

## Chasing Future Feelings: A Practice-led Experiment with Emergent Digital Materialities of Heritage

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### Abstract

High-fidelity imaging methods such as laser scanning and digital photogrammetry have captured public and professional audiences in a flurry of optimistic discourse about their capacities as forms of preservation and of archaeological recording and interpretation. With technical finesse and mastery, endangered heritage can, it is argued, be captured, re-materialized, and recovered from the forces that threaten it. As the plot concerning our 'digital futures' thickens, we discuss here an experimental project that offers an oblique approach to the practice of 3D visualization, one that subverts the dominance of neutral, technical field engagements. We examine digital materiality by exploring digital heritage objects as both method and site of ethnographic encounter. Orbiting the ruins of Asinou, an abandoned village in the Troodos Mountains of Cyprus, with our 'low-tech' equipment, we sought to observe the conditions of the 'in-between' of two *makeshift* forms, each as 'real' as the other. We focus our thinking on the tensions of translation that play on the surface of our technically crude digital assemblages, as spaces of generative potential for speculations about encounters with emerging digital materialities, their affective capacities and status as future heritage objects.

**Key words:** 3D photogrammetry, digital materiality, affect, Cyprus, digital preservation

### Introduction

'I must confess that I don't know much about computers. But I know that I like them.' (Grosz 2001: 78).

At the time of writing, COVID-19 has unspooled across the globe and our email inboxes have filled with earnest invitations to be separately together, and to venture into the realm of solitary engagement with art and artefacts via virtual exhibitions and screen-based encounters with digitized collections. The memory of being close, listening, lingering, looking for the tonal changes in a ruinous site, has become more poignant as we write. To have been *there* is a nostalgic sense-memory in lock-down, and has added an extra layer of both distance and significance to the makeshift-digital-ruins that are the subject of this paper. Here we track our journey through questions that began in response to slippery definitions of high-fidelity imaging methods as forms of preservation for cultural objects of value. We approach 'digital preservation' as a cultural phenomenon and as distinct from digitization as a professional concept. However, in both of these realms, while heritage objects are understood as fluid and malleable, the methods utilized in processes of 3D data capture are applied with rigour and discussed with implications of objectivity, or at least a rigid faith in the merits of technological alignment. Hinging on non-contact methodologies of minimal intervention, forensically accurate *facsimiles* operate as emotionally convincing prosthetics extending the reach, whilst protecting the transcendent authenticity of the original material object. So while heritage is understood as dynamic and emergent, the factual nature of the re-played digital object is approached with reverence – the direct relationship between original and surrogate articulated via acts of high-performance technology. We wondered how, specifically, might the banality of our

affective experience in the 'lived world' be pulled into digital forms? Can 'weak surrogates', low-performance digital things, stitched together from uncooperative, ordinary ruins, hold tension and pull something of fleshy materiality into their domain?

This article approaches questions about digital materiality by exploring digital heritage objects as both an assemblage of methods and site of ethnographic encounter. We designed our 'chasing future feelings' project as a practice-led engagement to creatively interrogate the conditions of the 'in-between' of physical and digital forms, and the affordances that emerge in their intersection. As a reaction against the ordered smoothness and emptiness of many of the visualizations that are found in digital archives and in 'preservation by record' exercises, and as a nudge against their (implicit) claims of capturing and neatly fixing 'reality' in digital aspic, we staged a dual run-in with a ramshackle assemblage of mud and stone in the village of Asinou in the Troodos foothills in Cyprus, and with the impenetrable surface of Agisoft PhotoScan, as parallel field sites. Our intention was to be attentive to the *making* of the image/objects that emerge from our practice and to what we could discover about the affective hooks of the software, of the places from which the digital objects are generated, and what our renderings might facilitate in their flawed composition.

In turning to questions of digital materiality, the focus of this Special Issue, our analysis combines approaches to this category as emergent and relational (e.g. Scarlett 2015; Pink *et al.* 2016), with aspects of the various 'new materialisms' that have infiltrated archaeology, heritage and museum studies in recent years – particularly vital materialisms (Bennett 2010) and post-human approaches (Barad 2007; Braidotti 2013; and see Gamble *et al.* 2019; Sterling 2020 for useful surveys of this literature). Such approaches to material affordances (Gibson 1979) have, it is argued, destabilized definitions of materiality – from something that is a 'property belonging to stable entities'; observable, self-evident, and able to be apprehended empirically, to an emergent field of relations 'defined by constraints and affordances held in dynamic tension' (Scarlett 2015: 115-6). Our exercise therefore explores the relationality of the digital and the material, approaching digital materiality as a process which does not start 'with an a priori definition about what is digital and what is material' (Pink *et al.* 2016: 10-11). We also flag that a materialist approach to the digital connotes the traditional concerns of materialism – that is, with historical contingency, modes of production and the political economy of computational infrastructure – and while 'new materialisms' strive to move away from anthropocentrism, this position aligns with a Marxist reading of history, and centrally to the 'increased material entanglement' of the Anthropocene (Pétursdóttir and Olsen 2018; Gamble *et al.* 2019: 127).

### Uses of 3D visualizations in heritage

This project started with questions that troubled at the rhetoric around digital 'preservation by record' practices in heritage and archaeology, specifically 3D data capture, such as laser scanning and digital photogrammetry. We were provoked by the unwaveringly optimistic discourse that pervades much of the promotion of 'preservation by record' and visualization technologies, and the cheerful resolution that something of value derived from material things persists in digital objects. Claiming that a forensically accurate, digital data compilation is a form of 'preservation' for complex heritage sites and landscapes, as has been proposed in the past by organizations like CyArk,<sup>1</sup> is a claim that many commentators have now critiqued. 3D digital records and visualizations clearly have important potential for heritage management and may provide resources for all kinds of future research, as well as for a wide range of creative practices, speculations and explorations. However, substantive questions have been raised around their openness, ownership, long-term usefulness and capacity for re-use, and around exactly how these digital objects will fulfil promises of making heritage more widely available and 'democratised' (Jeffrey 2015; Rico 2017). Some have pointed to the deployment of digital technologies as a troubling new form of 'digital colonialism' (Kamash 2017; Stobiecka 2020), while others claim that 3D data is already facing 'an imminent crisis of obsolescence, "resource discovery" and corporate abandonment', suggesting that the rush to capture scanned data, and to make digital objects, has not been matched by a similar concern for the sustainability of the digital records produced (Kilbride 2017: 183).

As is clear to heritage, museum and archive professionals, digitization, or digital data capture, is not digital preservation; in fact, it creates a digital preservation problem (Kilbride 2017: 185). However, the term 'digital preservation' continues to be used widely in popular contexts, particularly around efforts to digitally record, visualize and reconstruct archaeological sites and objects destroyed in violent conflicts and disasters (Kamash 2017: 612; Stobiecka 2020). This loose use of terminology particularly irritates those specialists who work within established digital preservation workflows, supported by a range of international doctrine, charters and guidelines (e.g. Owens 2018). These critics all question the ethics, objectives and political economy of this 3D data-capture-rush, its obfuscation of commercial interests, promotion of for-profit products and businesses, as well as the 'neo-colonial character of an insufficiently self-critical or reflexive application of technologies' (Stobiecka 2020: 115).

The uses of 3D digital recording and its related outputs in heritage can generally be seen to attend to one or more of the following broad objectives. 3D digital recording is now regularly used as a standard form of heritage *documentation* for purposes relating to archiving, conservation and management (e.g. Dell'Unto *et al.* 2015; Campanaro *et al.* 2016; Russell and Mitchell 2017; Wilson *et al.* 2011). High-resolution image-based modelling is also used to create visualizations designed to allow new forms of *digital access* and ways of *experiencing* heritage – imbuing the digital surrogate, and by extension the original object or site, with new halos of meaning and significance (Watterson 2015; Geismar 2015; 2018).

The outcomes that digital technologies make possible in museum spaces are also being voraciously commissioned and consumed. Sarah Kenderdine writes compellingly of the ways in which a sense of connection to animated objects and sites is achieved in exhibition spaces designed as theatres of synaesthetic experience (Kenderdine 2013; Kenderdine *et al.* 2014; Kenderdine 2018). These sorts of interventions, 'applied to the kinds of heritage associated with high levels of cultural significance in national and international heritage regimes' (Jeffrey *et al.* 2020), are instances of digital technologies being used to produce *reconstructions*, or put to use in what Katz and Tokovinine (2017) term 'experimental archaeology', testing hypotheses and re-creating imagined, or (rigorously) approximated, past forms and conditions. This is closely linked to the other broad category of use for 3D imaging which is the creation of *facsimiles*, replicas or reproductions – a practice often stemming from preservation objectives – wherein a high-fidelity surrogate is required to back-up or supersede, and thus ensure the survival of, the original. Adam Lowe, a prominent figure in the domain of 'facsimiles' and director of the multidisciplinary workshop *Factum Arte*, is dedicated to digital mediation for the dissemination and *preservation* of cultural heritage. Lowe (2015: 73) suggests that 'heritage [...] can no longer be thought of in terms of unique, immutable objects'. Instead, he argues 'we are witnessing the rise of a new "datareality" that is related but not the same as materiality, and that will change how we think and practice preservation' (Lowe 2015: 73). Hinging on non-contact methodologies of minimal intervention, *Factum Arte* has completed an impressive collection of 'exquisite' facsimiles that, it is claimed, see the aura of the original work 'migrated' to the reproduction – the datareal version coaxed into being with such care and craftsmanship that the 'clearcut distinction... becomes less crucial – and the aura begins to hesitate and is unsure where it should land' (Latour and Lowe 2010: 283).

3D models have also changed archaeological field practice in significant ways (e.g. Roosevelt *et al.* 2015; Averett *et al.* 2016; Dell-Unto *et al.* 2017; Huvila and Huggett 2018). Sara Perry has called attention to common circumstances around the production of 3D models for public outreach purposes as compounding evidence of a 'soulless practice' that has intensified neglect of more meaningful interpretation processes – often already tacked on to the end of standard archaeological workflows. She argues that the wholesale application of digital technologies in all stages of fieldwork has perhaps 'worsened – indeed retrogressed' this tendency (Perry 2018: 217), a sentiment echoed by William Caraher who is also wary of the uptake of digital innovations as compounding the effects of the alienation of archaeological labour (Caraher 2019: 378). Perry discusses a concerning trend of disregard for the value and importance of robust interpretative processes, as the creation of resources that typically constitute public-facing communication is outsourced to digital practitioners, often without sufficient acknowledgement of their contribution to the making of these knowledge products, whilst the design briefs these practitioners work from may be generated with a 'facile concern

for the general public' (Perry 2018: 214). Perry is one of several critics who have questioned the ethics and efficacy of methodologies that invariably seek to remove and obscure the 'human' element, and contends that the application of digital methods seems to incite claims of 'objectivity and efficiency that imply they are beyond critique' (Perry 2018: 219).

Whilst many of these projects are aimed at bringing (lost) artefacts or places to life, Monika Stobiecka has pointed to the tendency for digital archaeological documentation and interpretation strategies to produce digital objects that are 'deprived of matter' (Stobiecka 2018: 194), their slick surfaces rendered 'knowable' through opaque conservation/digitization processes. Stobiecka contends that working with digital and especially 3D recording technologies within a revitalized preservation paradigm may eventually contest the idea of archaeological fieldwork as destructive, while the products of this practice displayed in museum contexts often 'refer simply to themselves', rather than to the people, places or the enduring matter they purport to capture (Stobiecka 2018: 208). Similarly, Jeffrey has suggested that 'celebrated authorship' may be one way to reconnect 'sterile' digital objects with the aura of the original as at least an authentic response that leverages the networks of relations between people and things (Jeffrey 2018: 51). Another approach can be seen in experimental, art/archaeology collaborations in the 'phygital nexus' that highlight residuality in object assemblages and in their unstable digital referents – seen as the auto-archived signatures of 'actants and their intra-actions' captured as 'aesthetic paradata within this entangled art/archaeology ontological assemblage' (Dawson and Reilly 2019).

Experiments in co-creative digital practices have grappled with what these digital objects might mean to people who love particular places/objects, have family connections, personal experiences and attachments to them. Stuart Jeffrey and Siân Jones are key proponents of an alternative to the 'tyranny of a purely technical engagement with digital objects' (Jeffrey 2015: 148), and have demonstrated the capacities of community-collaborative digital recordings as generative forms of significance-making that push against dominant narratives of heritage value and authenticity (Jones *et al.* 2018; Jeffrey *et al.* 2020). For them a key point of interest is the process of *making* the record as a co-creative community activity: exploring what this record-making generates, and paying greater attention to what this reveals about the sociality of experiences of authenticity and aura, and of shared cultural memory.

### **Methods: Agisoft PhotoScan as an ethnographic field site**

These calls for critical reflection on digital practices and the hermeneutics of digital objects (Díaz-Guardamino and Morgan 2019) encouraged us to explore the *digital making* activities and experiences that are often absent from both heritage management records and scholarly accounts, and invisible in the digital objects themselves. The decision to experiment with 3D photogrammetry was made in order to reflect upon our encounters with this technology as complete new-comers to it – pushing against the mystique factor of this 'high tech', scientifically validated product (Jeffrey *et al.* 2020). By doing this we did not intend to dismiss the importance of technical expertise, experience and skills (we were sure our stumbling would highlight the key value of this!), nor to downplay the significance of aesthetic choices and artistic skills in creating visualizations, as insightfully argued by Jeffrey (2015) and others. This decision was a result of our interest in exploring how digital methods produce particular outcomes and objects – how different practices produce different heritages – by reflecting on our own fieldwork practices and novice attempts at digital making.

This practice-led research approach (Barrett 2010) aimed to be particularly attentive to the conditions that framed our engagement with/in our dual field sites – one in the landscape of the Troodos Mountains in Cyprus (that we will introduce below) and the other in the digital field of Agisoft PhotoScan.<sup>2</sup> We were guided here by a number of key ideas from archaeological and digital ethnography, and while they apply to digital photography and video we suggest that they can be extended to digital photogrammetry as a related practice (but see Geismar 2015: 318). Hamilakis and Ifantidis describe their concept of archaeological ethnography as an attempt to 'engage seriously with photography – not as a documentary process but as another cultural field' that has 'important ethnographic, sensorial and ontological implications' (Hamilakis and Ifantidis 2016: 6). Anthropologist Sarah Pink defines digital ethnography as

an engagement with becoming, performance and movement, not a representation of a static reality. She encompasses this notion in her term the ethnographic 'place': 'if we understand place as constituted through movement, the movement of persons, things, the intangible flows of energy, the weather, sunlight and of the emotions, then as researchers we need to find ways to follow these [...] things, sensations, feelings' (Pink 2015: 245). Importantly Pink approaches the digital images captured in the field not as representations or records, but as *traces* – traces of the movement of the person and a camera through an ethnographic place/assemblage – the outcome of an embodied, emplaced encounter with the human and non-human world. Our fieldwork thus aimed to do what Pink calls 'finding ways to follow things/sensations/feelings', recognizing photography, and its manipulation in the digital field site of Agisoft PhotoScan, as another ethnographic place or encounter site, and with us the researchers as both object and subject, as an acknowledged part of the assemblage.

This experiment also aimed to try to get at, or get behind, the opacity of the image/objects that proliferate in digital heritage, not observing/recording, but encountering and participating in the material conditions that combine to produce them. While Jeffrey has suggested methods for crafting authentic digital objects that go beyond the empty, sterile and 'weird' examples commonly encountered (Jeffrey 2015; 2018), Geismar has commented on the affordances of digital objects that can act, not as surrogates, but as vectors that expand museum objects with 'alternative contexts, knowledge networks and affective experiences' (Geismar 2015: 318). Our particular concerns, as introduced above, have revolved around contested notions of 'reality capture' and 'digital preservation', and the purported expert deployment of this technique as a way to stabilize, 'preserve' and safeguard heritage objects and sites already deemed culturally significant, and especially for those considered to be 'at risk'. Digital methods have been particularly implicated, because of their scientifically calibrated accuracy and level of detail, as powerful tools in the capture, replication and 'preservation' of heritage values, adding to the 'black boxed' nexus between cultural concepts of value and taken for granted assumptions about exactly how and what heritage methods record and interpret.

Objects of heritage caught in the grip of the conservation ethos are often seen as the 'compliant subjects of stewardship, management and control – and the future, in turn, is seen as a matter of design(ation)' (Pétursdóttir 2020: 92). Heritage and curatorial discourse, and conservation practice, are dominated by approaches that work to 'clean up' material remains, interpreting them only in light of their 'past functions' and 'former names' (Pétursdóttir 2020: 97). The collapse into ruin and disorder, drift and change, the evasion of memory and value, is approached by 'heritage' as something to be cured, curated, and redressed. Conversely, Caitlin DeSilvey has explored that 'tense place between abandonment and attention' and the affordances and disclosures of the material past in-transition, as a counterpoint to the prevailing conservation paradigm that shapes the terms of our engagement with heritage (DeSilvey 2017: 21). We drew from this attitude of keen attunement to the effects/influences collaborating with heritage remnants, forming new arrangements of matter, in our approach to the village of Asinou, and to its digital surrogate. DeSilvey foregrounds 'decay' as a productive force, signalling a willingness to adapt existing methods to meet more exploratory, probing ends, thinking through complex webs of 'slippery materiality' (Law and Lien 2012) and contingent affordances that do not fall within the neat boundaries of 'heritage'.

Recent explorations of heritage value suggest that 'significance' might be better understood as more than simply ascribed, but as *enacted* through frictions between humans and material pasts (Olsen and Vinogradova 2020). The turn to 'vibrant materialities' in heritage and archaeology has given rise to a rich vein of research experimenting with alternative forms of generating accounts of materiality. Such accounts make space for creative, future-making practices that interact with memory, place and things in ways that are often not possible in the context of official heritage regimes because of rigid values-based paradigms (Ireland *et al.* 2020). We position our digital, practice-led methods with other open-ended attempts to engage with materiality that appear to us to be 'chasing future feelings', rather than fixed on documenting and preserving at risk heritage/values. This 'endangerment sensibility', as it has been termed by Vidal and Dias (2016: 5), means that while empirical observations and rational, scientific knowledge *appear* to be the basis of heritage conservation, the perception of risk 'emerges only in connection with certain values, feelings, interests, and views about

the present and the future of communities and humanity at large'.

We focused our thinking on the tensions of translation that play on the surface of our technically crude digital assemblages, as spaces of generative potential for speculations about encounters with emerging digital materialities, their affective capacities and potential status as future heritage objects. Our flawed digital manifestations, and our unphotogenic, mundane yet affective material site, are set in strange relation, in the 'in-between' of two *makeshift* forms, each as 'real' as the other.

### Asinou in Ruins: memory and materiality

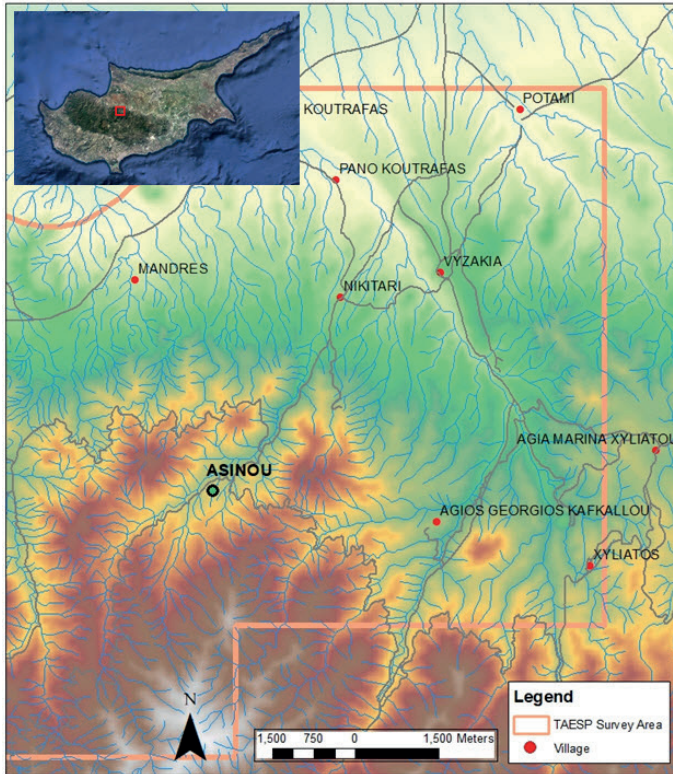


Figure 1. Map showing location of Asinou in Cyprus. Map: Neil Urwin.

generated aimed to facilitate these multi-vocal and multi-perspectival interpretations, not only by the very large team of archaeologists and other specialists involved, but in the future by other users, through providing access to its linked relational database and comprehensive GIS based repository (Given *et al.* 2007). While the project was not conceived as a 'community archaeology' project, it had a formal oral history research stream and this was designed to contribute to ethnographic understandings of the cultural landscape, rather than to understandings of contemporary social or heritage values or meanings.

### Reflection on TAESP (Tracy)

Despite TAESP's foundation in computational methods, my fieldwork over those hot summers was resolutely 'analogue', and involved spending *a lot of time* in the sun with camera, notebook, compass and tape measure. As a historical archaeologist, my brief was to record and analyze the built traces of the recent past – defined as the Ottoman (1571-1878) and British colonial

To explore these concerns through a case study, we decided to return to a landscape to which one of us (Tracy Ireland) had built an attachment when working in Cyprus on the *Troodos Archaeological and Environmental Survey Project* (TAESP) over five seasons of fieldwork between 2000 and 2004 (Figure 1). TAESP was a methodologically and technologically sophisticated GIS-based archaeological survey which resulted in a hefty two-volume, multi-authored study, *Landscape and Interaction* (Given *et al.* 2013). The project featured explicitly reflexive survey methods and multidisciplinary approaches, including a 'flattened hierarchy' aimed at 'democratising' input into interpretative research processes (Given *et al.* 2013: 11). The comprehensive digital archive that was

periods (1878-1960) – particularly abandoned and still occupied rural villages, water mills, water management systems and other agricultural remnants such as threshing floors. These were the traces of daily rural life from the past 400 years – the distinctive evidence of intensive agricultural production from the Ottoman period, and of the economic, environmental and social changes wrought by British colonial policies, as well as by local resistance and responses to those events (Given 2002; Gibson 2020).



*Figure 2 Asinou village in 2002. Photo: Chris Parks*

At that time, it was unusual for archaeologists to focus on such recent ruins of colonialism in the Mediterranean as they were generally not considered to fall within notions of heritage, archaeology or research value. The abandoned village of Asinou (Figure 2) had been a key focus for my fieldwork from 2001-2004, adding to the work of a large survey team concentrated on the northern foothills of the Troodos Mountains and the Asinou River valley (Gibson *et al.* 2013). Since the twelfth century AD this valley has been adorned by the tiny, exquisitely painted church of Panayia Phorviotissa – World Heritage listed in 1985.<sup>3</sup> Archaeological survey was also an unusual method to be deployed in the mountainous regions of Cyprus and an important aim of TAESP was to better contextualize these well-known medieval remnants within an enhanced understanding of the cultural landscape. A key success of the work was to conclusively demonstrate continuous land use since the late Roman period, countering notions of this upland landscape as isolated and marginal (Given *et al.* 2013: 204).

Often working on my own, I slowly developed a schematic measured drawing of the Asinou village remains, constructing a biography of these structures, observing and recording, stone by stone, how they had been altered and re-used over periods of use, adaptation and abandonment. We concluded that the ruins showed evidence of successive periods of abandonment and re-use over a period of three centuries. The time scale was derived from the pottery types found around the village and observed embedded in the mud mortar of the stone and the mudbrick walls, as well as from a fragmentary historical record suggesting that the village had been completely abandoned in the 1880s, but reoccupied by at least three families in the 1920s (Gibson *et al.* 2013: 221-6). Returning to my original field notes in 2017,

I found a record of a conversation with a woman who lived locally and who approached us during fieldwork in 2002. She told us that the last couple to live in the village were her parents, Solomos and Estella – she showed me the room where her mother had died and which still bore the traces of their lives (Figure 3).



*Figure 3: The house of Solomos and Estella in Asinou village photographed in 2002. Photo: Chris Parks.*

Fieldwork in Cyprus was for me fraught with tensions – as an outsider, and as an archaeologist from a colonized place engaging in the colonized, contested landscapes of others – and where archaeology was clearly complicit in colonization, as in so many places. What was less easy to account for in TAESP's complex landscape methodology was the material overlay of events in Cyprus since 1974, the date of the partition of the island following the invasion by Turkish troops. The survey area was hard up against the 'green line' and the border was firmly closed to us during our TAESP fieldwork. The material remnants of trauma – barriers and barbed wire, dead-end roads, empty houses and abandoned vehicles – were omnipresent in the landscape, and in every conversation and oral history interview, and yet not within the purview of the archaeological analysis. Yiannis Papadakis (2005: 1) has claimed that in Cyprus the dead speak louder than the living, and archaeologists are of course attuned to the voices of the dead. I knew that writing about abandonment and ruin in this landscape was shaped for me by what Yael Navaro-Yashin terms *melancholic objects* and *spatial melancholia*: a melancholia that is both affective and discursive, subjectively experienced but mediated through 'objects and non-human environments' (Navaro-Yashin 2009: 16). Focused on the analytical tasks at hand, I put aside these concerns back in the early 2000s, but this memory was part of the impetus to return to Asinou and experiment with digital methods in 2017.

### **Digital Ruins: Return to Asinou**

TAESP's oral histories and the project's close attention to the densely networked social landscape led to a focus on the mobilities of both the recent and distant past in this rural region (Given *et al.* 2013; Gibson 2020). In part it was the evidence of constant movement, flux and

flexibility, changing environmental, economic and political circumstances, that took the study team away from traditional phenomenological approaches and towards a focus on 'conviviality' (Given 2013), movement and becoming, reinforcing the appropriateness of the practice-led, ethnographic (finding ways to follow) methods we adopted for our new digital engagement with place. To study landscape is to experience multi-temporality in place – how past and present are entwined in both material and social terms – and it was this renewed interest in archaeology and heritage studies in materiality, vibrancy and agency that suggested how we might re-engage with the TAESP archive and the TAESP landscape. How might these digital tools contribute to our understanding of how old things shape and influence social life; how objects accumulate long biographies; and how memory is formed in a complex 'dialectical feedback loop' with the pushback of the material landscape (Dawdy 2016)?

In 2017 the unforgiving Cypriot sunlight picked out the evidence of past daily lives literally mortared into the walls of Asinou: broken clay tiles, pithoi storage jars, colourful medieval sgraffito and the handle of a Roman amphora – all observed eroding out of the lively mud matrix of human and non-human action and interaction (Figure 4). These walls thus form a 'social stratigraphy', as Shannon Lee Dawdy (2016) has termed the dialectical tensions between urban material pasts and presents. To paraphrase Dawdy and Marx: people make villages but not exactly as they please. The endurance of old things shapes later material worlds. Kostis Kourelis (2010) has described the yearning for the 'comfort of perpetual abandonment' as a central motif of the Hellenic world's incomplete modernity. Like so many ordinary/extraordinary places in Cyprus, these brecciated accumulations can be experienced as heterotopia (Foucault and Miskowiec 1986), places where time collapses, materiality and memory merge.



*Figure 4: Experiments in Agisoft PhotoScan. The house of Solomos and Estella in Asinou.*

### Encountering Digital Materiality

After seeking permission from authorities, land holders and community leaders, and equipped with our new cameras, monopod and tripods, we ventured back to the Troodos foothills and Asinou. The digital-making goal that we set for ourselves was to construct a model of the village in its setting – including the invading trees and grasses, the fallen roofs and crumbling walls – capturing something, we hoped, of its more-than-human materiality, as well as our history with the place. Could we harness the technology to fit our own particular 'skilled vision' (Grasseni 2007) and our aims of 'chasing future feelings' (Frederick and Ireland 2020: 280ff)? Or would the technology be 'disobedient' (Scarlett 2017: 221) and adapt us to its ways of seeing and rendering?

Our first impression of Agisoft PhotoScan was that it was an astoundingly intuitive program and great fun. This might speak to our inexperience, but it did not, for instance, seem as threatening as the dark abyss of AutoCAD. Instead, the digital photogrammetry appeared to be much more accessible than architectural modelling and rendering and Agisoft PhotoScan loomed as a beckoning expanse of possibility: go, be in the world, see things and return with the trace of your movement – the software will pull it all together! For this romantic notion to work in reality, the software requires photographic recording with very specific movements in preferable conditions: orbit around an object in a non-occluded landscape, in a soft, consistent light that casts no ephemeral shadows that could obscure its understanding of the material forms it is tasked with translating into new, datareal versions.



Figure 5: Hand stitching ruins.

The uncurated ruins of Asinou defied these conditions: dramatic topography, strewn with ruinous debris, a mess of oddly intersecting walls blurred by waves of grass and jagged caper bushes, reflective corrugated iron sheets anchored with random stones (Figure 5). This site of collapse and disorder thus presented as a form unfit for the logic of Agisoft. But, in part, this was the point of the exercise, as was our taking up of ‘consumer-grade’, relatively accessible, ‘reality capture’ technology. As the experiment unfolded, we adjusted our postures in the field to the behaviours that the software revealed as we uploaded our first images – toggling with the limitations our photosets had imposed on the point clouds – gaps, cracks and ticks (tangential fourth dimensions) revealed in the digital field hours after we had trod the perimeter of our site.

It became apparent that the pursuit of digital objects using this software, attempting to direct cohesion from a mass of images, is marked by judgements, choices, decisions. The process does not hold to the principles of objectivity that the promotion of these products might emphasize – the models are inflected by the convictions, persuasions (and persistence) of the human at the helm. As Geismar argues in the case of 3D renderings of museum objects: ‘3D digital images in museums seem like photographs but in fact are *hand-made, hand-stitched models* that mimetically evoke the veracity of photographic indexicality in order to simulate the original collection’ (Geismar 2015: 318 our emphasis added). The makerly process of working the 3D rendering has a definite auteur whose vision, technical mastery, cultural background, understanding of visual codes of aura and authenticity, and feelings about rubbish and ruins, shape the outcome.

We found that Agisoft may produce different results from the same dataset at different times, producing different alignments of the same photographs in separate trials, and that it does not care for peripheral details – for pixels on the edge – it prefers discrete boundaries. We clearly did not want to reproduce the aesthetics of emptiness that seem to dominate the ever-increasing digital archives of the things and places found on Sketchfab: these clean-cut representations with few clues of chaos, where the sense of sprawl and non-human activity is replaced by an atmosphere of ghostly absence. We learned that this pervasive neatness is, at least in part, an artefact of this kind of software, combined with the limitations on the size and complexity of what can be accommodated on the Sketchfab platform. We returned to the site many times to re-photograph those areas of collapse, entangled vegetation, and reflective iron roofing that challenged the software and which it stubbornly refused to visualize, determined to try to force the model around corners it did not seem to want to turn (Figure 6). We crudely patched, plugged, and merged the model where it turned soft grass and roof collapse into strange fluid pixel-flows. The ‘final’ village model used 1,453 photographs, and comprised 27 separate merges and 4,589,327 ‘faces’ – the small flat planes which make up the skin of the model.<sup>4</sup> We also experimented with programs that made the model ‘whole’, so that it could be 3D printed, but then rejected the result because it then looked too ‘finished’ – like something created for a model train set village – and thus not ‘following’ the fluid, emergent latencies of the unfinished digital object.

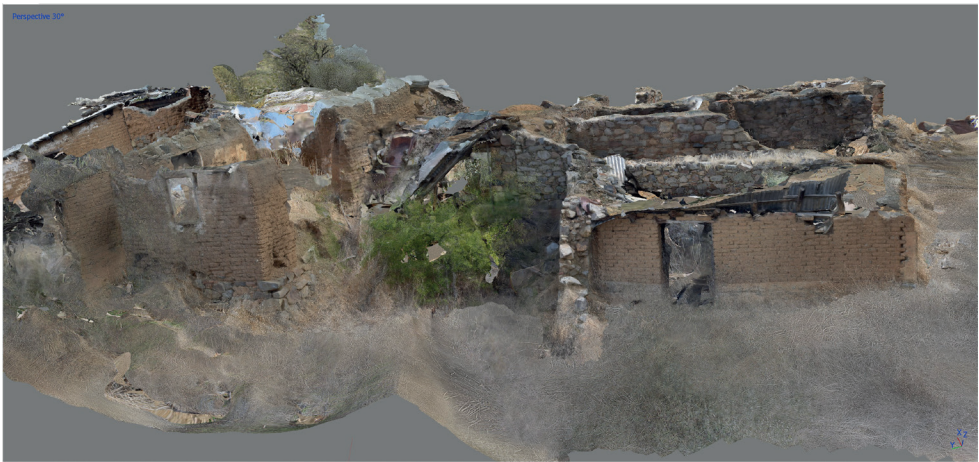


Figure 6: *Crafting collapse.*

Ashley Scarlett’s descriptions of an ‘improper materialism’ have helped to further tease out the strange a/effects our incomplete models afford – they are rigid and yet fluid, translucent but textured – a montage of movement and of being in place. They carry with them an aura of ephemerality as they emerge on the screen, glimmers of a tentative, volatile ‘realness’. But our PhotoScan Asinou is real, a material thing – perhaps, as Scarlett suggests, ‘because they have the capacity to make themselves felt in and through the body, rather than simply [being] an object for thought’ (Scarlett 2015: 119).

So what is emerging is that we, together with Agisoft PhotoScan, are co-creating a ‘thick assemblage’, constituting a digital ‘ethnographic place’ which has become the site for our specific encounter. We are using the software’s algorithms as a ‘way to follow things, feelings, sensations’ – as a method that heritage and museum studies can perhaps use to complicate practices that are ostensibly seen as ‘objective’ recordings of reality, as opposed to tracking a unique encounter between emplaced and embodied agents. The pixels of the digital image/object trace our embodied experience, tracking the movement of the sun, and changes in the weather; just as we awkwardly clambered, it also stumbles over the caper bushes and wild olives that occlude the ruins from the software’s liking for formal architectural

qualities (Figure 7). We are often surprised or delighted by what the algorithms snap together visually – revealing unexpected compositions of texture, light and shadow – and by what surfaces resist algorithmic translation into photo/data reality. Rather than presenting new answers to the old questions about Asinou – that might have centred on the model's level of detail, its potential to reveal new information about materials, construction, or adaptation over time – the digital object suggests new kinds of questions and opportunities for reflexive engagement with disciplinary frames and methods, and with the status of the knowledge that is purportedly produced. We remain curious about how these digital things, should they need to fulfil their foreseen role as future relics, will perform as heritage objects that evoke and sustain the 'illusory belief' necessary for 'forging a shared social reality' (Otero-Pailos *et al.* 2016: 14), an idea Jorge Otero-Pailos unfolds in his discussion of 'experimental preservation'. Our rendering is of a place sticky with affect, mediated through our making process, our methodological experimentation, our experience of Cyprus' historical contingencies and the affective atmospheres of Asinou's melancholic spaces. And this raises questions of other digital objects: What/who are they following? What feelings are they chasing?



Figure 7 Chasing future feelings – our makeshift digital Asinou.

### Conclusions: Chasing future feelings

As Denis Byrne attests, heritage and museum discourses tend to evince 'a modern mastery of matter rather than a vulnerability to it', these are practices via which old things are put 'in their place, a place that is outside us and subservient to our rational intellect' (Byrne 2020: 858). Here our methods try to *feel into* what Scarlett (2017: 224) has described as the 'ambient omnipresence of mediation' and to give an account of the feeling of digital materiality, and of makeshift digital heritage things in flux. Our experience of our 'weak surrogates' is that they are something to feel or inhabit – an engagement with 'open and unbounded intensities of things, persons and processes, always in progress' (Pink 2015: 243). Whilst they do not purport to *know, measure or record* the attributes that prove and demonstrate cultural 'importance' or 'value', or ameliorate any risks of decay or loss, as might be expected in a museum or heritage context, they are traces of an ethnographic place. Our experimental, practice-led methods, driven by emplaced and embodied encounters with retreating material pasts, bolster our understanding of the digital practices of museums and heritage management – speculating on what we do to digital heritage objects and what they do to us – trying to hook into the frictions in the objects we have produced, by virtue of their failures. Central to moving towards an understanding of digital materiality is this acceptance of these modes of mediation as forms of 'grounded speculation' – modes that are both material and speculative, incomplete and imaginative (Scarlett 2015: 127). Our makeshift digital objects are 'jumpy materialisations of practices' – questions rather than answers – conundrums rather than elegant theorizations (Katie King cited in Lury and Wakeford 2012: 9).

In this experiment in material alteration, the non-discursive, empirical materials and matters of fact of the ruinous Asinou become wriggling, rewriteable pixels on screens. These low-performance, incomplete visualizations do not 'measure up' as slick facsimiles; however, it seems to us now that they are only failures of fact, not feeling. The surface tensions they hold, their emotional affordances, are accessible through their makeshift qualities: an always partial, always passing version of our days at Asinou. In this sense, they demonstrate the instability of the boundaries between materiality and digital materiality, as Elizabeth Grosz (2001: 79) vividly articulates; digital virtuality is but a different fabric or format for the same structures of imagination that we have always lived in and with.

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## Notes

- <sup>1</sup> CyArk, <https://www.cyark.org/ourMission/conservation>, accessed 19 September 2020.
- <sup>2</sup> Agisoft PhotoScan was superseded by Agisoft Metashape in 2019. We continued using software purchased in 2017 for the experiment described in the paper.
- <sup>3</sup> UNESCO, World Heritage Centre, 'Painted Churches in the Troodos Region'. <https://whc.unesco.org/en/list/351/>, accessed 19 September 2020.
- <sup>4</sup> The 'final' Asinou village model, reduced in size and complexity for uploading to Sketchfab: <https://protect-au.mimecast.com/s/cqZMC71Zo8uz2jwQf8cm5H?domain=sketchfab.com>.

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