

Abstract

In the field of computer vision, Structure from Motion (SfM) is a photogrammetric technique for building three-dimensional models from two-dimensional image sequences. This paper discusses a knife currently held in the Blackfoot collections of the British Museum and its digital modelling using SfM photogrammetry. The paper also explores the potential of thinking with the concept of structure-from-motion as a research methodology, taking inspiration from Sara Ahmed's work on the potential for queer use as a way of reanimating the project of diversity work (Ahmed 2019).

Running Head Right-hand: Structure from motion

Running Head Left-hand: Louisa Minkin et al.

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Structure from motion

The movement and digital modelling of an artefact from the Blackfoot collections, British Museum

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In the field of computer vision, Structure from Motion (SfM) is a photogrammetric technique for building three-dimensional models from two-dimensional image sequences. This paper discusses a knife currently held in the Blackfoot collections of the British Museum and its digital modelling using SfM photogrammetry.

We also explore the potential of thinking with the concept of structure-from-motion as a research methodology. To do this, we take a cue from Sara Ahmed's work on the potential for queer use as a way of reanimating the project of diversity work and opening up institutions to those who have been excluded (Ahmed, 2014). Can we then repurpose the idea of SfM to think about the mobility of objects and people through time and space? What structures are compiled and made visible by tracing the movement of an object from Southwest Alberta, Canada, to a UK museum store? What kind of futures are implied?

This paper is also premised on the work of the *Concepts Have Teeth* project, which borrows its title from Mohawk anthropologist Audra Simpson (2002). Simpson describes the differential power of one account over another in establishing the terms of being seen or being present: Western philosophical histories of seeing, knowing, and visualising, tied to legal fiat, enable disproportionately empowered political forms that compound the lack of visibility of and access to subaltern histories. Focusing on issues around access, tangibility, materiality, and self-representation, the project explores the potential for a new conjunction of art practices with

digital technology to open access to collections and develop new contexts and associations by rereading or counter-mapping existing archive material.

Our project is by no means unique in foregrounding object-based learning and seeking to facilitate connection between an Indigenous community and museum collections. Ulujuk Zawadaski (2018), for example, lays out examples of such collaborations: the work of the *Inuvialuit Living History Project* and the *Reciprocal Research Network*. These act as context for her own *Kakpiit* project. Our own focus on the benefit for Blackfoot colleagues and community of producing digital models of their distant objects comes at a time when Covid-19 has brought co-creation, collaboration, and remote participation into a new formation, with crises of race and of climate magnifying structural inequalities. We acknowledge the vital role of Indigenous thinkers, makers, and Knowledge Holders, and also the objects themselves, which are teaching us.

A beginning

Let's start with queen Elizabeth I, crossing her fingers and rolling them over the globe of the Americas, as depicted in the painting known as the *Armada Portrait*. The trick of crossing the index and middle fingers and rolling them over a sphere produces the sensation, or affect, of two globes rather than one. Touching up Turtle Island produces the Americas as neurological ghost: grotesque separation by colonial caress.

Affect is a measure of agency, power, and accountability. Karen [Bergd \(2017\)](#), 54) remarks in her book:

So agency is not about choice in any liberal humanist sense; rather, it is about the possibilities and accountability entailed in reconfiguring material-discursive apparatuses of bodily production, including the boundary articulations and exclusions that are marked by those practices.

The simple gesture of the queen's hand performs agency and power: it brings into being worlds, while simultaneously excluding others. Visual and conceptual frames are ways of building and destroying populations as objects of knowledge and targets of war (Bauder, 2011).

Against this gesture, consider the edge of a knife – British Museum accession no. AM.2652 to be specific: a beavertail stabber or a hand dag. A fixed blade is held by a handle of bone with six brass rivets. The steel blade is marked 'I&H Sorby': John and Henry Sorby, edge tool factors, merchants, and scions of a Sheffield dynasty of Master Cutlers. They were active under this mark from 1822 to 1855, producing shearing tools, saws, and chisels; tools for managing animals and wood, as well as clean, long, and double-sided blades like AM.2652.

Such blades were forged in multitudes; stamped; exported; traded across borders, pack to pack or hand to hand; and exchanged for furs (Brown n.d.). One is as good as another and as fungible and transferable as currency (see [Friedrich, 1981](#) for the long history of the interrelation between the Sheffield steel industry and the Americas) until the time that this particular one was given a handle fashioned from buffalo or elk, joining bone and metal, joining First Nations and settler technologies. Then according to custom, it was worn around the neck in a scabbard or sheath of hide sometimes glamoured with dyed porcupine quills or glass beads ([Friedrich, 2004](#)); sinew joining hide, tin cones, keratin, and trade cloth: the cover was to protect the blade, making present but safe – the knife with eyes. In Blackfoot, *isttoán* means 'knife' and *nottoána* means 'my knife' (possessive).

I cut, I hew, I sever, I stab, I cleave, and I divide. Our consideration of the knife works with Karen Barad's diffractive notion of cutting *together-apart* ([Barad, 2007](#), 2014). The agency of the cut both entangles and differentiates. It parts ways, while also producing the raw materials for a new entanglement of things.

A series of cuts: the knife and its image

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The movement of the knife and of images of the knife can be traced. The knife is reproduced as a photograph in a book (*Thunderbird and Lightning: Indian Life in Northeastern North America 1600–1900*; [Fig. 193](#)) alongside other knives and sheaths. The scabbard adjacent in the image is not the cover for this knife but for a smaller tool. The quillwork sheath looks like a snake. The pattern of a skin is distinguished from the dirt trail by the sound of hissing at your feet. Movement is like a ripple of pattern and muscle, dust and sunlight. [Fest and Kasprzycki \(2001, 190\)](#) suggest a post-European origin of knife cases or an adaptation of earlier forms to the sharpness of metal blades. The case, itself a hollow object, like a husk or a 3D digital model, describes and determines the shape of the contents. It makes a skin to bound the object. [Rosette \(2008, 72\)](#) discusses the Indigenisation of European trade goods in Canada. She describes the work of women with animate media on living surfaces: hide, quills, and sinew. Women, she says, literally stitched new goods into daily and ceremonial life.¹

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AM.2652 is distinguished from many similar knives by its current resting place in the Orsman Road stores of the British Museum. The blade didn't stay long in North America. It was 'collected' by the Quaker banker and anti-slavery campaigner Henry Christy on his trip across Canada, the United States, and British Columbia in 1856. He brought it home initially to Victoria Street in South West London. In 1865, Christy's substantial collection was bequeathed to the British Museum after his early death from an inflammation of the lungs contracted in the Grotte de Dinant, Belgium.

In comparison to most of the collection items brought to the UK from the Americas in the 19th century, this knife is a fairly mundane object, and it has specific capacities because of this. It is neither a sacred object nor noted as a personal item.² It is a hybrid of UK manufactory and Blackfoot workmanship. As such, the knife illustrates a theme commonly recognized by archaeologists studying colonialism: material culture is implicated in processes of colonial entanglement (e.g. [Gosden 2004](#); [Howes 2011](#)). The knife is not a mimetic object, imitating European forms; instead, it is a physical hybrid composed of European metals and North American mammal bone. The manufacture of the handle of the knife from buffalo or elk bone

enacts an agential cut. Europe and North America are now cut together, conjoined and materially entangled. The affordance of the knife blade is sharpened and recognized by its bone handle. This cutting together of metal and bone is underlined by enclosing the knife in a quillwork sheath.

A further cut was made as the knife was then removed from its messy colonial context and became a component of a colonial collection, the spoils of a colonial traveller. As part of Christy's collection, its messiness was now distilled as it became an exemplar of the colonial other. The knife was now made to exhibit the difference between European and Indigenous American/Canadian. It continued to serve this function as it entered the British Museum collection in 1865. We encountered the knife during the early stages of our collaborative project (another example of cutting together) to digitize the artefacts in the Blackfoot collections of British museums.

Digitisation enacts a further cut. SfM is a tool we can use to unpick what it means to make a digital capture, to compile a model, to clean up and re-topologize a mesh, and to figure a new thing, with new qualities in its likeness. In the Orsman Road stores, we lay down the knife on a bed of printed targets (Figure 4.1). The targets, incidental to the object, will trick the software into assembling a 3D file from a data set of overlapping photographs. A new entanglement is made.

[Insert 15031-4760-004-Figure-001 here]

Photo of steel knife with bone handle.

Figure 4.1 Screen grab, Agisoft Metashape, dense cloud image of am 2652.

Source: Image: Thomas Allison, courtesy of the trustees of the British Museum.

Ethics, value, and digital objects

What is a knife for? An object that holds us to account. Tip pressed to the skin of the throat. It ‘partakes of the power of the imagination as well as the actuality of technology’ (Hayles, 1999, 115) from the grip of the knife to the gesture of conceptualisation.

Alongside the pragmatic metadata of a museum catalogue entry, the provenance, and material history, the object also enlivens the imagination. We can figure it, as (Sean, 1977, 281) does, diagrammatically: the Borromean knot holds together the spheres of symbolic, real, and imaginary. We can parse these three strands crudely as the representational narrative of story and history, the material and process of archaeological enquiry, and the creative reconfigurations of artistic practice. We know that the objects we are looking at (and digitizing) are not art objects of Western cultural separation and abstraction but actors whose operations and intra-actions challenge any categorisations we may venture in their direction. We have come to understand that these museum collection objects are part of the expanded body of the Blackfoot people. We must also be cognizant that what the academy names as the post-human or the ontological turn without referencing Indigenous ways of knowing is a continued epistemic violence and an ongoing colonisation of Indigenous knowledge and praxis (Todd 2016, Wang 2014, 31)

In that regard, we need to frame the question of the ethics and value of an image or a 3D file of such multistable objects and the utility and benefit (or not) of digitizing objects stranded far from their home communities. This alienation is made even more potent under current Covid-19 restrictions, when the denial of touch and fear of transmission through material contact produces its own trauma.

It's not the objects that are sacred, it is the knowledge they release.

[Melissa Shouting in conversation]

A fomite, or fomes, is any inanimate object that, when contaminated with, or exposed to, infectious agents, can transfer disease to a new host. Now, under Covid-19 legislation, restrictions of movement extend to the movement of image and text in social media, limited to

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the forwarding of posts, for instance. We think about how digital assemblages travel, move, and work; and of what might move with them, of where and why limitations should be placed, and of what should not be imaged or transported at all. See Anna Tsing's beetles riding shipping pallets (Tsing 2015) and caesium 137 in blueberries (Tsing 2018, Huxley Memorial Lecture, RAI). The refusal of movement beyond certain ceremonial societies and control of access, which mark the protocols of Blackfoot transfer rites (Bastien 2004), for instance, bring us to challenge the idea of a greater good in universal access and to stand in alliance with Audra Simpson and with those of us for whom refusal is a refusal to exercise the terms that lead to one's own erasure. Edouard Glissant demands the right to opacity (Glissant 2011, 111–20). Opacity here is a radical tool to subvert systems of domination. Taking as our terms untranslatability and unknowability, how do we then conceive of the process of digitisation? What are these new objects? What relation do digital objects have to their source?

Karen Barad (2014, 62) glosses Niels Bohr:

saying that things are indeterminate; there are no things before the measurement, and that the very act of measurement produces determinate boundaries and properties of things.

We are making new objects (Figure 4.2). The objects produced by photogrammetry are determinate. The things in the collections are unbounded and unquantifiable.

[Insert 15031-4760-004-Figure-002 here]

Plaster print of knife.

Figure 4.2 Plaster print. Image: Billy Dickinson.

Valuing intangible objects

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This assertion may be thrown into diffractive relief when we think about objects that are no longer recoverable. We want to focus on a lost collection, shedding light on what can be recovered from testimony and photography, and to draw out from that the implications for the digital recording of objects in our current project. How do we mark out what the shape of an absence is and what that might mean in returning a sense of something's presence, however provisionally, to those who have been dispossessed?

La Bourgogne lies 69 miles south of Sable Island, Nova Scotia, on the underwater ledge of the North American continental shelf. The wreck is unreachable by technical diving and can only be seen through ROVs or manned submersibles. The exact orientation, condition, and position of the iron-hulled wreck is unknown. She lies in deep water over two miles below the surface, southwest of the final resting place of the RMS *Titanic* (www.shipwreckworld.com/maps/ss-la-bourgogne).

In July 1898, the French liner SS *La Bourgogne* sank after a collision, with huge loss of life; 549 died as the ship, travelling at speed in dense fog, hit the British sailing ship *Cromartyshire* somewhere off Nova Scotia. Records and briefs of the US Supreme Court from January 1906 detail the case with much attention to the proof of claim of George Deslions, bereaved of his wife and child by the wreck but also seeking recompense for the loss of his crated collection of Native American and First Nations regalia and implements. The petitioner, *La Compagnie Generale Transatlantique*, seeking to limit liability, challenged the amount and validity of the claim made by Deslions. Fixing a value on these lost objects is the focus of a 998-page document. The terms of establishing what exactly had been lost, whether it existed and existed as described, and further, its relational value, are scrutinized. Witnesses brought to testify include George Bird Grinnell, writer, anthropologist, and advocate of the ways of the North American Plains; and Chauncey Wales Riggs, digger of burial mounds in Arkansas.

Their answers to the same question exemplify, firstly, the concerns of the scholarly industry of story-making in terms of authenticity and truth, and secondly, the avarice of market capitalism:

Grinnell:

Q. What does the value of a grizzly bear claw necklace depend upon?

A. It depends largely upon its history. In old times when the Indian had no guns, the killing of the grizzly bear was a great feat, and it meant about as much as striking an enemy, and a man who was successful in killing a grizzly bear would save its claws and use them to put about his neck The larger the claw the more valuable the necklace. 4948

Riggs:

Q. What does the value of a grizzly bear claw necklace depend upon?

A. The customer that you sell it to. 5561

On being asked of the value of a knife, Grinnell says that the knife 'is of no particular interest unless it has been whetted down by the Indian way of using'.

Some considerable part of the witness examination tries to identify and value objects through photographs and recollections of encounters with the collection. In so doing, the methods of moving objects within and between communities are laid out: gifting, handing down, and ritual bundling. The methods of mercantile collecting are exposed: exchanging, thieving, commissioning, faking, and remaking. The connoisseur is driven to excess by rarity, the difficulty of obtaining a specimen. The huge scale and global network by which objects are transported, dealt, accommodated, and embedded into new contexts is made visible. The particular manufacture, number, size, and weight of Deslions' trunks; the teams and wagons; and the porters' delivery route to the pier are all narrated. There is no discussion of the value of the objects to their people, only of the ways in which the objects are removed from their home communities; drawn out, for instance, from 'under the beds of old women'; or exchanged for a small portion of food. Value is assigned according to provenance and association, though Grinnell concedes that 'a portion of the history is told to me by looking at the object'.

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A. I should see how it had been manufactured and I should see what marks of age it bore, marks of use, the polish of the handle, battering on the hammering end, and all those would tell their own story. They wouldn't need any label; but on the other hand, it would be much more interesting if it had a label saying this belonged to Standing Bear, Piegan, who was in such and such fights and died so and so.

Deslions' catalogue is at the bottom of the Atlantic Ocean. His memory is contested; descriptions and values assigned to his collection appear embellished and inflated. Photographs are offered in evidence as a measure of truth. The photographs produced are recently made copies of lost prints referred to as proofs or blueprints. Their veracity and relation to the lost objects are questioned. Where and when were they taken, by whom, and what do they actually depict? Which particular war bonnet? The question is whether the photographs are adequate in usefully identifying the nature and materials of the objects recorded. This is pertinent to the digitisation of such objects in the present. Is it a scalp lock or horsehair hanging from the pipe?

Q. To a connoisseur what does the picture show as to the material?

A. It shows that the leggings, being stiff, were made of stiff leather, and it shows that the shirt being made of soft material was made of buckskin. 4774

The approach to materials evoked above can be instructive. Properties and qualities of materials can be assigned to digital objects. Some of these will be evoked by the multiple texture files of physically based rendering to produce specularity, for instance, or physics applied to the mesh of a cloth, which, given gravity, wind direction, and tie points, will billow and furl.

We are confronted with the practicalities of what should be remodelled, and what should be cleaned up, and how and by whom. Equally, we must face the ethics of what should be imaged, if anything, and to whom access should be granted, according to both community protocol and broader issues of digital accessibility, infrastructures, and facilities.

The circle comes round

Having worked with digital imaging in museum collection contexts and developed an active community between artists and archaeologists sharing knowledge and thoughts, we had the opportunity to show some of the archaeological and creative work we had been doing to a Circle gathering of Knowledge Holders from Kainai, Siksika, and Piikani in Lethbridge in January 2018, with the question of whether the possibility of imaging some of their objects in UK museums would be of benefit to the community.

Knowledge Holders initially selected a small set of their objects from the online British Museum catalogue. This was done remotely and served to show how difficult search terms can be to navigate and how fraught digitally mediated access and legibility can be. AM. 2652 was amongst the objects chosen as appropriate to image. Advice from Knowledge Holders around what should be imaged was mediated by the collection manager's advice around what was robust enough to be imaged and our own team's technical experience in terms of what would compile well as a photogrammetric model (Figure 4.3). The photographs and resulting OBJ files were brought on a hard drive out to Lethbridge in 2018. The project was, at this point, funded only by small internal budgets and much goodwill, but it still seemed preferable to transport the data (photographs and compiled file) by hand and to meet in person rather than to upload or send the data. This is an acknowledgement of the importance of the haptic and material encounter, the performance of an interactive file through touch, and the conversation. Confidence and alliances develop slowly through material engagement and attention.

[Insert 15031-4760-004-Figure-003 here]

Digital image of a knife in meshlab.

Figure 4.3 Screen grab, meshlab, am 2652 decimated for VR.

Source: Image: Thomas Allison.

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After this initial visit, we won funding to develop the project substantially, and this included a visit to three UK museum collections in July 2019. We visited AM.2652 again, and some of the project team were amazed at the scale of the knife, having imagined from the 3D model that it was a small object. The surrogate object forms, which split off digitally from the knife, may distil or expand it; and we, too, can change scale or perspective with it.

Niitsitapi visitors were able to see and handle objects, and to supervise recording; but uniquely to this visit, they were able, in the longer term, to bring surrogates home (Figure 4.4). These objects co-produced on the journey do not stand in as repatriation, but they do allow people to look at length and in detail, and to share in their own time and place. Melissa Shouting describes how they can awaken latent knowledge in the community and bring to life shared stories passed through generations from ancestors. In seeing and interacting with these data objects, stories are remembered, purposes recalled, and knowledge enacted. Objects may be remade and re-enter ceremony.

For those of us from the UK, this has been a scorching journey, bringing us to face and feel historic and current trauma, our own institutional racism, and disciplinary biases, as well as the political deployment of digital media. The objects are also educating us.

Blackfoot historic objects are by nature portable or made for the body. They tend to consist of multiple materials – wood, stone, fur, and feather – these being bound together and joined by resin, stitching, and sinew. There are mobile elements – fringing and hair locks – as well as sounds and smells; and there is the fact that the objects become brighter and more alive when Knowledge Holders are present. Some are painted, some with red ochre, where the repeated application of ochre to the object produces a surface or skein and lets us know that the object is used in ceremony. The disparate qualities of these assembled implements with utility across different worlds makes them challenging to model. The virtual knife is cleaned up into triangles – polygonal – distinctions in materials produced by normals and specularities rather than by animal and mineral (Figure 4.4). Artist Thomas Allison, who captured and cleaned up the photogrammetric files for the project, suggested that we need to revisit questions of aura (a

question discussed in Jeffrey 2018). Tom asked whether the photogrammetric process, being composed of photographs, is somehow better or more accurate than modelling something in ZBrush by hand, using measurements. Is the raw data (RAW file) somehow intervention-less? Cleaning up a file and modelling requires a series of interpretative decisions, shared creative interactions between the object, collected data, and the community working with it to make a co-authored surrogate (or many iterations of such) often over extended periods of time. This is a process of slowing down. We would argue that this co-production is not so much about values of authenticity as it is about duties of care, as Nicole Beale (pers. comm.) says, not so much about owning as about manifesting a relational tool for seeing and feeling.

[Insert 15031-4760-004-Figure-004 here]

Digital image of a knife using RTI.

Figure 4.4 Mended plaster print.

Source: Imaged under RTI: Ian Dawson.

The mesh for the AM.2652 was re-topologized and optimized both for animation and for print (Figure 4.4). Each crafted iteration produced a new object. To print to scale on the machine print bed, technician Billy Dickinson split the object back into two, a handle and blade. The resulting skeuomorph was a white plaster print (Figure 4.2 and Figure 4.4) shaped like the knife but grained with the minute layering of the deposition process: a poly-material object rendered in a single medium. This version of the knife could be tracked in VR. Someone handling it could feel the size and weight of the object and, in holding and turning it synchronously, see it with the image surface. Sometimes the haptic object and the optical object would be slightly out of sync, a kind of disconcerting lag. The feel of the object also contradicts the image, having different qualities and effect. These gaps, or jolts, in experience will be important in developing the creative aspects further. We took the print of AM.2652 in hold baggage out to Alberta, slightly worried about the resemblance to a knife and implications for passage through security. In fact,

after arriving safely, the print was dropped, and the blade shattered during a workshop in Lethbridge. We brought the pieces home.

We need to acknowledge here that Indigenous peoples face systemic issues in regard to digital sovereignty, collective ownership, and legitimacy in exercising authority over their heritage. ⁵ This involves data governance, inclusive development for collective community benefit to support self-determination, the hosting of files according to local protocols, and equality of access. While we appreciate the crucial importance of Indigenous land rights in relation to sustainability, biodiversity, and climate crisis, and that these rights are of benefit to all, we also need to do more work to understand the implicit personhood rights of nature and of objects and how the digital may be a key actant in figuring this.

If we consider the journeys of a globally distributed digital form of AM.2652, split into bits and then being re-assembled according to bandwidth over and over again, what we are forming is an impression of the continuous enactment of embodiment.

Conclusion – movement and diffraction

Our aim was to respond to Blackfoot agendas regarding making their dispersed historic objects visible and available remotely to strengthen community identification, as well as in uncovering and revitalizing traditional practices and providing reference and impetus for current creative practitioners. Our paper has followed the itinerary (Jones and Gillespie 2015) of a knife in the Blackfoot collections of the British Museum. Rather than the knife revealing itself as a fixed entity that undergoes change as it shifts from context to context, we have instead discovered that the knife is a radically multistable object, a multiple object (Jones et al. 2016), that enacts and reveals a series of agential cuts as it travelled first from Sheffield to Alberta and then returned to London and eventually found its way to the British Museum stores in Orsman Road. These agential cuts continue to be made as we digitally render the knife.

The act of cutting is also a practice of revealing, differentiating, and diffracting. Karen Barad points this out:

Diffraction is a mapping of interference, not of replication, reflection, or reproduction. A diffraction pattern does not map where differences appear, but rather maps where the effects of differences appear.

Our analysis diffracts or reveals how knowledges are constructed. We diffract the digital rendering of the knife against historic accounts of the *La Bourgogne* shipwreck, revealing how Native American and First Nations artefacts came to be historically valued and what the impact this has in turn on our project of digitisation. Ethics and cultural values are themselves enacted through the very cuts that we perform (Barad 2007, 179).

As a knowledge regime, archaeology is concerned with the systematic ordering of artefactual data, and much archaeological knowledge is derived from the study of artefacts. The fidelity and accuracy of digital imaging methods developed within archaeology and cultural heritage are closely tied to the need for the systematic and accurate knowledge of past artefacts; as media theorist Sean Cubitt (2011) shows, the logic of disciplinary ways of seeing are built into our digital technologies.

Many commentators in the fields of Indigenous studies and the archaeology of colonialism have pointed out the inequality and disjuncture of knowledge in colonial encounters (e.g. Anaya 2006). In many ways, archaeology seems to be the epitome of a colonial knowledge regime imposed upon the colonized. Having said this, we want to think more positively about the capacity of the techniques and methods associated with archaeology. In past projects, we have been duly critical of digital imaging technologies, like photogrammetry and Reflectance Transformation Imaging (RTI), as conveyors of accuracy and fidelity (Jones, this volume). Paradoxically, in the context of this project, the in-built accuracy of digital images comes to have a positive impact; though we need to also be aware of the genealogy of concepts of fidelity and the way in which the differing affective capacities of digital imaging technologies appear to alter

and diffract as they shift across disciplinary, national, and cultural boundaries. Structure is revealed from motion, though this apparent structure is a patchwork of concepts and values.

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1 Ulujuk Zawadski (2018, 9) describes how *Kakpiit* or needle cases ‘extend beyond material culture. They are . . . a form of social stitching, that connects and holds groups and people together. This stitching affords protection to the loved ones by women, physically and spiritually, and social relations are preserved and emphasized through sewing’.

2 We can make a comparison here with RAMM accession 1000/1904/11, referred to in the RAMM catalogue as a ‘ceremonial knife’. The knife is similar in blade shape and size to AM. 2652 but lashed to the bone handle is an animal jaw and a piece of bearskin. This assemblage points to use in ceremony or medicine. This is also a personal object that is of great political import, being part of Crowfoot’s regalia, now in preparation for return to Siksika.

3 Anishnaabe and Haudenosaune scholar **Watts (2013)** offers a theoretical understanding of the world via a physical embodiment, *Place-Thought*. Place-Thought is the non-distinctive space where place and thought were never separated because they never could or can be

separated. Place-Thought is based upon the premise that land is alive and thinking, and that humans and non-humans derive agency through the extensions of these thoughts.

4

To George Deslions, \$25,000 for loss of property as baggage. In thus deciding the commissioner followed the ruling of the circuit court of appeals for the second circuit made in *The Kensington*, 36 C. C. A. 533, 94 Fed. 885, in which it was held that the exemption from liability conferred by the Harter act did not embrace baggage when not shipped as cargo. Obviously, also, the commissioner was of the opinion, for like reasons, that Rev. Stat. § 4281, U. S. Comp. Stat. 1901, p. 2942, – exempting a master and the owner of a vessel from liability for the value of precious metals, jewelry, etc., unless written notice of the character of such articles be given and the same be entered on a bill of lading, – was also inapplicable. The petitioner excepted to so much of the report as allowed the claims, and the S. S. White Dental Company excepted to the disallowance of its claim. These exceptions were overruled, and the report was confirmed.

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The Deslions claim is the largest in amount and was the one most strenuously opposed in the District Court. It may, therefore, be appropriately considered first. The claim was for \$50,000, the value placed by the owner Deslions, upon a collection of Indian curios. The commissioner allowed \$25,000, and, after careful consideration of the testimony, we do not feel justified in disturbing his conclusion.

It must be admitted that Deslions does not appear well on paper; he is involved in numerous contradictions and divagations;

professing ignorance of matters which should be within his knowledge and failing to remember facts which it seems incredible he should have forgotten. Indeed, portions of his testimony evince such recklessness and are so obviously prejudicial to the success of his claim that it seems as if his conduct must be attributable to other causes than those suggested by the petitioner – possibly to an excitable French temperament or to ignorance of our methods of procedure. Many of his lapses of memory and flippant answers were given when being interrogated regarding matters so clearly collateral that he could have answered fully and truthfully without in the least endangering his claim. His failure to do so seems hardly compatible with a deep laid scheme of perjury. May it not rather be attributable to some form of mental aberration not easy to characterize from a mere perusal of the printed record? It is possible that if the examination were had before the court we might be inclined to discredit his testimony, but the commissioner who saw and heard him during the 169 folios of direct and 541 folios of searching cross-examination evidently did not think him a perjurer . . .

<https://case-law.vlex.com/vid/144-f-781-2nd-594615662>

5 www.gida-global.org/care

www.animikii.com/news/decolonizing-digital-developing-indigenous-digital-innovation