

**Developing methods, keeping contradictions:
designing digital health multimedia as object centred research in Indigenous Australian**

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Introduction

This paper presents a mutual interrogation of a project developing and evaluating digital resources concerned with human respiratory and circulation processes for Indigenous Australians, and the understandings of objects in a body of work which I will loosely call after Actor-Network Theory work. I'll begin by very briefly introducing the project, and then some key concerns in the after Actor-Network Theory literature. In both cases I present the nature of objects, and how we account for difference, as central concerns, and then use this as the entry point into a more situated analysis. I begin to re-present the project here by telling three episodes. Along side this I tell the Digital Objects through a typology of symbol-index-icon. I use this typology to become sensitive to the multiplicity of what DOs might be and might become in the project and conclude with some observations on the consequences of taking mutual interrogation as a form of analysis.

Quickly, for many of us we are at home among digital objects, they are our familiars. For us they work as representations: words, photos, diagrams, videos all showing and telling about something absent. This understanding of digital objects as representation is part of our 'digital native knowledge' if you like. And I am going to ask you to suspend that knowledge to help DOs become strange again. Here is a digital object. Or is it here, or is it the coded electric circuits, the software and hardware, or is it the 2 million bits of code on here. Here is affects presenter and audience, here it does not. Here it strongly affects a particular user, and perhaps owner, on this it user/owner is more vague. So, where is the digital object? What exactly is a digital object? To get at these question we need to pay attention to the often unwieldily materiality and let go of the assumption that digital objects are only always representation.

The Project [\[CLICK\]](#)

Healthy Breathing and Heart - set out to assemble a set of digital objects and to present them in a workshop setting in order to provoke discussion amongst senior, profoundly bilingual Aboriginal consultants and medical professionals.

[\[CLICK\]](#) 'Together we will design, produce, apply and evaluate appropriate, cross-cultural, visual [digital] educational materials for respiratory, circulatory and sleep health for Aboriginal Australians who speak Indigenous first languages.' Healthy Breathing Heart and

Sleep Project Proposal

So, at issue was the use of these digital objects in an intervention aimed at promoting understandings of the difference that having healthy lungs and hearts might make to Aboriginal people and their communities. The participants at the workshop were eight Indigenous Yolŋu consultants from North East Arnhem Land. The non-Indigenous participants were Professor Pierce, or Rob as he asked to be called, the very enthusiastic and generous respiratory physician who initiated and brought funding to the project, two facilitators from Charles Darwin Uni, where the workshop was held, and two graduate students, of whom I was one.

The workshop methodologies were carefully set up allow as much as possible Yolŋu knowledge traditions to develop and structure the workshop and project. One way this was attempted was by taking the DOs as a starting point from which the consultants could consider and discuss any issue that they felt was relevant in the use of DOs in health care settings. A more conventional approach might have been to begin laying out all the social or cultural differences between European settler Australians and Yolŋu in regards to what constitutes knowledge, understandings of the body, appropriate forms of education, speech et cetera. This was specifically avoided as it was understood to be already firmly embedded in a Western understanding (and one familiar to sociology and anthropology) of an distinct social or cultural realm independent of it nature and the world of objects. Since the workshop, many of the consultants have considered the appropriate development of these DOs as a critically important task. They believe they are in part responsible for this task, and have dedicated themselves to it.

Science and Technology Studies

In the Science and Technology Studies [CLICK] the role of objects in knowledge work has also been of critical concern. One can think of Rheinberger's 'epistemic things' (Rheinberger 1997, 28), those necessarily irreducible, vague, emergent objects or Carin Knorr-Cetina 'knowledge objects' (Knorr-Cetina 2001). But here, I will specifically turn to Annmarie Mol and her book *The Body Multiple*. In it she argues;

[CLICK] 'somewhere along the way the meaning of the word "is" has changed. Dramatically. This is what the change implies: the new "is" is one that is situated. It doesn't

say what [an object] is by nature, everywhere. It doesn't say what it is in and of itself, for nothing ever "is" alone. To be is to be *related*. The new talk about what is does not bracket the practicalities involved in *enacting* reality. It keeps them present.' (Mol, 2002)

Mol, like many of her colleagues, bring explicit attention to an appreciation of reality, to ontology: the ways objects are born and live in practice, in the embodied, situated, here and now. She also argues for the possibility of understanding these enacted and enacting objects as multiple, not in the sense of there being many different objects, but in the sense that an object can be multiple, can be different across difference situations.

So, keeping those two quotes in mind, and to the specific reasons for paying attention objects in this analysis, let us enter the project. Before we do however, I'll quickly flag the typology which will be worked up along the way. **[CLICK]** Helen Verran (Verran 2010) has introduced a typology which overtly contrives a differentiation of collective and emergent entities through recognising their material and semiotic agencies. She radically strips back, but also re-embodies, Charles Peirce's metaphysics of signs as symbol-index-icon, to offer a tool to sensitise oneself to the multiplicity of objects we might encounter.

Three Episodes: following the Digital Objects as entities in tension

Episode One **[CLICK]**

So we enter the workshop on the afternoon of the first day. The workshop was held in a ordinary conference room, with all participants seated around an oval table and Rob, the respiratory physician, his laptop and projector at one end. The task of producing shared understanding with the DOs was proving more and more difficult and the consultants were becoming more circumspect toward them. There were long pauses and with the conversation frequently in Yolŋu Matha, Rob, the respiratory physician, and I had little idea of what was being said. The discussion frequently re-affirmed the shared purpose of the project - the potential of DOs becoming useful objects in Yolŋu communities, yet it seemed that addressing the DOs directly was the origin of the difficulties.

'Pictures like this [CLICK] ... the moving ones, does it matter? What did you think of that one where you could hear the breathing?' asked John the facilitator.

This one was generally liked.

'We've only been looking at lungs,' said one consultant. 'Some for example, we might do a different design because we Yolŋu, we are shy and modest people. We might come up with a different idea, for animated [DOs].'

'Are there some parts [of the body] that you should not talk about?' asked Rob.

'Not really. Just the way of presenting it so that when you have people, and who's in the room, who's there and who's not, you know, who we should talk about ...'

'So the way you tell the story differs for who's present' explained another Consultant. One way to understand what she was saying is that here the story – the DOs - are like icons; they are tightly co-constitutive of the situation and its people.

This was explained again by one Consultant. 'What are we, this group, going to do? We need to take it back to the community, because this is very important, very important, and ...'

Rob interjected 'Yes, I understand you. You're saying ...'

'I don't want to put you down, or put us down, but I want to ... show ... that's the message that a lot of Yolŋu people can't get that clear. Someone has already explained that we thought there was only one lungs, but they are all different, names, and all the terms.' What had become obvious was that these terms could not be talked about independently from the people the DOs were intended to educate.

This episode tells the DOs as icons. An exemplary icon is the line in geometry, [CLICK] it is itself and its definition. This is not a representation of a straight line, it is a straight line. Working as icon here, DOs are tightly constitutive of the here and now of the project. The bodies of the DOs were co-constitutive of the bodies in the room and the potential bodies in communities as whom the DOs would try to reconstitute as healthier. Not only was talking about DOs talking about bodies (and hence Rob's question regarding particular things that should not be talked about), but being particular bodies in the room enacted DOs as enmeshed and co-constitutive of those very bodies. It was about who was in the room, and who would be in the communities. For the consultants, most important question to be addressed became was who are we and what are we going to do, because because DOs were a secondary concern, but because who we were was constitutive of what the DOs were.

Now lets witness a very different DO as it emerged at the very beginning of the project, three months before this workshop.

Episode Two: Assembling the DOs [CLICK]

We are in a little cubicle in the Biomedical Media Unit in Melbourne University's Faculty of Medicine. There, Rob, David, one of the Unit's media designers, and myself huddled in a cubicle facing a large screen, talking and pointing.

Our task was to assemble as many different DOs together: posters, pdfs, books, videos, animations, photos, interactive widgets, programs and hand sketched diagrams. Each object was digitised and re-produced within a single PowerPoint file. [CLICK] 'It is about having many different versions of the same thing' Rob explained. Occasionally he described a particular DO and invited me to comment on its possible effectiveness.

We worked the many DOs as mere symbols of the human body; arranging them, editing them, cropping them, in total independence from any real human body. The PowerPoint file however, did not support the embedding of many of the objects: some movies and animations remained distinct files linked via hyper-links in the PowerPoint file and one interactive program had to run from its proprietary CD. The file was carefully put together and copied for Rob and I to look at at home, away form the cramped setting of the cubicle.

At the final meeting however both Rob and David had revised the file producing two different versions. Embedded in two different files each with hyper-links defined by two different folder structures on two different computers, the ensuing reformatting, took longer than any meeting prior. Despite our familiarity of DOs being self-contained objects, independent of any embodiment of what they represented, they were embedded in different file types, folder structures and computers.

So here I am telling DOs as symbol: a particular form of enacted and enacting object. These DOs as symbol come to life through practices of collecting, scanning, cropping and editing with posters, hands, eyes, computers, software and screens. However, they are not simply affected by practices

but are also affecting of them. As symbols these DOs can be many version of a single thing – the biomedical body. This leads to the proliferation to DOs – images, videos, animations, interactive widgets, which was a good thing. However, by only doing symbolizing work this proliferation eventuated in two version of the file stored on two separate computers. Hence, though not connected to the real bodies they are understood to articulate, these DOs were no less embodied in particular materialities, with of which we became very aware of much our frustration.

I have now presented DOs behaving as icons – tightly co-constitutive of a single performance, and as symbols – representing in here a reality our there. I now want to present them as somewhere in between these two – as behaving as indexes, which occurred just as the DOs tried to re-configure themselves in the translation from the Biomedical Media Unit and the workshop setting.

Episode Two: Beginning the workshop

The workshop began early in the morning. The presentation of the DOs as images projected on the wall began. 'I have here a whole lot of different ways of talking about breathing ... What I want you to do is tell me which ones you think are the best.' And her presented the DOs. [CLICK]

After a few slides however, conversation between the consultants in Yolŋu Matha¹ interrupted proceedings. John, one facilitator turned the conversation toward English

“They think it’s your blood because it’s running through your body” he said.

“Blood is running through your body”, Rob confirmed.

“There is air here and here”, explained one consultant touching her wrist and neck.

“When a Yolŋu is about to die, then the Yolŋu put the wata from here back again” another said, massaging from her shoulder down to her hand.

“Yes, yes, but . . . ” said Rob trying to follow the words and body movements.

“Circulation, in your words it’s circulation, but in our words it’s wata, wind.”

“Or breath.”

“Yeah, and you think of blood then going out into the arteries?” asked Rob.

“Or air?”

“Or air? Or air going into the arteries!” Rob seemed astounded.

¹ A group of related languages variously spoken by Yolŋu Indigenous Australians in North East Arnhem Land.

“Yes” agreed all the consultants.

“You see, this is not so. There is no air in the arteries” Rob said and explained that blood flows in your arteries. His explanation, however, did not refer to the DOs, but, emulating the consultants, he worked the DOs as indexes of practices of knowing bodies, demonstrating blood in his arm by running his hand down the inside of his arm.

In this episode DOs are indexes. Although they arrived at the workshop as symbols and began working in this way, as representations of the body screened on the wall, in the workshop setting they soon began to index bodies, eliciting practices and behaviours that in other times and places (including to some of you here) seemed quite odd: accentuated breathing, elaborate demonstrations of where blood flows and massaging the wrist and checking the pulse of a perfectly healthy participant in a workshop considering DOs. Thus, as indexes, the DOs enacted bodies as both necessarily narrated and also breathing. We can think of an index of a book: necessarily literary, a text, but nothing without being part of the the book, its pages, paper of silicon.

Difference as Material and Semiotic: Digital Objects as symbols, indexes and icons

How is this typology of symbol-index-icon doing analysis here. First, it is a typology which openly contrives a differentiation of the vague objects that were the DOs. It does so by paying attention to the material and semiotic agencies of the DOs. They were not waiting to be found out there through a process of discovery, as objective projections of a real body. Nor they were not purely the construction of a skilled multimedia designer in an wealthy Euro-American university. What these DOs were and were to become in working as useful objects in generating shared understanding between Yolngu patients and western trained health workers remained vague. Indeed, working out what these DOs might be was the task of the project.

So the task of analysis here is to become familiar with the emergence of the DOs in the the project and how they worked to affect specific practices and understandings. Hence, it is also important that the typology of objects – taken as dynamic, emergent, material semiotic entities - keeps the here and now of the project in the foreground. This is because what is being done here is a mutual interrogation of the typology and the project. I am wondering if the metaphor of indexing is a good one for the analysis being presented here. I could say what the typology is doing is not representing

the real objects of the project, nor does the typology purely enact them. It does both, the typology indexes the project and its objects. The analysis works up an account of the project, no more and no less, than the project works up an account of analysis. In this way the analysis aligns itself with the project and its responsibilities: as both project and analysis seek to stabilise DOs enough to go on in our collective work.

In addressing this question the workshop considered taking DOs as icons and creating a completely new collection co-constitutive with each of the the many times and places of their use. This however, was prohibitively expensive, close to \$100 000 per production. So perhaps as icons the DOs would not work. What about if we made DOs as symbols and used many of those already existing (provided a shared copyright could be successfully negotiated)? The very motivation of the project was the potential use of existing DOs worked as symbols: independent from any specific language, highly portable, variable in being 'real' literal or schematic, animated or interactive. There were two difficulties with this however. First, they were only 'portable' if the correct equipment and skills were also present. Were there laptops in communities? Is there space for computers in clinic waiting rooms? People had DVD players, the workshop was informed, but encoded as a DVD you could no longer interact with the DOs. Second, there was also the potential for DOs as symbols to empower western trained professionals and sideline Yolŋu knowledge, and this elicited behaviour was a issue n the workshop.

Perhaps DOs are best worked with as indexes, as both story-telling and enacting. Working DOs as indexes was extremely difficult as I told about in the last episode. The simultaneous experience of all participants being embodied, living, breathing people, and demonstrating this quite dramatically, yet at the same time using very different words and stories to go along with this being an alive person – in your words its circulation, in ours its *wata*, but in my world its blood and that is not air – was profoundly disconcerting, tiring and testing, precisely because these very different stories of living and breathing could not be fully separated from a seemingly shared experience as an embodied, living and breathing person.

However, to try to fix the real and proper DOs as either symbols, indexes or icons is to miss-use this typology. As I pointed out at the beginning, the typology symbol-index-icon works with a dynamic and emergent reality always in tension and irreducible to independent, singular objects. The typology is not about naming the real being of DOs, what they really are, it is a conceptual device

for getting to know them and working with them within the very practices of their becoming (one might say it is a method not a metaphysics). That is, it is a device for getting to know and working with DOs as multiple, as different objects, but still DOs all the same. It is about holding this contradiction of DOs being both the same and different at the same time. Helen Verran has talked about a database participating in analogous work. She writes, it is about 'working at the level of entities' existence or being—ontics. It is about learning to manage knowing along with doubt about reality. Weaning oneself from certainty. It implies recognising that reality can be done in this way or that, through this series of gestures, words, and material arrangements, or an alternative set.' (Verran, 2007)

Conclusion

In conclusion, I have been developing a different account of difference. Difference not as difference between knowledge systems, different minds, different social positions, but between different 'series of gestures, words, and material arrangements.' In this account, in staying true to the project's locale, drawing attention back into its here and now, what would often appear and feel like insurmountable differences and contradictions (the biomedical body and indigenous theories of the body and well-being, Western knowledge systems and indigenous knowledge systems) emerge in less stark relief, and they are allowed to remain as differences and contradictions while not immediately requiring adjudication of right or wrong, true or false, but equally not prohibiting the collective task of making better or worse DOs. I have done this by contriving a differentiation of the vague objects under consideration: the DOs, through the typology of symbol-index-icon. What this typology allows us to do epistemology and ontology together. What becomes open for negotiation, what becomes possible, is not limited to indigenous and Western knowledge claims (purely at the epistemic level), but what objects are to be and become (the level of the ontic) in this specific project, working towards creating useful and used DOs and healthier indigenous lungs. I have focussed on indexes as both a way to understand moments when the familiar framing of representation (symbol) and performance (icon) come together, and as a way to consider research methodology. Indexes allow us to keep objects vague but no the less present in our research and keep our research attentive to the on going work of the situations in which we work.