

THE DIGITAL DEAD: DIGITAL REPATRIATION AS A TOOL FOR REPATRIATION UNDER NAGPRA

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Digitization in an ever-increasing online world is being employed more frequently and 3D digital models are rising in popularity. 3D morphometrics, computed tomography (CT), and photogrammetry are just a few technologies that can create 3D digital models from physical objects (Hirst et al., 2018). The use of 3D modelling technologies in the field of bioarchaeology is growing in popularity due to their ease of application and relative inexpensiveness (Schug et al., 2021). An increase in the use of 3D modelling technologies in the discipline necessitates a call to better consider the ethics of the process of digitizing human remains. There have already been some ethical considerations incorporated into official guidelines. For example, in 2019, the British Association for Biological Anthropology and Osteoarchaeology (BABAO) added a set of ethical guidelines outlining their recommendations for dealing with the 3D digital reproduction of human remains (BABAO, 2019). However, BABAO's guidelines are still relatively new, and many anthropological organizations are still lacking any such regulation; therefore, it is paramount that the ethics of digitization be actively considered.

The Native American Graves Protection and Repatriation Act (NAGPRA) is considered a seminal document for bioarchaeology in the United States. Unfortunately, it has not been updated since 1990 and thus does not include any

considerations of digital bioarchaeological data (Schug et al., 2021).[1] NAGPRA outlines requirements for the repatriation of Indigenous remains and associated funerary material. Repatriation is defined as the process of returning something to its origin, referring particularly to Indigenous remains and cultural materials in this case (NAGPRA, 1990). NAGPRA presents guidelines for finding, contacting, and collaborating with descendant Indigenous communities throughout the process of repatriation. Further, it necessitates consultation with Indigenous communities in all future archaeological endeavours involving Indigenous graves (NAGPRA, 1990).

Digital repatriation, which is not an officially regulated process, involves repatriating a digital copy of cultural materials or human remains (DeHass & Taitt, 2018). I argue that the digital repatriation of 3D reproductions of human remains can be an important starting point in the process of physical repatriation, facilitating an initial knowledge-sharing between the institution and the descendant community so that the Indigenous community might request physical repatriation under NAGPRA. However, it is imperative that neither physical nor digital repatriation happen without the other, as a digital reproduction is an extension of the subject, deeply linked with the real. On the other hand, a dig-

[1] Unfortunately, no federal level Canadian version of NAGPRA exists. Canada only recently adopted the United Nations Declaration of the Rights of Indigenous Peoples' (UNDRIP) regulations on repatriation into their domestic laws and thus its initial impact is unknown at this time (Hook, 2023).

ital reproduction is also different in important ways such that the digital cannot be a replacement for the real either. My argument will pull on ideas from Susan Sontag's *On Photography* (1973), using her work to conceptualize the complex technological subjugation undergone by the subject in the process of digitization, fundamentally linking the real and the replica. Part one of this paper will explore the applied implications of digital repatriation, teasing through the pros and cons of 3D digitization and demonstrating how, when paired with digital repatriation, digitization can be a powerful tool for Indigenous knowledge reclamation. Part two will focus on the philosophical aspect of digitization and will work through the relationship between the real human remains and their 3D digital models.

The digitization of that which is human may be met with more hesitancy than the digitization of objects. Thus, human remains, isolated from other cultural materials, will be the sole focus of my argument (Smith & Hirst, 2019). Though there are similar points to be made about non-human cultural material, human remains are caught up in issues of identity and surveillance due to the racist and colonial histories of the discipline of biological anthropology and its subfield bioarchaeology (Schug et al., 2021). Additionally, the relevant official repatriation laws, namely NAGPRA, only refer to human remains and their directly associated cultural material, thus making conclusions easier to base in pre-existing legal frameworks when solely considering human remains (NAGPRA, 2019).

Considerations in Digital Repatriation

Accessibility and the democratization of bioarchaeological information are often cited as strong reasons for digitizing human remains and conducting digital repatriation (Hirst et al., 2018). Within Indigenous communities, digital repatriation allows for wider access across the community, permitting community members to access materials online and on their own schedules. Additionally, digital materials can be accessed from multiple places at the same time, allowing for a more democratic access than would be possible with physical human remains (DeHass & Taitt, 2018). 3D materials also allow for closer analysis and the ability to see surface textures which is not as accessible with physical objects, particularly if the physical objects are delicate and should not be handled (DeHass & Taitt, 2018). However, it is important to acknowledge that this level of access presumes mass access to technology that can run 3D visualization software which may not be the case in places with bad internet access and insufficient technological infrastructure (Krupa & Grimm, 2021). Additionally, online databases require constant maintenance to ensure they do not become obsolete, with digital storage also often costing money, creating a barrier for digital repatriation for some communities (Kalusopa & Zulu, 2009). Though socioeconomic and infrastructural issues may prevent universal accessibility and democratization of 3D models within a community, digital repatriation is still useful for at least increasing access beyond the individual or institution that holds the physical object. Digitally repatriating Indigenous knowledge back to descendant communities in a way that is accessible

participates in the process of decolonization (DeHass & Taitt, 2018).

Preservation is referenced as a main reason for the digitization of human remains. Digitization protects human remains from being over-handled during observation and protects them in case of damages caused by fires, floods, and other suboptimal storage conditions such as humidity. By creating a back-up that is a high-quality 3D record of the original material, the security of a collection is strengthened (Hirst et al., 2018). Preservation may also be a concern for Indigenous communities in case materials are damaged in transport to the community or prior to repatriation (Krupa & Grimm, 2021). Furthermore, in the event the descendant community lacks a storage facility for the remains, digital repatriation will ensure that the cultural heritage materials can be accessed by the community in the interim while a physical location for the remains is negotiated (DeHass & Taitt, 2018). Thus, for the reasons of preservation and democratization, digital repatriation is a powerful tool that guarantees at least a certain level of knowledge sharing between the Indigenous community and the repatriating institution. Repatriation not only decolonizes institutions, but it is also very important to Indigenous communities as it reaffirms Indigenous peoples' right to self-determination and allows them to reclaim their own history (Hook, 2023). Furthermore, repatriated cultural materials can be used by the community to strengthen, maintain, and reclaim traditional ceremonies and practices (Hook, 2023).

On the other hand, many proponents of 3D modelling as a democratizing process

see accessibility going beyond the descendant community and want to extend access to the general public. Advocates of 3D modelling say it will increase public awareness of the discipline of bioarchaeology and increase potential educational and outreach opportunities (Hirst et al., 2021). Additionally, the proponents of the widespread open access of digital bioarchaeological data believe that this will lead to further scholarly engagement with better ability to create quality studies through drawing from a larger pool of information and materials (Hirst et al., 2021). Further, Schug and colleagues (2021) suggest that better public access to data will increase accessibility of materials for underrepresented groups that may want to work with the material.

Although it is likely true that increased public and scholarly access to materials will result in increased studies and engagement with the material, it is important that we not privilege scientific studies and advancement over the desires of descendant communities (Schug et al., 2021). Depending on cultural and spiritual beliefs, communities may not want the remains of their ancestors digitized (Smith & Hirst, 2019). This highlights the issue of consent, which is a common issue in the field of bioarchaeology but is particularly pronounced when it comes to the 3D digitization of human remains. Who is the consenting body? Who gets to speak for the dead? There are conflicting regulations regarding consent for human remains. The United Kingdom's Human Tissues Act (2004) notes that consent is not required when working with materials over 100 years of age, whereas NAGPRA positions the descendant community as the consenting

body (NAGPRA, 1990). Digitization and digital repatriation have the possibility of being very positive and assisting in the process of Indigenous knowledge reclamation, but it is important to first and foremost respect the consent and cultural beliefs of the descendant community of the remains in question before simply assuming that digitization and digital repatriation is what the community wants and needs (Powell, 2011). By positioning descendant communities as the relevant stakeholders and the consenting body, NAGPRA is moving in the right direction towards decolonization, but we must continue to be active and critical in our approach to repatriation.

3D digital human remains, particularly when they are available in open access digital repositories, are at high risk of function creep. “Function creep” describes when original intentions are well-placed, but the function changes and materials are used for more despicable purposes (Madianou, 2018, p. 588). It is generally understood that a certain level of respect should be given to human remains hence the prohibition on taking photos in cadaver labs. In this context, there is an understanding that this respect needs to be taught, and without this earned respect, images could be used insensitively. Without being able to regulate and teach respect for the dead, there are concerns that 3D models may be commercialized, or 3D printed and used for inappropriate purposes (Alves-Cardoso & Campanacho, 2022). There is also worry that 3D models of human remains will be decontextualized and found on social media or used in problematic ways by malintent individuals to perpetuate incorrect scientifically racist information (Hook, 2023). Despite all these frighten-

ing possibilities, it is possible to mitigate these outcomes by teaching respect for human remains along with tightly regulating access to digital reproductions. Thus, it is important that the 3D digitization of human remains first only be done in service of digital repatriation to the descendent community. After that, the further dissemination of the material should be done as a collaborative process between the digitizing institution and the Indigenous community. In this way, the Indigenous groups can reap the benefits of the democratization of 3D digital models without having digital scans of their ancestors non-consensually subjugated to public open access.

The concept of 3D digitized human remains are exciting to some scientists as they see these digital remains as an opportunity to continue studying the remains even when the physical remains have been repatriated or reinterred (Schug et al., 2021). However, without consulting the relevant stakeholders, this goes against the spirit of NAGPRA which seeks to give Indigenous communities rights over their ancestral remains (Schug et al., 2021). Instead, without consent, scientists continuing to study the remains would be appropriating the materials and reinforcing colonial knowledges of culture and history. Additionally, Susan Sontag (1973) says imaging (photography in her case, but extended here to 3D digital reproductions) is thought of as a right now due to the modern prevalence of imaging technologies. There is a violating and surveillant aspect of imaging, where one sees the subject in a way that the subject will never see themselves (Sontag, 1973). The process of imaging can be violent, especially when considering colonial

histories of the surveillance of the racialized body. To reiterate, it is key that science is not privileged over one's ethical responsibilities to the people they are studying. Additionally, collaborating with the Indigenous communities in the process of digitization is paramount to avoid undue harm.

Going further, some institutions may use the new possibility of digital repatriation as an excuse to perform digital repatriation instead of physical repatriation. Not committing to physical repatriation is paternalistic, perpetuating a colonial norm that descendant peoples are not capable of caring for and maintaining their own cultural materials (Krupa & Grimm, 2021). Thus, it is important that if digital repatriation does occur, it be done in tandem with physical repatriation. This will be expanded upon later. Digital repatriation, when recognized as a tool for physical repatriation as opposed to a replacement for it, can facilitate collaborative efforts between the descendent community and the institution possessing the human remains. The facilitation of collaborative efforts may mean faster quality access to culturally significant materials, meaning that, if done carefully and consensually, digital repatriation is incredibly useful in the process of repatriation.

3D Models of Human Remains on the Spectrum from Real to Copy

Although digital repatriation is a useful emerging tool for facilitating repatriation practices, as highlighted above, it cannot stand alone. By framing the digital recreation of a subject as enough to replace the physical presence of the original subject, one is privileging the visual dimensions of the remains

over all other aspects of the physical object (BABAO, 2019). This effectively makes the claim that if visually the same, then the physical and the digital reproduction must be the same (Hassett, 2018). In the field of bioarchaeology, the sense of touch for, example, is very important as one might be able to pick up on pathologies not visible to the naked eye. Additionally, the weighted feeling of the bone may also provide information that a weight metric on a computer cannot confer. In this way, other senses are also important for communities receiving repatriated remains so that they can fully investigate and experience the remains of their ancestors. However, CT scanning complicates this argument as this type of 3D modelling allows for a surface and internal reconstruction, thus replicating more than just meets the eye (Villa & Lynnerup, 2012). This 3D scan could theoretically be 3D printed in a way where the visual and textural internal and exterior of the original are preserved in the model. However, despite being strikingly similar to the 3D model, the physical presence of the original remains may confer certain spiritual meanings (Hook, 2023). For example, it may be incredibly important to the community that the deceased individual be reinterred or have certain blessings placed upon it (Smith & Hirst, 2019). Further, digital repatriation cannot stand in for physical repatriation due to quality issues with current scanning technology (DeHass & Tait, 2018). However, this issue may be fixed in the future with improving technologies.

When it comes to the issue of ownership, copyright, and intellectual property, it is also clear how the 3D digital model differs from the original. To gain intellectual property over a 3D model,

one must either prove that it was altered in a significant enough way to make it different from the original or prove that the digital model required more than negligible skill to create (Smith & Hirst, 2019). Though the technicalities of copyright law are beyond the scope of this paper, it is important to mention issues of ownership and what this means about the integrity of the digital model. Why are intellectual property rights laws set up in a way in which one must pretend as though they own the human remains in question? Since a certain, although small, level of alteration of the original material is necessary to protect 3D models online, digital repatriation cannot replace physical repatriation as it is not a complete copy of the original. Furthermore, in the obvious and purely technical sense, a digital 3D model is digital after all, meaning in essence it is complex binary code compiled together, making its very building blocks fundamentally different in a *physical* sense.

When considering the relationship between the original and its digital recreation there are differences in ways that matter, but there are also similarities in ways that matter, and these do not contradict one another. While digital repatriation cannot stand in for physical repatriation for the reasons highlighted above, it is important to unpack the ways the digital model is deeply and inherently linked with the real and what this infers about the future treatment of digital repatriation. Even though this link may not be physical, there is still significance in that which is not physical but ontological.

Susan Sontag (1973) argues that unlike paintings which are representations of the subject, photographs are part of and

extensions of the subject. Schug and colleagues (2021) and Hassett (2018) both agree that 3D digital models are better representations of the subject since no choice is made about how to represent the subject, thus removing the bias of the photographer. Since there are less influences that might remove the replica from the real in 3D digital modelling, we can extend Sontag's sentiment expressed above and claim that 3D digital models are extensions of the originals from which they come. As an extension of the subject, linked through the technological mediation of taking that which is physical and turning it digital, one can conclude that the 3D digital model is inherently linked with the physical subject and cannot be willingly separated.

Sontag's (1973) consideration of the connections between the real and the digital replica demonstrates that the binary understanding of real or fake is reductive and unhelpful in a consideration of the relationship between an original and its digital copy. She instead encourages a nuanced consideration of the ways in which "notions of image and reality are complementary" (Sontag, 1973, p. 123). Technologies like photography and more advanced technologies emerging now such as CT scanning and 3D geometric morphometrics have "de-Platonized our understanding of reality," removing us from a world in which society can be imagined through Plato's allegory of the cave, where the real (outside the cave) and the images (projected on the cave wall) are clearly defined (Sontag, 1973, p. 141). Sontag (1973) instead suggests we are moving towards a world in which the line between originals and copies is blurred (Sontag, 1973). Thus, though not

physically the same, 3D models are an extension of the subject and thus if digital reproductions of the physical subject do exist, they must be repatriated with the physical material. By keeping the digitization, the institutions would violate the spirit of repatriation as it would effectively be holding onto part of the subject which they committed to, and are legally obligated to, repatriate to the descendant community.

Implications

It is clear that digital repatriation could be a helpful actor in the repatriation process when used carefully and deliberately. Digital repatriation and the 3D digitization of human remains should be explicitly regulated since 3D modelling technologies are developing quickly and could cause harm to descendant communities and others if regulations are not set in place. Though a full consideration of each article of NAGPRA and how it should be changed is beyond the scope of this paper, I suggest that NAGPRA should be updated to reflect modern technological considerations, removing the specification of physical when referring to the repatriation of human remains and meaningfully incorporating 3D digital models into the Act. However, this suggestion would be challenged by Hassett (2018) who asserts that universality in these regulations is unhelpful, and these should instead be considered on a case-by-case basis. Though in an ideal world a different ‘perfect fit’ scenario for each case would be created, unfortunately, without any official legal framework, it is unlikely that digital and physical repatriation will be combined meaningfully. Thus, I suggest incorporating digital repatriation into NAGPRA with the hopes

that other countries, like Canada, will eventually follow suit with their own versions of repatriation legislation. Additionally, it is key that other anthropological authorities like BABAO continue to develop robust ethical frameworks for dealing with 3D digital imaging.

Consultation as the Golden Standard

Digital repatriation can be an important tool for initial knowledge sharing between the descendant community and the institution housing their ancestral remains; however, in isolation, it is not enough to satisfy the requirements of NAGPRA and the spirit of repatriation. Furthermore, if 3D digital models of human remains are created, it is imperative they also be repatriated in tandem with the physical remains since the digital reproductions are fundamentally connected to the physical subject and are thus something the descendant community should also have control over. Sontag (1973) exerts that a photograph is “a potent means of acquiring [the subject], of gaining control over it” (p. 121). This final quotation from Sontag highlights the importance of collaborating with descendant communities as without cooperation, researchers, museums, and other institutions run the risk of slipping into a relationship defined by colonial notions of the racialized body as the subject to control. But instead, through properly understanding the essence of digital repatriation and the spirit of collaboration necessitated in the process of repatriation one can participate in a decolonizing process which gives agency and control back to the descendant communities.

References

- Alves-Cardoso, F. and Campanacho, V. (2022). To Replicate, or Not to Replicate? The Creation, Use, and Dissemination of 3D Models of Human Remains: A Case Study from Portugal. *Heritage* 5, 1637-1658.
- DeHass, M. C. and Taitt, A. (2018). 3D Technology in Collaborative Heritage Preservation. *Museum Anthropology Review* 12(2), 120-153. <https://doi.org/10.14434/mar.v12i2.22428>
- Hassett, B. R. (2018). Which Bone to Pick: Creation, Curation, and Dissemination of Online Digital Bioarchaeological Data. *Archaeologies: Journal of the World Archaeological Congress 14*, 231-249. <https://doi.org/10.1007/s11759-018-9344-z>
- Hirst, C. S., White, S., and Smith, S. E. (2018). Standardisation in 3D Geometric Morphometrics: Ethics, Ownership and Methods. *Archaeologies: Journal of the World Archaeological Congress 14*, 272-298. <https://doi.org/10.1007/s11759-018-9349-7>
- Hook, C. (2023) Repatriation of Indigenous Human Remains in Canada: An Analysis of the Issue and Relevant Policies. *Dalhousie Journal of Interdisciplinary Management* 17, 1-21.
- Human Tissues Act, UK 2004, c 30.
- Kalusopa, T. and Zulu, S. (2009). Digital heritage materials preservation in Botswana: Problems and prospects. *Collection Building* 28(3), 98-107. DOI 10.1108/01604950910971125
- Krupa, K. L. and Grimm, K. (2021). Digital Repatriation as a Decolonizing Practice in the Archaeological Archive. *Across the Disciplines* 18(1/2), 47-58. <https://doi.org/0.37514/ATD-J.2021.18.1-2.05>
- Madianou, M. (2019). The Biometric Assemblage: Surveillance, Experimentation, Profit and the Measuring of Refugee Bodies. *Television & New Media* 20(6), 581-599.
- Native American Grave Protection and Repatriation Act, U.S.C. 1990, c 10.
- Madianou, M. (2019). The Biometric Assemblage: Surveillance, Experimentation, Profit and the Measuring of Refugee Bodies. *Television & New Media* 20(6), 581-599.
- Schug, G. R., Killgrove, K., Atkin, A., and Baron, K. (2021). 3D Dead: Ethical Considerations in Digital Human Osteology. *Bioarchaeology International* 4 (3-4), 217-230. DOI: 10.5744/bi.2020.3008
- Smith, S.E., and Hirst, C.S. (2019). 3D Data in Human Remains Disciplines: The Ethical Challenges. In Squires, K., Errickson, D., Márquez-Grant, N. (eds) *Ethical Approaches to Human Remains*. https://doi.org/10.1007/978-3-030-32926-6_14

Sontag, S. (1973). *On Photography*. Farrar, Straus, & Giroux.

Villa, C. and Lynnerup, N. (2012). Hounsfield Units ranges in CT-scans of bog bodies and mummies. *Anthropologischer Anzeiger* 69(2), 127-145.