt.ltd/ (Accessed December 1, 2023)
6 accurate at the time of writing (December 2023)
7 https://hek-house-of-electronic-arts.gitbook.io/friends-of-hek-handbook-1/decision-making-activities, https://snapshot.org/#/hek.eth/proposal/0x14c30a3dfd0dc61e5a519c3c3708e04715ec-4848c5ed123821ee8845d22f03b1 (Accessed December 2, 2023)

submit a proposal which might include potential new projects, collaborations, or new actions for the group. In Fingerprints, for example, this includes voting on new committee members (Fingerprints DAO, 2023). This is also known as 'off-chain' governance, as it is a process of governing that does not require the use of smart contracts (Reijers et al., 2021). Drawing on Rancière, Jaye Brekke, Kate Beecroft, and Francesca Pick (2021) highlight how this element of governance is critical if DAOs are to support democracy as it provides a space for 'dissensus' and the development of ideas. These authors' ideas also align with arguments made for democratic participation in cultural institutions, for example that off-chain governance could support museums in creating 'space for democracy,' where this provides a more 'forum'-like space for communication and exchange, one that could inform what Bernadette Lynch (2016) describes as a process of 'commoning,' in which common themes are found through a constant process of negotiation and creative struggle (Cameron, 1972; Zwart, 2023). Such public discourse is not confined to online spaces and indeed, initiatives like the 'constituent museum' present various examples of cultural institutions engaging in this kind of open negotiation with their audiences (Byrne et al., 2018). However, spaces like Discord are removed from the traditional spaces and associations of institutional authority. They could therefore be seen as encouraging institutions to engage with audiences in less familiar environments, as previously shown in previous community engagement projects using online games such as Second Life (Simon, 2010).

However, like off-chain, on-chain governance is also critical for DAOs, as it supports voting and automated outcomes using smart contracts (Reijers et al., 2021). Both Fingerprints and HEK use Snapshot, a platform that facilitates blockchain-based voting. For example, in the Fingerprints DAO, anyone can suggest and discuss proposals, which are then voted on by members through the Snapshot platform. These votes are documented on the Ethereum blockchain to create a record of decisions delivered in a transparent, immutable, and automated way.[8] HEK take a slightly different approach, using a combination of on- and off-chain voting techniques to create a more inclusive environment. HEK's DAO is a new form of membership scheme for the organization, and therefore aims to be an open space for members who might be unfamiliar with the technology for engaging in crypto and blockchains.[9] As such, exclusively using Snapshot becomes problematic as it requires members to access voting via a crypto wallet. This can be accessible as a web extension, but calls for a level of technical confidence and awareness to set up. Instead, Friends of HEK DAO has initially used Snapshot combined with emoji voting on Discord and Google Forms for those unfamiliar with the technology to enable these members to vote on proposals in alternative ways.

HEK exemplifies the challenges of using this type of technology for audience participation. On-chain governance is important because it provides transparent voting by recording votes permanently in the blockchain ledger. It is also important for museum participation because it forces the institution to be more accountable for its actions, ensuring that collaborative work does not reduce to tokenism (Arnstein, 1969). Indeed, transparency has also been highlighted as informing a stronger sense of trust and community, for example in the *Our Museum* initiative by the Paul Hamlyn Foundation program, Kerry Micheal from the Theatre Royal Stratford East has reflected on how extending invites to volunteers to join organizational meetings created a stronger connection and a more open dynamic with volunteers (*Transparency*, 2016). On-chain governance uses a similar idea, as it not only opens decisions and discussion to members, situating them as equals to the organization, but in addition leaves permanent traces of the decisions, thus leaving the institution open to criticism if decisions are not actioned. But on-chain assumes a level of digital literacy that many individuals lack. Indeed, as Laura Lotti and Calum Bowden (2021) note, management platforms such as DAOhaus and Colony are challenging to use even for those knowledgeable of the

8 See https://snapshot.org/#/fingerprints.eth for examples
9 See https://hek-house-of-electronic-arts.gitbook.io/friends-of-hek-handbook-1/

field, meaning that using this structure for voting risks transforming decision-making into an elitist function available only to those with the expertise to engage. In turn, HEK must compromise on this evidence-based sharing of authority made possible with on-chain governance in response to making voting a more inclusive practice.

On the other hand, concerns around inclusivity could be explored through creating an entirely on-chain governance system in which shared authority is shifted entirely into the algorithms and smart contracts. This is represented in the notion of 'autonomous governance,' which, as De Filippi and Wright (2018) highlight, creates two diverging forms of DAOs: 'less' autonomous DAOs in which governance is managed and coordinated by humans and facilitated by smart contracts (as seen in Fingerprints and Friends of HEK); and 'more' autonomous DAOs in which decisions are entirely run through code. The latter of these two approaches ideas is indicative of the early development of the DAO field, most notably of the development 'the DAO' on the Ethereum blockchain in 2016, which envisioned an autonomous investment pool for the ecosystem. The concept of 'more' autonomous DAOs embodies the free market and the cyber-libertarian logic that have driven the crypto market. Here 'the DAO' was viewed as acting as the 'invisible hand' managing and contributing to the blockchain ecosystem (DuPont, 2019). In the context of museum audience participation, this idea provokes interesting and dystopian questions about shifting authority to automation. Indeed, what would happen if an institution could encode its mission into a smart contract? To what extent can cultural value become automated? And in what ways might this challenge institutional authority? By emphasizing the role that algorithmic authority could play in reducing the challenges and messiness of democracy, these questions open up new avenues for understanding shared authority. But such ideas situate this approach in a neoliberal and free market logic, instrumentalizing culture as a source of value rather than democracy.

However, in less 'autonomous' DAOs, these discussions on types of governance raise concerns over representation which interlink with Pierre Bourdieu's (1986) model of social, cultural, and economic capital. While cultural capital has been used to define the barriers to arts participation, economic and social capital raise similar problems arising from the use of DAOs. For example, in Fingerprints, anyone can participate in off-chain governance, but only members can vote for proposals; and to gain membership, members must attain 5,000 $PRINTS, equivalent to around $4,450.[10] This requirement for large sums of economic capital is a common practice in DAOs as it is seen as a method of encouraging a 'skin in the game' attitude (Schneider, 2021). This was reflected in the Friends of HEK DAO, though to a lesser extent, as the cost of the NFT was equivalent to the organization's original membership scheme (60 Swiss francs) and therefore presented governance at a lower cost. Nevertheless, this approach to access risks producing a plutocratic system that is embedded in the 'money' story mentioned earlier (Chohan, 2017; Schneider, 2021).

This risk can be mitigated through providing free membership to individuals. However, DAOs have also been seeking alternative approaches to fairer forms of democracy that can address these issues of plutocratic governance. These include quadratic voting (QV), a tool representing a radical form of democracy in which 'voting is squared,' making voting proportionally weighted based on how strongly the voter feels about a proposal. The approach aims to maximize general happiness while providing everyone with agency and freedom to express their views (Lalley & Weyl, 2018; Posner & Weyl, 2015).

QV or weighted voting is a common tool in DAO structures that can be used to support a commons-based logic (Rozas et al., 2021). Rather than buying in votes, QV can create a system where votes are distributed based on an individual's characteristics, for example their location relative

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10 Based on a 0.89 dollar exchange rate https://www.coingecko.com/en/coins/fingerprintsdao (Accessed December 2, 2023)

to a gallery, as demonstrated by CultureStake. This project, developed by Furtherfield Gallery, London, along with Sarah Friend and Andreas Dzialocha, uses a QV and web-based voting system underpinned by blockchain technology to give local communities a voice in the commissioning of local artwork and other cultural activities in their area (Catlow & Rafferty, 2022; Haus der Kunst, 2022). In so doing, it aims to democratize art commissioning and enable people to have a stake in the cultural activities in their local area. The initiative was actioned as part of Furtherfield's People's Park Plinth project at Finsbury Park, London, in 2021.The aim was to capitalize on the park as a space for public art by creating a range of mixed-reality experiences that could be voted on by those who live in the surrounding areas. Proposals for these experiences were added to the CultureStake web-based app, and members of the community could vote through QV using 'vibe credits' whereby the number of credits a person received was based on how local the park is for them,, meaning that those who are most impacted by the project gain the most leverage in voting (Furtherfield, 2020, 2022).

The CultureStake project illustrates how QV could inform community-based practice if the technology is used to democratize decision-making over public spaces so as to enable those who live locally to have a say in future commissioned works. CultureStake also shows how this technology could be used in a more accessible format with voting implemented through the CultureStake app, which would mean digital literacy skills on a par with those required to engage with social media or smartphones. This brings us back to the issues of access and control raised earlier, where we saw that use of an app can make the underlying technology more invisible to the participant and thus enable them to engage with the process of governance without requiring additional digital skills. The Black Swan DAO takes this invisibility one step further. Their QV app engages with these ideas without using blockchain technology. Black Swan DAO is an artist-based DAO based in Berlin that aims to challenge current arts funding by using QV to redistribute art funds across its members.[11] The Black Swan DAO's app, Signet, offers QV for proposals among established artist communities in which any member can submit a proposal for a project within a funding phase based on the moon's cycle. Members are given one hundred 'voice credits' which can be used to vote across the proposals, while QV is used to give weighted emphasis. Significantly, rather than engaging with blockchain technology directly, Signet leverages the ideas from this field to develop an alternative funding system for artists (Lotti and Bowden, 2021; *R&D Labyrinths*, 2021).

The example of Signet reinforces the underlying question throughout this discussion – when are blockchain and a DAO needed? I made the case above that blockchains and on-chain governance can support a stronger sense of community through more transparent and documented voting. These ideas are important in spaces where large numbers of participants are coordinating together who may not know one another. In other words, blockchain is important in facilitating a sense of trust between individuals. This is evident in cases such as Fingerprints or HEK where members are situated across different countries and therefore there are no established bonds or trust between members. Similarly, this practice can be useful in cases where institutions feel a need to create a stronger sense of accountability by leveraging the technology as a tool to evidence shared authority. But as discussed earlier, this approach compromises on access, raising questions over who gains access to voting and how effective the evidence-based shared authority can truly be. This therefore presents an interplay between control, access, and trust – an interplay that depends on who is being engaged, what levels of access they have to the technology, how much trust is evident already, and how much needs to be built through participation. The answer to these questions will shape how effective blockchain technology can be in supporting audience participation where the technology's main role is to be a mediator of trust and to build connections through evidence-based shared authority.

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11 See https://blackswan.support/

CONCLUSION

Novelty, Carpentier (2009) writes, is a term that challenges participation: it can feed into a technological-determinist model in which certain technologies are assumed to be more participatory than others, which can lead to the neglect of 'old' media. DAOs are similarly at risk from novelty in this sense. As decentralized structures, DAOs use blockchain technology to support evidence-based shared authority, centered on transparent and accountable voting systems. But the effectiveness of this approach is contingent on access and established trust. Why use this technology, for example, when there are strong bonds between participants already? Or when few participants are confident in directly doing so? Likewise, it is important to clarify that the technology does not inherently produce participation, but simply facilitates it. What kind of authority is shared depends on the institution and on their decision to 'let go.' Indeed, in the case of HEK, the DAO initiative presents a 'contributory' style of participation to the extent that members can vote on proposals, but these proposals are put forward by the organization (Simon, 2010). In this respect, how decentralized can DAOs really make cultural organizations?

But DAOs are also autonomous, an idea that could transcend the messiness of human democracy and participation by replacing humans with algorithms. This could embody a dystopian alternative future, situating algorithmic participation as part of a libertarian ideal in which cultural value can be quantified and reduced to code as a way of addressing the complexities of finding human consensus. Nevertheless, such ideas indicate that, while participation is often complex, the process in itself is of far greater value than the decisions made. In this way, shared authority remains a challenge, but one that at its core is part of democratic cultural organizations.

Lastly, DAOs are also organizations: collectives of individuals coordinating under a common goal. This paper has presented four examples of collectives attempting this in a democratic and participatory way using DAOs as structure or inspiration. DAOs are not suited to every cultural organization, and, as the examples have shown, they are structures that align most with audiences that are technologically oriented. But DAO methodologies offer a renewed conversation about what sharing authority and democracy might mean for audience participation.

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