INTRODUCTION

This is a book about storytelling: the stories that we tell to make sense of the world and share knowledge, and how these stories determine how we live. Storytelling is a cultural activity which is both epistemological (composing knowledge), and ontological (giving context to our existence), and embedded in these stories are the values and perspectives held by the communities that tell them.

In Australian Aboriginal culture, Songlines map the vast lands of the continent, its seasonality, plants, animals, the animate, inanimate and interrelated meaning and contexts. These Songlines — from creation stories to new stories — are activated through ceremony, rites, rituals and protocols, and embody deep knowledges which vibrate through Country, kin, and Aboriginal technologies.

Digital consumer technologies give new ways to tell our stories, ways that allow them to immerse the audience and be shared across the world, but these technologies are themselves woven out of a story that jealously defends its dominance and perpetuates a view of the world that privileges the few at the expense of all others.

The technologies we use impact our lives through implicit worldviews baked-in to their operational logic. They aren't neutral instruments, but a human endeavour, and their intended purposes, capabilities, and acceptable uses are shaped by the cultural landscape from which they are manifested. Western science as a 'grand-narrative' is interlinked with colonial power, and has driven technological development according to its own values and understanding of the world, distributing the benefits and costs of technology unevenly according to a familiar map of European empire, and nourishing and propagating technologies that conform with its drive to 'capture'.

In practical terms, inclusion in the set of voices and stories told with this technology is not universal: they may be prohibitively expensive to access (as, for example, oil paints historically were), and their usage is tightly regulated to preserve a model of consumption (where otherwise sophisticated technologies are actively designed to restrict free creation by users). The way a technology

models the world (the aesthetics) may embody implicit politics that insinuate themselves into the meaning of the expressive outcomes (e.g. the map assumes the legitimacy of a reductive, 'objective' account of the world), and they may, intentionally or unintentionally, exclude certain people from full participation through decisions made in their design.

In this book we argue that technology is not a neutral instrument, but the application of a particular culturally-specific set of knowledge to solve a (perceived) problem. *Technology is a cultural practice*. Through the book's four contributed papers, we explore the legacy of Western colonialism and how it manifests through the landscape of contemporary technology.

In doing so, we are arguing for the importance of 'decolonising the digital'. In broad terms, 'Decolonising' describes a process of disentanglement from colonial power, seeking independence and self-governance: "creating and consciously using various strategies to liberate oneself from, or adapt to, or survive in oppressive conditions".[1] Decolonising is an ongoing process. It is the active awareness of the pathology, implicit racism, cultural assumptions, and bias within Western systems and the championing of the repressed and silenced voices/knowledges/histories which challenge the historical narrative that excluded them.

Through this book we argue for a framing of 'technology as cultural practice', describing the historical backdrop and contemporary operation of Western culture in forming mass-market technologies. This culture, co-created through the Enlightenment and intimately tied to mechanisms of colonisation, sets up a paternalistic 'responsibility' to withhold agency through control and oppression, not just of colonial subjects, but anyone not fitting the historical archetype of the rational agent (e.g. women). The crisis of colonial culture still at play in modern science and technology affects everyone. It's evidenced by the proliferation of profoundly unsustainable, environmentally destructive industrial technologies, and emerging digital technologies that narrowly benefit the world-view of a privileged few to the exclusion of others.

The claim to universality of Western science is fundamental to its use as a tool of dominance, and hides its subjectivity, cultural-sitedness, and Eurocentric perspective. Because of this, the project to 'decolonise the digital' addresses not only brutal colonial history — the violent enforcement of behaviours and prohibition of practising Indigenous technologies, for example — but intellectual integrity and perspective, responding to the historical erasure of diverse voices from the dominant historical account. This myopic view of the world should be of concern to everyone, especially against a backdrop of the enforced dominance of Western science and technology which continues to reproduce bias and inequality at a cost to the environment.

For those whose existence, stories, and cultures have been historically excluded from consideration in the development of technologies (e.g. languages not available, faces not recognised), the manifestation of culture through technology and science is abundantly clear. For them, this book may be seen more as a rallying cry for the value of diverse perspectives. Contemporary art practitioners, knowledge producers and storytellers themselves, should identify with process of articulating ways of seeing the world that are at odds with the dominant system, which present challenges to its set of values and hierarchies, and be reassured in the legitimacy of their research. For those privileged readers whose worldviews and experiences are represented by and through Western technology, the book offers illuminating essays and discussions breaking apart the myth of acultural science and technology.

This book benefits from being composed in the context of the world's oldest living peoples, Australian Aboriginal peoples, with the longest continuum of cultural practice and technologies. In the second part of the book we showcase contemporary Australian Aboriginal digital media projects that continue the creators' cultural practices and storytelling through innovative use of emerging digital technologies.

Equal parts provocation, inspiration, and guide to thinking about and working with emerging digital technologies in a critical way, this publication is intended for a broad audience, from experimental artists to the broader public. Through contributors' case-studies, showcases, and interviews, the collection will challenge 'conventional' thinking on appropriate forms of cultural expression and the apparent neutrality of digital technology. As a whole, the contents forms a polemic argument against the characterisation of technology as neutral or acultural, and offers a toolbox of strategies for critical, postcolonial engagement with emerging digital technologies.

WESTERN SCIENCE AND TECHNOLOGY AS COLONIAL CULTURAL PRACTICE

The cultural and historical backdrop to the Western science is well documented, yet while it is common from a Western perspective to frame non-Western systems of knowledge as 'cultural practice', the approach to 'making sense' of the world stemming from the Enlightenment is wielded as universal and acultural.

The mythology or 'grand-narrative' of Western scientific rationalism was a tool used to enforce European control over colonies; in one move setting up a system of understanding the world, and at the same time using this system as a measure with which to hold itself as superior. It traced human development on a linear scale, with 'enlightened', rational, objective, male Europeans at the apex, and reinforced a system of hierarchy and privilege that placed all others (women, racially 'other' colonial subjects, genderqueer communities) as inferior, weak, and childlike, and used paternalism to justify the invasion and exploitation of others, couched in a sense of moral responsibility (i.e. 'the white man's burden').

As part of these imperial projects, science and colonialism went hand in hand. Explorers like James Cook and botanist Sir Joseph Banks are heroic icons in Australia's colonial history, with their missions to expand imperial territory intertwined with scientific investigation and cartography (e.g. Cook's observance of the transit of venus, Banks' botanical 'discoveries').

Claiming that technology is a cultural practice isn't to say that it rests on the intangible, that western science fails to predict outcomes, or generate utility. It's to say that its way of making sense is contingent on social systems and structures, and is driven by the motivations and 'secular mythologies' of that society.

Satellites orbit the world, relying on an application of the *Theory of Relativity* to correctly provide a GPS position within our *Google Maps* app. The computers we use are able to accomplish an incredibly complex series of tasks to our satisfaction. But these technologies aren't created arbitrarily: they were developed according to the values (economic models, a focus on logistics, and push for bureaucratisation) of powerful interests. In the last hundred years, technologies and scenarios nourished by the dominant, imperial drives of Western society have include Nuclear Weapons[2] (and the concept of Mutual Assured Destruction), Eugenics, and industry unabashedly contributing to Anthropogenic climate change. The GPS we use in our phones is a military technology for strategic maneuvers and accurate targeting; cartography itself (e.g. Great Trigonometrical Survey in India) supported tax collection, policing, and military expansion. The computers we use today are descendents of corporate logistics machines (i.e. *International Business Machines* — IBM), and their development supported by

their profitable utilisation for dispassionately tracking and accounting for huge numbers of victims of the Nazi regime.

The direction of technological development isn't a neutral or benign decision – research grants and corporate funding rests on speculation of what will make money (often linked to generous defense funding), and even where a technology has emerged without economic utility, the gap between a proof-of-concept and a utilisable product is often impossible to bridge without finding it a 'market'.

The paradox of Western technoscience is that despite the claim to breath-taking leaps of 'progress', the world is not convincingly better off:

> *At the very point in history where we appear to be able to explain the formation of the universe itself, when we have the ability to utilis energies as great as those of the sun, the majority of the world's population still live in poverty, the resources that made 'modern civilisation' possible are fast being depleted, and the byproducts of that civilisation threaten to transform the climate of the whole world.*[3]

In contrast, technologies developed by Australian Aboriginal peoples have shown their utility to sustainably nurture, nourish, and cultivate driest continent on earth for millenia, not only demonstrating the successful stewardship of the environment, but the flourishing of a cultural practice of technology embodying the responsibility to care for Country.

AN OLD, FAMILIAR FUTURE

The future is already here — it's just not very evenly distributed
— William Gibson, Science Fiction writer

In the context of the mid-nineties, rife with techno-utopian dreams of the future, amid the rapid development of the Web as a tool for global knowledge-sharing and the growing sophistication of mobile technologies, Gibson's quote seems like an optimistic herald to an inevitable near-future. But this can be taken a different way — informed by an understanding of the colonial logic resting within the modern practice of technology development we can speculate that this 'uneven distribution' is by design. Not a waiting for everywhere to catch up, for an inevitable even distribution, but actively externalising the costs of modern technology (e.g. in producing the iPhone: child labourers mining Cobalt in DR Congo[4], lakes of pollution in Inner Mongolia[5], suicide-as-protest by Foxconn factory workers[6]) while directing the benefits of empowerment and representation to a small handful of privileged users.

The dynamics of this power inequality are playing out in how contemporary technology is practiced:

Mahli-Ann Butt and Thomas Apperley's paper, *"Shut up and play": Vivian James and the presence of women in gaming cultures*, describe the harassment, and brutal and explicit violence employed by a subset of the male-dominated gamer community to gate-keep participation by women in the digital games community, both as players and creators. These male players feel a sense of ownership over the computer game culture and attempt to regulate the use of technology and prohibit unwanted practices, especially focussing on resisting a push to increase the representation of women and women's stories in games.

Ramsey Nasser's paper, *A Personal Computer for Children of All Cultures*, broadly critiques the aculturality of technology, showing that even at the abstract level of programming languages (effectively tools for building mathematical machines) Western culture and language is inextricably embedded, and that design decisions built on implicit, Anglocentric assumptions has led to programming disadvantaging non-English writers, and practically excluding users of non-roman languages. These sort of design decisions continue to reproduce inequality through algorithmic bias, and technologies that similarly either disadvantage or entirely exclude, out of a lack of perspective and sense of the universality-of-experience of their creators.

Josh Harle's paper, *Digital Capture: Photogrammetry as rhetoric, fiction, and relic*, explores the extraction, isolation, and representation of knowledge using digital scanning technology, examining one such technology, photogrammetry,

as not only the result of the culture of Western science, but an active form of its continued claim to legitimacy.

Technology does not serve everyone evenly. It ignores some, while others continue to be needed to turn the cogs, to dig up the materials. Benefits are distributed here, damage distributed there. While Western society is happy to fervently embrace the positive aspects of technology, the damage and risk associated with its production is externalised, and hidden from view.

Evident in the progression of modern Western technologies is the drive for power and exploitation. 'Disruptive' technologies actively seek to destabilize labour models and hard-earned protections that were created to redress power imbalances that had existed at least since the Industrial revolution. Social media tools, while seemingly 'free gifts' and occasional tools for community-building and emancipatory participation, subject huge populations of digital subjects to tracking and exploitation as products themselves. Within the iconic technologies of our generation is a continuation of an old story: technologies must serve the powerful, thoroughly engineered to make money and comply to a unifying business logic.

The destructive, exploitative, and unsustainable nature of imperial logic manifested in technology, conceived of as a way of extracting resources,[7] should now be obvious. The world is not an open system, and as much as it may be possible to comfortably ignore the environmental and human costs being exacted in the name of 'progress', it is not possible to ignore the global consequences. Climate change and the migration of dispossessed people are two related crises that offer grave threats to our survival.

While efforts and investment have turned to the production of sustainable technologies, the appearance of sustainability has proven as effective for drawing the interest of consumers, and 'green-washing' has become a marketing activity. Western attempts at sustainable technology has proven problematic, with energy-saving lightbulbs requiring the use of precious metals, and Tesla's endeavours to support renewable energy through battery installations contributing to the rapid depletion of the world's supply of Lithium.

'Decolonising the digital' is not only necessary as a response to the profound inequality of power and representation perpetuated through modern technology, but as an appeal — at a point of crisis — to generate new directions for the forces of science and technology, informed by the full diversity of knowledge systems and voices of the world. What's at stake is the capacity for humanity to understand our world and respond to contemporary challenges, and even grow, in the face of many problems that have been created from the use of Western rationality as a tool for imperialism and inequality.

A WORLD OF DIFFERENT VOICES

By framing the use of technology as a cultural practice, we hope to engage the reader in a critical discussion of Western 'technoscience' actually operates, who it benefits, and how it can better serve everyone. In destabilising the claim to universality and revealing the Western cultural underpinnings, space is made for the role of diverse knowledges in the task of responding to contemporary challenges.

The supporting myth behind Western science's claim to a single, totalising way of understanding suggests a fundamental inability to believe two different 'sciences' or knowledges could both be legitimate, and through colonial science this has been enacted as a blanket dismissal of non-Western knowledges (as well as local practices deemed as superstitions). However, while Western science is keen to hide its contingency, this mythology falls apart as propaganda when we look at the actual practice of science, through examples such as *Classical Physics* co-existing along-side *Quantum Physics*. One story of the behaviour of masses compliments another. These two 'models' are applied pragmatically to negotiate understanding of the motion of planets, wave-particle duality, or the operation of miniaturized electronics. They are two metaphors, allegories, stories.

As Angie Abdilla's paper, *Beyond Imperial Tools: Future-proofing technology through Indigenous Governance and Traditional Knowledge Systems* suggests, Indigenous peoples' Traditional Knowledges are vitally important in informing the direction of future sustainable and ethical technologies, specifically in areas such as Artificial Intelligence (AI), robotics, Virtual Reality (VR) and Augmented Reality (AR). Within an Indigenous worldview, your sense of place, belonging and purpose in life is firmly grounded and informed by a complex, culturally dynamic science and series of technologies, evolved from a reciprocal relationship with the land, waterways, and skies which have nurtured thousands of generations of Australian Aboriginal peoples.

The Aboriginal and Torres Strait Islander practitioner's works featured in this book showcase the diverse ways in which Indigenous knowledges and innate relationship to the land are able to be continued as new digital cultural practices. The consciousness that exists within Aboriginal Australian technologies old and new — their vitality, resonance, and spirit — are integral for informing a future where Caring for Country and Caring for Kin are the primary motivations of science and technology.

It's our hope that this book encourages and inspires the reader to imagine new practices of technology that are respectful and inclusive of the vast diversity of human experience.

INTRODUCTION NOTES

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