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The Museum of Data

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Introduction

When it comes to speaking for the social in or of digital systems, it can often feel like social scientists are stuck in a discursive and contradictory loop, in which they reiterate the point that the social and technical are mutually constitutive, but focus their practice and analysis far more on the social than on the technical. Thus, despite the widespread academic acceptance of the concept of the socio-technical in which, as the editors point out in their introduction, the social is always already to be found woven through and produced by technical systems rather than somehow separate from them, in many contemporary digital settings it is still hard to escape the notion that the

technical is in fact beyond the social scientist altogether. Their role is rather to bring the social back into view as part of digital practices or objects that have traditionally been rendered socially neutral. For example, when analysing data-driven or algorithmic systems, social scientists often work to make social aspects of these systems explicit beyond the technical. Just as there are limitations to social systems whereby participation is affected by age, gender, and so on, there are also limitations to participation in technical systems, which often reflect the so-called "social biases" of those who have built them. One example is the recent debate about how such biases inform supposedly neutral algorithmic decision-making (e.g., Sweeney 2013). In cases such as these, when social scientists speak for the social within the socio-technical, it is often an act of revelation: making visible what was there all along, just hidden from view.

However, there are (at least) two problems that arise from this move. The first is that the digital is often used to conflate social participation and social consciousness: to make explicit the social constraints of digital systems does not necessarily effect any change through deeper understanding of those systems themselves. The second is that even if social scientists speak for the social in the socio-technical, this depends on an initial separation, from which a

particular set of relations can subsequently emerge. By framing the social as something that can be, and needs to be, made explicit or revealed, the emergent technical side of many digital systems is then easily characterized as being too complex or too obscure for social scientists to get a grip on, too distributed or too immaterial for qualitative methods to encapsulate – in short, as beyond us (see Burrell 2016). As the social is made transparent, the technical remains opaque.

This revelatory practice therefore requires, alongside this emphasis on visibility, a practice of reflexivity: a critically positioned intervention by which the implicit is made explicit and visible. In this chapter, we draw on museum practices, the organization of knowledge objects through processes of recognition, collection and appropriation, objectification, conservation, ownership, curation, classification, to develop a form of reflexive practice that interrogates the representational and revelatory politics that may be understood to speak for the social in digital objects. In so doing, we critique some of the representational practices that underpin the particular ways in which the social is made visible, arguing instead for a perspective on digital objects inspired by the ways in which objects are entangled explicitly within practices of classification in museums.

Speaking for the social has a long history within contemporary material culture studies, but there are tensions between ways in which objects may be used as narrative devices to represent the social, for instance in the influential idea of "object biographies" (Koptyoff 1986; Hoskins 1998; Lamb 2011) and approaches that rather understand objects as agents, or actants, within social relations. Recent critical turns within classification and museum practices translate what can sometimes feel like the analytic cul-de-sac of theoretical writing into a series of engaged practices that require both the development of reflexive practices, and the translation of this reflexivity into practices of collection, classification, containment, and care (e.g., see Bennett et al. 2017). We draw on this scholarship to further explore the opacity of the technical, and how the social is understood analytically to be something that requires revelation. Even if speaking for the social is a crucial analytical position to keep asserting in many contexts of digital or technological design, we ask whether we might also consider other forms of practical engagement with the social as, for example, "caring for the socio-technical"(see Geismar 2022).

The experiment we are developing to investigate these questions is a Museum of Data (MoDa), an

online, open access database and curation platform that allows people to upload "data objects" to its collection. MoDa requires analysts to become curators and to develop their understanding of data objects through a form of reflexive practice – in this case, cataloguing. Museum catalogues make their world, as much as other databases or algorithmic systems, organising social relations, temporalities, and agencies. What, then, does the frame of the museum, or the museum as a technical machine for simultaneously creating and representing the socio-technical, bring into these debates? Why a museum over a database, a website, a blog, or even an essay? The MoDa constructs a social relationship that is figured by demanding the curator-cataloguer to reflect upon the categories that they need in order to classify and understand the form that they are trying to capture. Using the museum as an exploratory device, we use MoDa to investigate the interdependence of digital form and content, and make explicit the interpenetration, and recursivity, of social and technical imaginaries. By unpacking the ways in which digital knowledge architectures both produce and contain digital objects, we are inspired here by indigenous critiques of digital knowledge systems, which have galvanised movements to "decolonize the database" (Verran and Christie 2014). As Elizabeth

Povinelli puts it: "the task of the postcolonial archivist is not merely to collect subaltern histories. It is also to investigate the compositional logics of the archive as such: the material conditions that allow something to be archived and archivable; the compulsions and desires that conjure the appearance, and disappearance of objects, knowledges and socialities within an archive…" (Povinelli 2016: 149). Where many digital systems remain opaque, museum databasing in this context is increasingly rendered transparent, therefore opening up the possibility of participation, intervention, and transformation (see Geismar 2012).

The development of MoDa is a collaborative and ongoing process between two anthropologists and an interaction designer also involving several generations of students working across a range of different academic programmes. In the chapter, we demonstrate what we see as the practical efficacy thus far of such a deliberately reflexive digital platform, in which the "compositional logics" of the platform itself are under constant scrutiny, objectified through the conventions and format of the museum. Such an approach allows us to shape the museum in response to the conceptual and classificatory challenges of the objects it contains. However, this strategy still operates within a limited representational idiom, which relies on a

dynamic of revelation and concealment. In the last section of the chapter, we return to the problem of the opacity of the technical, and gesture towards some alternative dispositions that could be cultivated towards caring for the socio-technical, in which what is privileged is not so much visibility but the labor that goes into creating representational systems, as well as digital forms themselves.

Objectifying data objects

We developed MoDa as a digital platform that invites reflection not only on the nature of digital objects but on how digital systems create knowledge about the digital. This question is posed explicitly through the museum, by asking the visitor/contributor to imagine the digital as a kind of object made visible within the framework of a collections management system. It therefore provokes a deliberate confusion between what is inside and outside, asking us what the digital catalogue is made of whilst at the same time exploring the nature of the data or digital objects which populate the museum's collection. MoDa is an experiment in engaging with technical systems by asking those who participate in it (including us as its designers) to make explicit the social worlds that are being woven through and produced by such

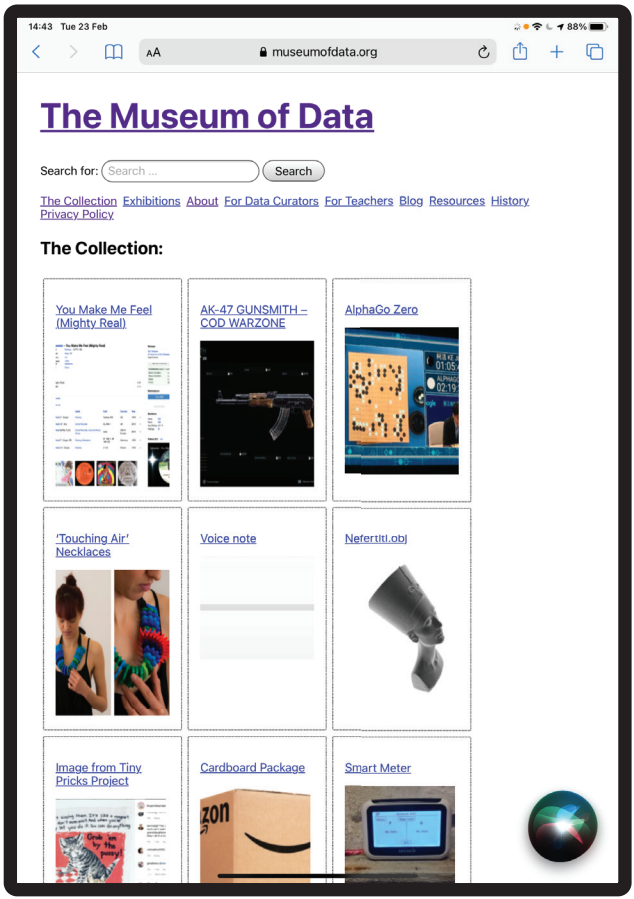
systems. One of the issues MoDa confronts is that the academic study of the socio-technical has tended to focus on projects in the global north, and the digital is presented in relation to a variety of conventions familiar to that locale. Many mainstream discourses of the commons and the public sphere, open access, private property, and also activism, obfuscation, and interference, contain a number of assumptions about the digital as a socio-technical form prefigured by individual users, existing in collectives structured by socio-political arrangements that have emerged through the long history of European sociality, in particular as it has emerged under or in response to capitalism (the corporation, the nation-state, the cooperative, and so on). These are processes in which technical systems have already been implicated as important social actors (see Kelty 2008). Data from anthropology often challenges these universalizing accounts of the social, highlighting how local knowledge systems have become a way to challenge globalized notions of individual ownership, the public and the commons (see Christie and Verran 2013; Leach and Wilson 2014).

MoDa uses the recognizable form of a museum cataloguing system embedded within these histories (see Turner 2016) not only to permit a handhold on

complex digital phenomena, but also to force us to reflect on the constraints, limitations, and affordances of the platforms and systems of organizing knowledge (see Geismar and Mohns 2011). By reconstructing or seeing data as objects in the time and space of the museum, MoDa works by asking people to make explicit how the social and the technical are always imbricated in each other in a variety of different ways, and to explore the impact that representational practices have on our awareness and understanding of this relationship. Contributors have to think about the provenance and social relationships that constitute any digital object, and subsequently about the social forms the object accrues around it. At the same time, they have to think about the museum itself as a data object, and engage in the constraints and possibilities of available methods of collecting, curating, classifying, and archiving: what languages do we use, what epistemologies frame our concepts, keywords, and categories? Each reflection on such questions could potentially change the system itself.

The database as a knowledge machine

In order to construct the MoDa, we worked through a number of different prototypes. Our ambition was to create a recursive system which demanded the data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Search for:
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The Collection Exhibitions About For Data Curators For Teachers Blog Resources History Privacy Policy
The Collection:
You Make Me Feel (Mighty Real)
AK-47 GUNSMITH – COD WARZONE
AlphaGo Zero
'Touching Air' Necklaces
Voice note
NefertitI.obj
Image from Tiny Pricks Project
Cardboard Package
Smart Meter

Fig. 10.1: Screenshot of the MoDa's Collection Interface. Clicking on any of the objects will take you to a classification page with a further description and reflections on that object.

inputter/curator to reflect on their own categories and to continually change not just the data contained within the database, but the fields which organize the data. In this way, we imagined that each data object would recalibrate the MoDa, changing the ways in which all the other objects could be conceptualized.

We started with an open source collection management system used by many different cultural institutions called Collective Access, and used the install that had been custom-designed by the New Museum in New York to manage their digital archive. That system proved to be more rigid than we had anticipated, so we moved to a bespoke system built entirely by Joel, the interaction designer on the team, in Django, because of its simpler, and more flexible functionality. We quickly became aware that the more bespoke a platform, the less sustainable it would be in the long term, as no-one other than the Joel had the technical expertise to be able to continually reconfigure the system. As Joel commented:

> The problem is that many software projects don't do what they claim to do! Bit rot, or the decay of software

> through time or neglect is also a real problem. The solution from a technical standpoint was to stay agile, not to get locked into a particular technical platform and instead concentrate on the outcome for the end user, rather than the most technically expedient outcome.

Our third and current prototype was made using the popular blogging platform Wordpress and the plugin Advanced Custom Fields. The site then was built within a typical blog interface and worked within this platform to simulate the fields common to museum systems of classification, hopefully drawing attention to representational conventions and knowledge hierarchies within these popular digital forms.

Each entry is set within a template that asks the data curator to consider a number of different aspects of the data object. All data cataloguers/curators are also able to edit the master template, changing and adding to the list of qualities and categories that are being used to think about the data object. Some of these categories come directly from the world of museums: there is a space for a public facing (easily digested) caption, a space for comments and notes for the museum which may or may not be made public. Several entries emerge directly from the object worlds created by museum systems: cataloguer/curators are asked to reflect and input information about

the object's materials, size, maker, copyright, date of creation, and language. Other entries emerge from consideration about the issues that data provokes: users are asked about the object's location, and are asked to link this object to others in the museum as well as to a range of conceptual keywords or tags. Users are also able to add other categories, comments, notes, and keywords. Any user can change the instructions for inputting or add new imperatives to the catalogue, although this is not demanded of them by the system. In this way, MoDa also requires participants and users to think about how much they want to shape the system itself, or simply use the suggested structures created by others. Whilst MoDa requires participation, not all forms of participation will equally engage with the challenge of form: some may provide content, others may restructure the nature of the collection itself. The practice of entering data, of being a data curator, therefore continuously reenacts the recursive relationship between the social and the technical, but also draws attention to aspects of this which might be muted or hidden or which might be made explicit depending on the interests and positioning of the curator.

As we developed MoDa, there were a number of lessons we learnt about relationship between databases, museums, and data as a curatorial object, that

helped us in understanding the complex ways in which digital classifications can be seen to speak for the social. First, despite the capacity for endless iteration and the potential for the bespoke afforded by digital systems, it quickly became clear how profoundly normative collections management systems are, driving the user towards standardization on multiple fronts. Because of the limitations of both technical expertise and commitment of participants, this push towards standardization is pragmatic. Few people want to reflect intensely on every category and term that they are using, and even fewer have the knowledge and skill to be able to easily navigate technical systems (even in Wordpress, a widely used platform). Standardization is also necessary to speak across the single record or individual entry to draw together genres, categories, and forms of collective knowledge. This leads to a second conceptual front of standardization. As knowledge systems grow, it is necessary to develop forms of standardization to be able to forge connections between disparate concepts and objects and, as the system grows, to manage these potentially infinite relationships. What, then, does this preset of standardization mean for our ability to construct a system that might make the socio-technical visible and what does it do to our reflexivity? What are the social presets that are coming to structure our understand-

ing of data objects, and where do they actually come from? What social normativities and assumptions are regularized or magnified through this process?

Below are some excerpts from the classification template of three objects uploaded to the MoDa by three different people, in which we show how the act of classifying different data objects according to some simple museological questions – What is it? Who owns it? Where is it? – brings the social relations that constitute them into view in particular ways, and how that then leads to interrogations of, and in two cases modifications of, the presumptions underpinning the classification system itself.

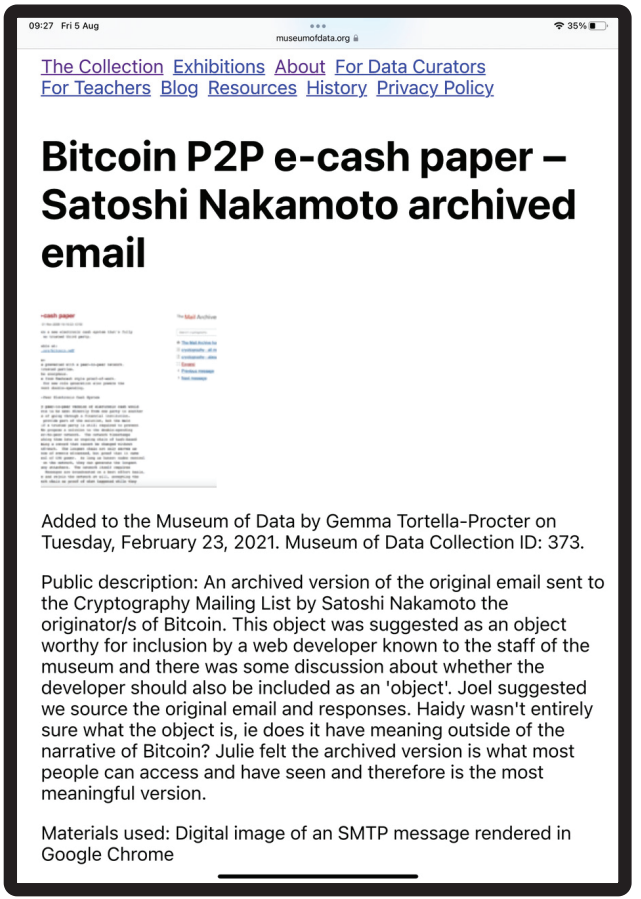
What is it?

Exhibit 1: P2P e-cash paper - Satoshi Nakamoto archived email

By Gemma Tortella-Procter

Fig. 10.2 (overleaf): Bitcoin P2P e-cash paper – Satoshi Nakamoto archived email (on display at the Museum of Data).

Fig. 10.3 (overleaf): Internal description of data object in the Museum of Data files.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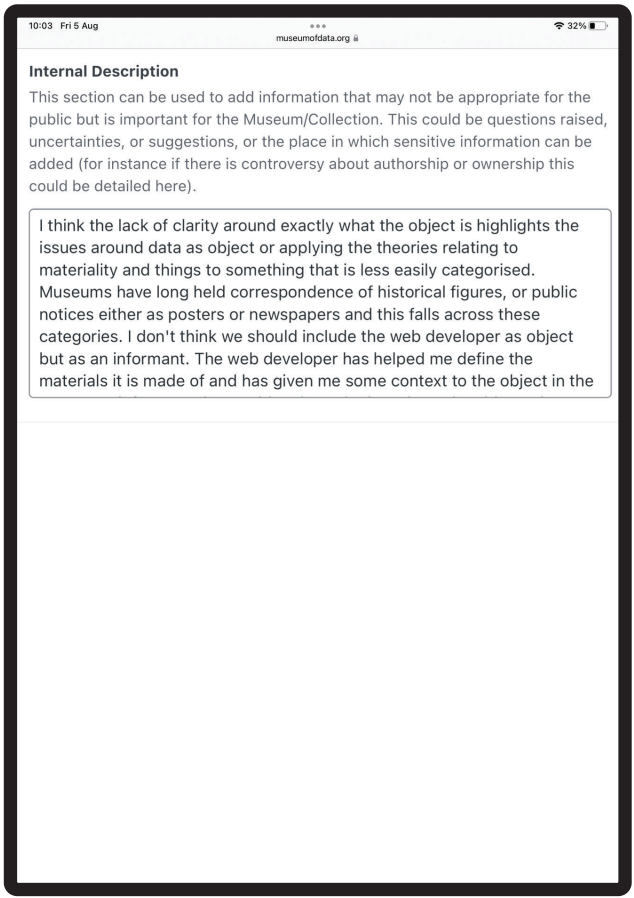
The Collection Exhibitions About For Data Curators
For Teachers Blog Resources History Privacy Policy
Bitcoin P2P e-cash paper – Satoshi Nakamoto archived email
Added to the Museum of Data by Gemma Tortella-Procter on Tuesday, February 23, 2021. Museum of Data Collection ID: 373.
Public description: An archived version of the original email sent to the Cryptography Mailing List by Satoshi Nakamoto the originator/s of Bitcoin. This object was suggested as an object worthy for inclusion by a web developer known to the staff of the museum and there was some discussion about whether the developer should also be included as an 'object'. Joel suggested we source the original email and responses. Haidy wasn't entirely sure what the object is, ie does it have meaning outside of the narrative of Bitcoin? Julie felt the archived version is what most people can access and have seen and therefore is the most meaningful version.
Materials used: Digital image of an SMTP message rendered in Google Chrome


10:03 Fri 5 Aug
32%
museumofdata.org
Internal Description
This section can be used to add information that may not be appropriate for the public but is important for the Museum/Collection. This could be questions raised, uncertainties, or suggestions, or the place in which sensitive information can be added (for instance if there is controversy about authorship or ownership this could be detailed here).
I think the lack of clarity around exactly what the object is highlights the issues around data as object or applying the theories relating to materiality and things to something that is less easily categorised. Museums have long held correspondence of historical figures, or public notices either as posters or newspapers and this falls across these categories. I don't think we should include the web developer as object but as an informant. The web developer has helped me define the materials it is made of and has given me some context to the object in the

In our first exhibit (curated by UCL Digital Anthropology MSc alumnus Gemma Tortella-Procter), we focus on the idea of materiality, and specifically how a mundane data object such as an email can lead to a debate around digital materiality. The process of classifying this particular data object threw up a number of provocations: what exactly is being archived – is it the idea behind the email? Is it the original email, and is there such a thing as an original email? What is an email made of, is it the same as a letter or a note? Should the person who drew this object to our attention also be in MoDa somehow? Part of the value of this data object for the MoDa lies in the idea that it is the first glimpse of something that has now become a culturally salient financial phenomenon: bitcoin. However, it is exactly the notion of authenticity, and the related sense of individual rights and claims of ownership, that considering this email as a data object challenges. Likewise, the "author" of bitcoin also remains a mystery, and could even be multiple people. This exhibit throws into sharp relief how data objects we deal with everyday digital data, like emails, can call into question basic presumptions about what information is and how it relates to people. It also prompted a discussion around what the most meaningful criteria are for deciding which of the multiple materialities of the object might be the most

worthwhile for MoDa. The artifice of the museum exposes specific challenges that these data objects raise for systems that were designed with singular artifacts owned by single institutions in one location, including MoDa itself.

Who owns it?
Exhibit 2:Nefertiti.obj
Haidy Geismar

Exhibit 2 is another form of data object, curated by Haidy Geismar, that interrogates simple relationships of ownership by bringing materiality into view, although this time the object is far from mundane. Here, a physical object is transformed into a digital one, and in so doing a whole vista of issues around the contested ownership of both objects opens out. It forces us to ask what the relationship is between the original object, the bust, and the digital scan of that object, and to confront the ways in which this contested relationship can imply different regimes of ownership: the Berlin Neue Museum's claims to have rights over the physical bust of Nefertiti are refuted by the Egyptian government, and both claims are flaunted by the artists, Nora al-Badri and Jan Nikolai Nelles, who released the data object open access but also have a claim over it as part of their

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museumofdata.org

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Nefertiti.obj

Added to the Museum of Data by Haidy Geismar on Saturday, August 31, 2019. Museum of Data Collection ID: 362.

Public description: Al-Badri and Nelles scanned the head of Nefertiti clandestinely in the Neues Museum Berlin without permission of the Museum and they hereby announce the release of the 3D data of Nefertitis head under a Creative Commons Licence. The artists 3D-Print exhibited in Cairo is the most precise scan ever made public of the original head of Nefertiti. With regard to the notion of belonging and possession of objects of other cultures, the artists intention is to make cultural objects publicly accessible. The Neues Museum in Berlin until today does not allow any access to the head of Nefertiti nor to the data from their scan. “With the data leak as a part of this counter narrative we want to activate the artefact, to inspire a critical re-assessment of today’s conditions and to overcome the colonial notion of possession in Germany” the two artists say. (source: http://nefertitihack.alloversky.com). The object uploaded here is the .obj file which was made downloadable from the artist's website or as a torrent file. This data file allows the user to print their own version of the bust of Nefertiti or play with the data.

Materials used: Kinect scanner, hacked data, 3D printed media

Fig. 10.4: Nefertiti.obj: image of scan of the head of Nefertiti.

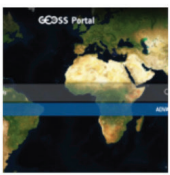
artistic production. Is the data object, here archived in the MoDa as an independent entity, detached enough from the physical object to permit a new set of property relations altogether? The digital and the physical mirror each other here, both in the contested ownership claims, but also in the way that experts have refuted the authenticity of the data object . The fact that the MoDa is now displaying this as part of its own collection, and suggesting another ownership regime to the list of more conventional ones, that of "hacked content disrupting all rights regimes" points again to the way in which data objects might accrue conflicting property regimes around themselves.

Where is it?
Exhibit 3: Group on Earth Observation System of Systems

Fig. 10.5 (overleaf): The Group on Earth Observation Systems of Systems, GEOSS: a global environmental data portal.

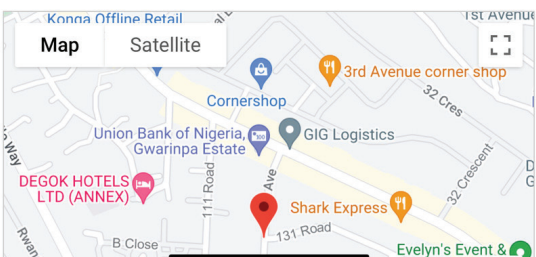
Fig. 10.6 (overleaf): Internal description of data object in the Museum of Data files.

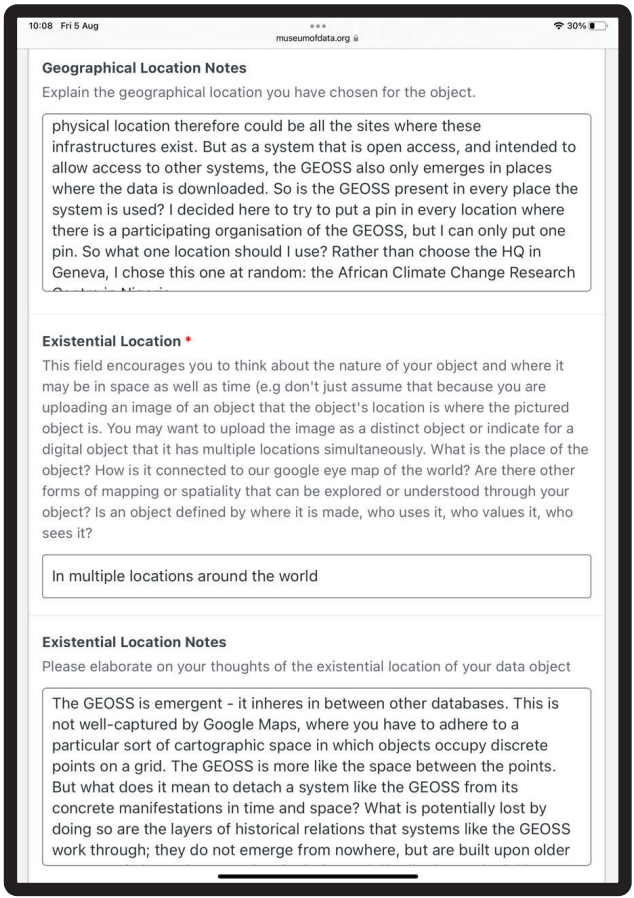
The Group on Earth Observation System of Systems



Added to the Museum of Data by Antonia Walford on Friday, August 5, 2022. Museum of Data Collection ID: 369.

Public description: The Group on Earth Observation System of Systems (GEOSS) is a global system of Earth Observation data retrieval, created by an international network of over one hundred government and commercial organisations and academic institutions (The Group on Earth Observations). The GEOSS connects up existing Earth Observation data infrastructures all over the world into one open access data resource.

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museumofdata.org
Geographical Location Notes
Explain the geographical location you have chosen for the object.
physical location therefore could be all the sites where these infrastructures exist. But as a system that is open access, and intended to allow access to other systems, the GEOSS also only emerges in places where the data is downloaded. So is the GEOSS present in every place the system is used? I decided here to try to put a pin in every location where there is a participating organisation of the GEOSS, but I can only put one pin. So what one location should I use? Rather than choose the HQ in Geneva, I chose this one at random: the African Climate Change Research
Existential Location *
This field encourages you to think about the nature of your object and where it may be in space as well as time (e.g don't just assume that because you are uploading an image of an object that the object's location is where the pictured object is. You may want to upload the image as a distinct object or indicate for a digital object that it has multiple locations simultaneously. What is the place of the object? How is it connected to our google eye map of the world? Are there other forms of mapping or spatiality that can be explored or understood through your object? Is an object defined by where it is made, who uses it, who values it, who sees it?
In multiple locations around the world
Existential Location Notes
Please elaborate on your thoughts of the existential location of your data object
The GEOSS is emergent - it inheres in between other databases. This is not well-captured by Google Maps, where you have to adhere to a particular sort of cartographic space in which objects occupy discrete points on a grid. The GEOSS is more like the space between the points. But what does it mean to detach a system like the GEOSS from its concrete manifestations in time and space? What is potentially lost by doing so are the layers of historical relations that systems like the GEOSS work through; they do not emerge from nowhere, but are built upon older

Antonia Walford

Exhibit 3, curated by Antonia Walford, speaks to questions of location. In being asked to pinpoint the location of a distributed, or "global,"digital system like the GEOSS, what is made clear is that having to situate it in only one place reveals deeper hierarchies within the system. Understanding location as singular enforces a particular view of the object. The GEOSS HQ is in Geneva, Switzerland, but stating that this is where the GEOSS "is" would not only fail to capture its distributed nature, but also eclipse the other 132 participating organizations, many of which are in the global south. Stating that the GEOSS is in Nigeria brings forth a very different set of political possibilities to stating that it is in Switzerland, although they are both equally correct. Although being forced to choose one geographical location, as per convention in museum catalogues, is what reveals this conundrum, it also prompted us to develop another category in which issues such as these could be expanded on, that is, "existential location.". The GEOSS troubles our sense of cartographic space (Google Map) because it seems to exist in a dimensionality that is not quite of the physical world (a claim made for the digital more broadly, as in "cyberspace"); although the object that has been "collected" in the MoDa is the GEOSS itself,

the image that has been uploaded is a picture of the GEOSS portal, which is exactly that: a doorway to other databases. A data portal exists, apparently, only as a conduit. However, this non-place of the digital here is called into question not simply because all digital entities have a material substrate ((a server, a data centre, hardware, software) but also because the GEOSS is not, in fact, everywhere. That is, the contours of this system are grounded in specific histories, tied to some places and not others. This prompts a reflection on the sort of space that is in question, here suggested to be "territorial space," a sort of space-making that has particular colonial histories traced through it.

Each of our three exhibits demonstrate the recursive ways in which form and content, or one might say the technical platform and the social object, work upon each other. In Exhibit 1, tacking back and forth between exploring the multiple materialities of the digital object and the necessity to fix its form in order to assign proper credit, we are confronted with the inadequacy of the presumed relations of objects to individuals for understanding either in this case. In Exhibit 2, the transformation of a physical object into a digital one, and the resulting controversy that this act provoked, necessitated we created a new property regime to add to MoDa's classification system. Likewise, in Exhibit 3, the tension between the necessity

and the impossibility of pinpointing the location of the digital object, alongside the realization of how this re-enacts past colonial erasures, led to the museum having a new location classification created. As these three different examples demonstrate, being asked to reflect on the characteristics of these data objects opens out sets of questions that challenge not only how data and the digital are objectified, but also how the digital systems we use to categorize and engage in these objects of study shape our understandings in particular ways; this, in turn, allows us to work towards re-shaping them. Engaging with the form as well as the content of the platform also forces us to move beyond the social in our understanding of the skills needed in order to undertake this kind of work. As Risam (2019: 52) notes, in her extended discussion of postcolonial digital humanities, there is intense discussion within fields such as digital humanities as to the relation between theory and praxis, often framed around whether or not scholars or analysts are also able to code. The MoDa demonstrates that even coding knowledge is partial, and that the forces of standardization or generification are as important as specialized technical expertise. We also need to recognize technical work as a form of social commentary. The data object that our developer, Joel Gethin

Lewis, uploaded to the museum was a selfie of the Museum of Data Staff.

MoDa futures: New practice beyond representation

Cultivating practices of explicit reflection on the inescapable normativities and constraints of digital systems is, we believe, a crucial element of any approach that seeks to transform those systems. With MoDa, we use the conventions of museum practice as a means to do this. The result is that MoDa speaks for a form of the social that might be understood to inhere in objects; the social relations that constitute data objects is revealed through the explicit practice of curation and presentation. This also holds for the museum itself: what might normally be considered to be restricted to the internal workings of museums – the discussions and debates around the histories, provenance, location, material forms, property rights, and so on, of any object – here becomes the external form of the museum, which we recognize is in a potential state of constant flux.

Although the MoDa in this way turns the museum "inside out" (Riles 2000) thereby complicating the relationship between what is made visible and what is kept invisible, it nevertheless relies on the trope of

revelation in order to do so. And, as Marilyn Strathern reminds us, revelation always implies concealment (2015), even in a situation where everything is apparently on display. In looking for alternatives to representational strategies of revelation, we turn instead to feminist and other contemporary theorizations of care. As Geismar (2022) has explored elsewhere, feminist theories of care emphasize how care-taking practices are often invisible or go unrecognized (Tronto 2015). Care has emerged as a way to look within and between the nodes and connections visualized on the flat plane of the network, to manifest invisible and marginal labor. Care is also positioned as a form of world-making through maintenance, making visible the infrastructures of support that enable networks, or objects, to emerge into the world. There is therefore a tension between top-down forms of care (care as control or a politics of recognition and rights), and theories of care that foreground the invisible, the powerless, and the excluded.

You do not need to make something visible to care for it. In fact, the work of care might be ensuring something stays invisible and unnoticed, as infrastructure scholars have pointed out, (although their critical practice is to reveal this). What care allows us to countenance is a relation with the technical that is not spectacular or revelatory, but that focuses on

maintenance, repair, and use. We are here inspired by a recent movement known as minimal computing, an emerging strategy to undertake computing within recognized constraints, whether those of hardware or software. Minimal computing is expressly not about high performance, but about necessity and the demands of use. As such, it is a political act that acknowledges the contingencies built into digital systems and underpinning code, working to unravel often hidden inequalities and hierarchies that structure not simply access but the very affordances of platforms. Such inequalities are built into not just hardware and software, but into educational attainment needed to use and code, network capacity, power and politics, skills and expertise, bandwidth limitations, and so on. "Minimal computing thus relates to issues of aesthetics, culture, environment, global relationships of power and knowledge production, and other economic, infrastructural and material conditions" (Minimal Computing n.d.). Minimal computing has emerged in particular to address imbalances of expertise and access between global south and global north, to develop platforms and practices that can move more easily across these divides.

Minimal computing thus makes very visible the constraints of digital systems in a way not unlike MoDa aspires to, but at the same time it is practice

that has emerged in order to "care" for the socio-technical, not by high-spec bespoke engineering, but by empowering practices of bricolage, making-do, and enabling what is to hand. The focuse on use, maintenance, repair, and accessibility, and the tension between these and practices of visibility (Knight 2017), makes clear is that we need to develop several sets of sensibilities at once; speaking for the social must also be matched by a commitment to caring for the socio-technical, and this might cause frictions and tensions.

Our choice to use Wordpress as a platform is a good example of this commitment: we might argue that making Wordpress visible in a critical vein is an important part of the work of MoDa (that is, with all the presumptions Wordpress as a platform has which shapes how MoDa operates), but at the same time, it is because we are using Wordpress that we will be able to easily maintain and care for MoDa, and as many people as possible will be able to use it. At the same time, this decision coopts us into a platform where technical decisions are pre-formed by a company responding to both the imperatives of another form (blogging) and the norms of another culture (social media), with its own histories and conventions. If speaking for the social of MoDa implies revealing

what was there all along, caring for the socio-technical forces us to think about the relations that MoDa has not yet made: its future capacity to travel between and across different sorts of divides.

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