Junctures

The Journal for Thematic Dialogue

22: multi-

November: 2021-2022

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Cover Image:
Zhi Zulu, The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom, 2019.
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FEDERICO FRESCHI

Editorial: 'multi-'

After a hiatus caused by the successive lockdowns of the Covid pandemic in 2020, *Junctures* 22 returns with a full issue that amply lives up to the journal's mission of encouraging discussion across boundaries, whether disciplinary, geographic, cultural, social, or economic. The call for submissions invited contributors to reflect on how the notion of 'multi-' could prompt the ability to perceive the world in new ways, to reveal new truths that are hidden in plain sight, to make connections between seemingly unrelated phenomena, and to generate solutions. This invitation was prompted by the assertion that as the world around us becomes increasingly complex and as the tensions between technological advancement and environmental degradation increase, solutions for a sustainable future are only going to be found through collaborative approaches that are open to paradigms and knowledge systems that are other than those that have sustained the status quo.

As may be expected from such a wide-ranging theme, the call yielded critical reflections on various forms of creative practice, to discussions of cultural identity, to the interface between art and science, as well as the role of multidisciplinary science in geopolitics. The geographic scope of the contributions covers much of the globe, from Aotearoa New Zealand to Canada, South Africa, Malaysia, and the Transpacific region more generally.

Bruce Russell's *"I contain multi-tudes" – a meditation on the need for rough and rowdy ways"* uses Bob Dylan's lyrics as a point of departure to set up a radical argument for an approach to creative practice that embraces failure and mis-competence as alternate strategies for finding meaning that is multi-versed as opposed to binary. In keeping with the notion of 'rough and rowdy' Russell suggests alternatives to conventional methods of analysis, arguing for multiple simultaneous viewpoints that suggest a multiplicity of interpretive possibilities. As he puts it, by adopting a multi-versed approach, he has "done apparently impossible things simply by refusing to think of them as impossible."

Also focusing on creative practice, Maggie Buxton's *"Portals, parallel realities and transdisciplinary place practice"* argues for multi-dimensional investigation and inter-disciplinary research and practice. Proceeding from a reflective, autoethnographic approach to her own creative practice, Buxton addresses the key theme of interdisciplinary study and arts and ecological responsibility. She notes that much her practice has "involved working at flax-roots level with mana whenua in Aotearoa (and indigenous peoples in other nations)" that sit outside of traditional academic settings. As such, her approach is one of multidimensional transdisciplinarity, operating at a level of community that is "unconfined by disciplinary or faculty boundaries." Drawing on her own projects, she argues that such an approach enables productive ways of opening portals to parallel realities and new points of view.

Extending this view of multiple knowledges in enabling an approach to ecological challenges, Joe Citizen's *"Navigating knowledge frameworks at the intercultural interface"* draws on collaborative research to reflect on the intersections of knowledge between Western science and mātauranga Māori (Māori worldview and perspectives). Citizen counterposes rationalist Western ontological and epistemological traditions with the relational ontology and epistemology of Indigenous Knowledge systems and worldview. He shows how these positions lead to different goals and understanding of what is significant in research, and links this to actual research with a rōpū (collective) working on knowledge about Te Maramataka (the Māori lunar calendar). Such an approach, he argues, "enables a better understanding of how mātauranga Māori is location-specific, complex, and interwoven with te taiao [the earth or natural world], and therefore has much to offer Western science in learning how to be more ecocentric rather than humancentric."

In a further exploration of the value of a multidisciplinary approach to ecological crisis, Pam McKinlay's *"Transdisciplinarity in the Dunedin Art and Science Project"* gives an account of an ongoing set of collaborations, beginning in 2013, between artists and scientists from the Dunedin School of Art and the University of Otago aimed at establishing positive activism around climate emergency. She shows how this multidisciplinary approach displaces didactic protest with a more successful opening of the conversation through an affective connection and engagement with human and non-human subjects. The resultant 'hybrid space' enables sensory encounters that enable an affective relationship with the hard facts of data measurement and the lived experience of communities. "For those that are overwhelmed with the sense that we are standing on a precipice," she argues, "art has a certain capacity to engage with the affect of climate change, that is, the embodied experiences of uncertainty, fear and hope."

Working within an Indigenous Knowledge framework in a student-centred project that spans Aotearoa New Zealand and Canada, Caroline McCaw and Louise St Pierre's *"Attentive and appreciative: designers connecting with more-than-human beings"* extends the notion of the multiverse to include the 'more-than-human world'. The article describes how students, working with local Māori and First Nation cultural advisors in Dunedin and Vancouver respectively, were challenged to become advocates for another (non-human) being by drawing upon multiple frames to learn about their being and in so doing conceive of possible different relationships. The outcomes were a variety of prototypes, designed to share this advocacy as experiences for others, and demonstrated "an extraordinary amount of humility, and a re-setting of presumed hierarchies. ... [bringing] humans into the place, into an authentic relationship, one which is non-extractive and compassionate."

In *"Negotiating different worlds and diverse cultural legacies through applied creative practice in a situated learning project: Hlakanyana 2022"* Sarah Roberts also reflects on a multidisciplinary theatre design projects for students that deals with the complexities and contradictions of multiculturalism in post-apartheid South Africa. From the perspective of a participant observer, she contextualizes the multiple challenges confronting a diverse group of students from various design disciplines in arriving at a design concept and presentation for a new play *Hlakanyana*, which was based on the eponymous trickster of Nguni folklore. She describes the abundant multiplicities of the project and shows how designing the production required dealing with issues of cultural identity along with tensions between tradition and innovation. Amongst other positive outcomes of the multidisciplinary approach, she notes that, "The need to master an unfamiliar multi-modal challenge instilled [in the students] an appreciation of developing attentive listening skills and debate."

Pfunzo Sidogi's *"Multi-histories: Creative and narrative plurality in graphic novels exploring indigenous histories"* contrasts the approaches to the telling of the stories of the Zulu heroes King Shaka and his mother Queen Nandipha by two graphic novelists, Luke W Molver, a white male, and Zinhle (Zhi) Zulu, a black female. Using the notion of multiple histories, he argues that the authors' subjectivities apparent in the retelling in graphic form of these Zulu stories from "one of southern Africa's most storied indigenous nations" are "poignant artistic exemplars of how indigenous histories should always be re-told in the plural." Interpreting them through the lens of multi-history and multi-subjectivity ultimately allows graphic novels to "display a creative sincerity and commitment to multi-African histories and futures that transcend the classifications of gender and race."

In *"The soul of the masks: a journey in the Mah Meri indigenous carvings,"* Delas Santano and Harold Thwaites explore a multimodal approach to research undertaken in the digital archiving of traditional wood carvings amongst the Mah Meri communities in Malaysia. In discussing the intersection of digital technologies with the transmission of indigenous cultures in this particular community, Santano and Thwaites offer a perspective on how multimedia, digital technologies and techniques may support the retention of cultural practices.

Sabine Chaouche's *"Live Performance as a Multiverse: from the present moment to the transverse effect"* shifts the discussion to the realm of performance practice in theatre, positioning the actor as a creative participant in the complex intercourse of the theatre world. Chaouche argues that as a construct, performance is best negotiated with an evolving understanding of 'multi-' – particularly the notion of the multiverse – at the forefront. The multiverse, she argues, "is at play when art mobilises individuals working together towards a same goal: the performance of the play in a specific place, at a specific time and for a certain duration." She suggests further that a closer understanding of this multiverse system, how it operates in the context of performance and its cross-cutting effects can contribute to a better understanding "of cognitive functions and states of consciousness, and new philosophical views on the self, the phenomenology of acting and the philosophy of the mind."

While Tony McCaffrey's *"Different Light Theatre: multimodal practices in learning disabled theatre"* also deals with theatre practice, in this article the focus is on the ways in which multimodal approaches are used in the creation of self-devised performances produced by Different Light Theatre, a long-running company of learning-disabled artists in Christchurch, New Zealand. McCaffrey situates his

discussion within the experiences of the company members, calling attention to the ways in which they deal with the ableist bias of public spaces and institutions. At the same time, he prompts us to consider the implicit power dynamics of non-disabled facilitators working with learning-disabled artists. He notes that in engaging with different modes of performance, "the performers themselves changed the goalposts in myriad practical, technical, material, unimagined, and imaginative ways, shifting the paradigms, and sending us, the non-disabled facilitators, back to the drawing board to reconfigure what we collectively understood as theatre and as the assemblage that constituted the group." The multimodal approach that underscores the company's mode of working ultimately generates fundamental questions "about what is meant by ability, capacity, and virtuosity that have far-reaching implications for theatre and arts practice and research."

Leo Chu's *"Between democracy and technocracy: ecology as multidisciplinary science in the Transpacific Cold War"* concludes the journal and shifts the discussion of 'multi-' to the realm of ecology and geopolitics. From an overview of significant players in the development of ecological scientific work during the Cold War period of the latter half of the twentieth century, Chu moves to a discussion of technocratic approaches to ecological science and how these shifted from the United States to Southeast Asia. He shows how multidisciplinary approaches to ecology developed in parts of Southeast Asia and concludes that although such approaches are not without their problems – not least being apolitical, co-opted by multinationals and blind to structural effects on ecologies and communities – an inquiry into "the politics of apolitical ecology might also help to rediscover a collective imagination for alternative social and environmental relationships."

Individually, and in different ways, these essays provide compelling and provocative insights into the complexities, contradictions and coherences that emerge when we consider the possibilities of 'multi-'. Collectively, they invite us to view their core debates through a multiplicity of lenses, making timely and provocative contributions to rethinking the epistemological boundaries of disciplinarity.

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BRUCE RUSSELL

"I CONTAIN MULTI-TUDES" – A MEDITATION ON THE NEED FOR ROUGH AND ROWDY WAYS

I go right to the edge, I go right to the end

I go right to where all things lost are made good again

I sing the songs of experience like William Blake

I have no apologies to make

Everything's flowing all at the same time

I live on the boulevard of crime

I drive fast cars, and I eat fast foods

I contain multitudes[1]

Since his elevation to the Nobel laureateship, quoting the lyrics of Bob Dylan seems even more apropos to successfully understanding the rubbish which fills 'modern times,' and the possible solutions to our current eschatological predicament. In the more-or-less poetic 'meditation' which follows, I will use his lyric as jumping-off point for a kind of wilfully Derridean exegesis. My aim is not to attempt to divine what St Bob 'meant;' but to use 'categories' derived from his words to cast a sideways light on an emergent art form based on improvisation with sound, which I believe can show us the embryo of a strategy for resolving some of the challenges we are currently facing.

This framework of ideas, I argue (informed as it is by my reading of Guy Debord), may serve to support new disciplinary paradigms, and also to mirror a sustainable future strategy for socially engaged creativity based on the breaking down of distance between artist and audience, the questioning of otherwise unexamined cultural presuppositions, and the creative re-use of post-industrial detritus. The ultimate goal is a form of creative practice that points to a way out of our current impasse, towards universally emancipatory outcomes. Towards a *style of* (and for) *living*, that can aspire to universality; to accommodate, to satisfy and ultimately to contain multitudes.

EVERYTHING'S FLOWING ALL AT THE SAME TIME …

One of the most pressing characteristics of life in 'modern times' is that we find ourselves continually exposed to a barrage of 'content' driven by the weaponisation of the internet by a new global elite of techno-robber barons. The toxic, apparently irreversible and intentionally directed nature of this assault on 'civil society,' through the precision-targeting of individual psyches on a mass scale, is usually referred to by the unacceptably benign name of 'social media.' But it is best understood by using the name that Guy Debord gave it, before it was even born – *the integrated spectacle*.

As Debord put this in 1988: "the final sense of the integrated spectacle is this – that it has integrated itself into reality to the same extent as it was describing it, and that it was reconstructing it as it was describing it."[2]

Apart from climate change (with which it shares common root causes), this truly "spectacular" corrosion of all meaningful social bonds, and the fatal undermining of the individual will to live which accompanies it, is the most serious threat we currently face as a species – because it prevents us from even seeing what lies behind each and every other threat: rampant inequality and an industrialised death-drive.

I believe that the only way to push back against this "veritable Matrix" is to identify tiny cracks in the commodity spectacle where creativity, and its handmaid, collaboration, can carve out limited zones of autonomy – some room to live. *This* must be the work of 'art,' and the art which does this will be striving to resist commodification. Nothing else matters in a time of emergency; and surely we have arrived now at a point where everyone can accept that there is a global emergency unfolding 'in real time'?

To realise this avowedly utopian goal, of kicking against the pricks, 'art' will need to draw on ideas that are already "in everybody's mind."[3] In plainly dystopian times, only utopian solutions can have any chance of success. Now that we are living in 'the worst of all possible worlds,' we need to get over the pessimism about human nature that neo-liberalism has enshrined into the all-encompassing ideology of "capitalist realism,"[4] and find a 'North-West Passage' – towards forms of action that affirm our autonomy as human subjects, rather than accepting our passive transformation into reified objects.

Luckily a map is at hand, courtesy of Debord's "revolutionary poetics," which can show us how improvisational art practices might transcend the limitations of avant-garde elitism and be placed at the service of such a revolution. Properly understood, Debord's ideas point to improvisation as a true integration of theory and practice which, if implemented with sufficient rigour as a creative strategy, can literally 'change minds,' away from the zombie state of uncritical receptivity required by 'modern life.'

My experience of this over many years has been enacted within an apparently insignificant international art underground of networked sound improvisers. Thirty-five years and as many albums with The Dead C. on numerous American, European and even New Zealand labels has still generated, deservedly and reassuringly, little mainstream media attention. The insignificance of this still "emergent practice"[5] in terms of media attention and capital investment is of course its greatest strength; it is, in Bourdieusian terms, at the "most autonomous pole" of the field of cultural production.[6] As a result, the work is undertaken largely free of economic incentives, which

always tend towards the service of power. As a consequence of this structural autonomy, enduring forms of social action through art, and the social relations that underpin these, become possible. These forms have so far proven 'un-recuperable,' because in terms of their *aesthetics* they do not conform to established norms (as Bud Grossman said to Llewyn Davis at the Gate of Horn, "I don't see a lot of money here"). Their virtue instead resides in their *poetics*: the roles they play in establishing relationships and the ends that these then enable in society.

I LIVE ON THE BOULEVARD OF CRIME

Anyone who feels perhaps that some of my assertions are 'overly poetic' should consider that my hero, Guy Debord, judged that the reason power misprized him so thoroughly in later life was not what he did during the 1968 events, but rather in 1952, when he undertook for nearly two years to "never work,"[7] but rather to engage solely in a form of "working without a work." This latter phrase is one of the best definitions we have of improvisation understood as a creative practice.[8] Debord's efforts at that time were directed almost exclusively to the activity known as the *dérive*, a psycho-geographical action that involved the aimless perambulation through an urban environment by a small group of individuals collectively engaged in mentally charting its changing ambiances. What was important in this focused attention to the *dérive* was its impact on the collective psyche of the participants; which was, in a real way, a work of art realised as a *style of living*.[9] The point of this activity was to create a group of potential revolutionaries psychically trained to resist the commodity spectacle, a process that in their case led to defeat in 1968, but to a defeat which nonetheless planted seeds against the future.

And this is essentially my argument. That in these times, even a style of living can be a form of rebellion, and an 'unpopular' artwork that defines, articulates and builds the improvised creative capability of a group engaged in such a style of living could be the most important form of activity open to us. Such work does not require unsustainable, massive server farms of hard drives ceaselessly crunching algorithms. On the contrary, it leverages capabilities inherent within the human psyche to create its own meaning – ex nihilo.

In this light we may see the street as the opposite pole to the internet; a pole where social change may be realised through a revolution in everyday life ('fast cars … fast foods'). A revolution which must in a real sense be seen as a 'crime' against power, even if it is just as often also seen as a crime against taste.

I SING THE SONGS OF EXPERIENCE, LIKE WILLIAM BLAKE

Behind these assertions of course, lies the foundational work of Walter Benjamin. Building on the achievements of the Surrealists, he elevated flânerie to the level of both artform and tool for interrogating commodification, anticipating many of the insights later independently arrived at by Ivan Chtcheglov, the archetypal Lettrist *dériveur*.[10] In doing so, Benjamin was responsible for elevating the concept of 'experience' to the forefront of understanding life in a given social, historical and economic formation. Benjamin understood culture as a complex of overlapping perspectives, within the intersection of which the meaning of any given artwork could change radically over time. He castigated the opposing view of fixed historical reality independent of any given standpoint (an unchanging aesthetics of 'eternal masterpieces') as "historicism."

For Benjamin the true 'origin' of an artwork was not when it was made, but when it entered into the historical context that gave it definitive meaning: "The authentic – the hallmark of origin in phenomena – is the object of discovery."[11] And that discovery can happen in unexpected ways, at unforeseen times, emerging unexpectedly from a "monad" or cultural constellation – and by definition the existence of a constellation depends on the point from which it is viewed. This is why experience becomes central and, as the Situationists found, everything depends on the lens through which you view it. Hence their decision not to condemn, but rather to eulogise, the rioting arsonists of Watts in 1965; not as criminals, but as true revolutionaries: "the irreconcilable enemies… of the alienated way of life of the entire modern society."[12] In that vein of course, Benjamin had already in the 1930s advanced the thesis that history is nothing but a pile of wreckage; and a record of barbarism written by the victors, to boot.

So we should consider, what can art do with this wreckage; gratuitously? I use the latter word in its primary sense – given or done free of charge. For something done for the good of all people cannot be done for the benefit of any one person – disinterestedness is one of the primary hallmarks of authenticity. And this is why I advance the claim of a minor art, which has proven itself able to travel everywhere, but be successfully commodified nowhere. As Benjamin went on to say in the quote cited above concerning the nature of the authentic: "the act of discovery can reveal it in the most singular and eccentric of phenomena, in … the weakest and clumsiest experiments." These are all honours I freely claim for my own work.

I GO RIGHT TO THE EDGE, I GO RIGHT TO THE END, I GO RIGHT TO WHERE ALL THINGS LOST ARE MADE GOOD AGAIN …

So this "going right to the edge" can be understood to mean the periphery of culture, the edge of what is generally accepted and understood as 'art.' In this, improvised sound work has the great value of being 'not-music' (but rather, rough and rowdy). As such it is not freighted with the ideological baggage of bishops and princes, whose patronage gave rise to 'proper music' in the early modern period. If it has a cousin, it is in folk musics, which were never codified or written down while living, but relied on oral transmission and improvisation; within a setting ("the boulevard of crime" – teeming with Baudelairean gamblers, whores, rag-pickers and apaches) in which audience and performers were not separated or defined by particular respective expertise, nor by a fixed etiquette of performance.

In this way it can (within a field of restricted production[13]) fulfil the Situationist requirement of fundamental opposition to 'separation' (and specialisation). Whether in their few theoretical discussions of the *dérive*, or indeed of revolutionary action per se, the Situationists always made plain that the revolutionary class would be "people actively participating in every aspect of their lives … [and not] a new audience for some new spectacle."[14] So, in this way the identity of audience and performers in a field of restricted production marks its suitability for just such an extra-aesthetic, or poetic, form of creative practice.

The experience of direct participation in decision-making and collective action is precisely where a truly mis-competent creative practice is both most useful and most fully realised. I have defined mis-competence as "the ability to do something both deliberately wrongly, and well,"[15] and I have employed this attitude of willed and deeply learned ignorance to restructure my approaches to

performance, to the (mis-)use of technology and even to career planning. It is profoundly evident to me that in almost any circumstance, people who are held back from taking action because they allegedly 'don't know how' are doing themselves a grave dis-service. To use a slightly barbaric idiom, there is always another way to skin *any* given cat. Any "rough and rowdy" practice that encourages broader participation (albeit within a group that must remain small in order to escape recuperation by power) has the potential to enable and encourage autonomous collective action – and to release the consequent beneficial experiential impacts of 'just doing,' in a world dominated by the separation and passivity of commodity-spectacular conditions.

This approach, rejecting mere competence as a trap and a self-imposed handicap, also serves to raise improvisation to a defining principle of existence. In this way it aligns perfectly with a radical view of human freedom, one that sees the freely adopted position of 'audience subjectivity' as the foundation stone of social control – the surrender of autonomous agency starts at such a basic level that we are unable to readily critique it for what it truly is. It begins the first time that we accept the Other's assertion that "*you* can't do that." My considered reflection on my own creative practice – centred as it has been on "mis-competent improvisation with sound" is that it really has taken the form of an unintended training, analogous to the legendary learning ordeals of the Shaolin order, as depicted on the black-and-white television screen of my youth. I have done apparently impossible things simply by refusing to think of them as impossible.

The "rough and rowdy ways" in which this creative practice is realised have an additional cardinal virtue in the current time of post-industrial crisis, in which we are (too slowly!) coming to terms with the need to rethink our environmental footprint as a species. It enables "all things lost [to be] made good again" via a practice which aims to release "the immense forces of 'atmosphere' concealed in ... [outmoded] things."[16] This employment of obsolete machines, analogue tools, valve technologies, physical sound media and junkyard trash redeployed as sound-generating instruments are all universal strategies which signify the emerging cultural field in which I am engaged. And these 'upcycling' strategies have become more pertinent, more de rigueur, with every passing year.

The mis-competent employment of recycled technological supports is also directly implicated in the innovative impact of the work. This involves breaking free of established structures and ways of thinking and working; de-coupling the habitus from artistic forms and from supporting technologies. "It is," as Bourdieu put it, "always forgotten that the universe of products offered by each field of production tends in fact to limit the universe of the forms of experience."[17] My goal, and more broadly our mission as artists, is to expand that experiential universe without excessively consuming irreplaceable resources. And if we can also through our methods and practices inculcate a new form of consciousness, better adapted to the times, then more power to our arms.

I HAVE NO APOLOGIES TO MAKE

At this point I must reiterate that my argument and my intentions are avowedly utopian. To escape a dystopian reality will require utopian methods, utopian thinking and, finally, utopian people. Debord was at his most clear-eyed and also most innovative in his practical solution to the perennial Marxist dilemma regarding the appearance of a revolutionary consciousness (a requirement for revolutionary action) in advance of the appearance of the material preconditions for revolutionary success. This was the fundamental question that animated Georg Lukács to write *History and Class Consciousness* in the aftermath of the failure of proletarian revolution to sweep Europe following the First World War. This quixotic piece of writing nearly earned him 'cancellation' courtesy of Stalin, but later proved influential in the development of modern sociology, as well as so-called Western Marxism. Lukács argued against materialist determinism, and said that revolutionary consciousness could advance "beyond what was immediately given,"[18] and that it was moreover the consciousness of a class which must be understood from the viewpoint of social totality (quite separate from the consciousness of any given individual) – in effect, another kind of 'constellation.'

Debord's response to this problem was both innovative and ruthlessly practical – to change the worldview of a small group of revolutionaries through the exploitation of their material circumstances. This is what was later termed by Kaufmann "the poetics of revolution,"[19] but which I would more directly characterise as his adoption of avant-garde art practice as a kind of 'psychic kung fu,' with the dive-bars of Paris as his monastery. In this he placed his faith in the power of direct action to promote ideas; ideas which, when their Benjaminian 'origin' catches up with them, will be found to be "in everybody's mind."

Our challenge, in the current century of environmental and social crisis, is to find ways to carry on this little-understood work – because it is clear that established ways of thinking, and the economic sub-structures that underpin them, are equally unsuited to the situation in which, as a species, we find ourselves. The ongoing discountenancing of Debord's work (in the Anglo-sphere at least) tends to support my suspicion that it is central to any hopes we may have of success. My hard-won insights from a career spent largely on the fringes of art and music may be without evidentially persuasive value, yet I still firmly maintain the importance of advancing them. As Paul Feyerabend memorably (if counter-inductively) argued in connection with the history of science, knowledge is not advanced incrementally, by building directly on the received ideas of yesterday. On the contrary, knowledge really progresses in paradigm shifts that advance hypotheses often based on totally 'wrong thinking,' which usually explain reality less plausibly or completely than the established wisdom, even when the latter is (as is often the case) utterly false:

> there is only one [epistemological] principle that can be defended under all circumstance and in all stage of human development. It is the principle: ***anything goes***.[20]

Today's 'wrong thinking' is tomorrow's Unified Field Theory; and for that reason we need multiple bodies of knowledge, a multitude of apparently irreconcilable hypotheses and the equivalent of a multiverse of competing (even conflicting) plans of action. Because we cannot afford to fail by betting everything on one of them.

I CONTAIN MULTITUDES

In challenging times, creative practice (or 'art') can help us find tiny spaces for autonomous activity. And improvisational mis-competence can help us to leverage from those opportunities. This practice must be enacted socially and collectively in the spirit of International Lettrist freedom, which paradoxically can be mistaken for idleness.[21] To once again quote Paul Feyerabend:

> We must expect … that the **idea** of liberty could be made clear only by means of the very same actions, which were supposed to **create** liberty[22].

Taking place around emerging practices in the field of restricted production,[23] such activity does not have to be itself a mass movement, because it can be the seed that might just "contain multitudes" through the creation of a new and potentially contagious revolutionary psychology that will turn out to be already "in everybody's mind."

In a world where "everything's flowing all at the same time," every kind of thinking needs to focus on the starkly intractable problems in front of us. My psychic art practice kung fu prescription may prove to be a work of imagination, but as Debord was rightly fond of pointing out, "There is rebellion in *imagining* that one could rebel."[24]

Bruce Russell is an improvising sound artist from Aotearoa New Zealand, who since 1987 has been a member of the Dead C. This genre-dissolving New Zealand trio mixes rock, electro-acoustics and noise. He has also been active as a solo artist, and alongside the polymathic arts laureate Alastair Galbraith in A Handful of Dust.

Bruce has also directed two independent labels, Xpressway and Corpus Hermeticum, and written essays and criticism for *The Wire*, *Bulltongue Review*, artists' catalogues and other publications. In 2010 he published *Left-handed Blows: Writing on Sound 1993-2009* (Clouds) and in 2012 edited *Erewhon Calling: Experimental Sound in New Zealand* (Audio Foundation/cmr). He has a doctorate in sound from the RMIT School of Art and is currently writing a book about the death of rock'n'roll and the poetics of sound.

Bruce Russell coordinates creative research and postgraduate teaching in creative practice at Ara Institute of Canterbury and is an adjunct associate professor in art and music at the University of Canterbury.

1. Bob Dylan, "I Contain Multitudes," *Rough and Rowdy Ways* (Columbia Records, 2020).

2. G Debord, *Comments on the Society of the Spectacle* (London: Verso, 1998), 9.

3. K Knabb, ed., *Situationist International Anthology* (Berkeley, CA: Bureau of Public Secrets, 2006), 275.

4. M Fisher, *Capitalist Realism: Is There no Alternative?* (Winchester, UK: Zero Books, 2009).

5. R Williams, *Culture and Materialism: Selected Essays* (London: Verso, 2005), 45-6.

6. P Bourdieu, *The Field of Cultural Production* (New York, NY: Columbia University Press, 1993).

7. G Debord, *Panegyric: Volumes 1 & 2* (London: Verso, 2004), 22-3.

8. G Peters, *The Philosophy of Improvisation* (Chicago, IL: University of Chicago Press, 2009), 44.

9. V Kaufmann, *Guy Debord: Revolution in the Service of Poetry* (Minneapolis, MN: University of Minnesota Press, 2006), 165-78.

10. See W Benjamin, "Hashish in Marseille" and *The Arcades Project*. Chtcheglov is best known for his 1953 text *Formulary for a New Urbanism*, later taken as one of the constitutional documents of the Situationist International.

11. W Benjamin, *The Origins of German Tragic Drama* (London: Verso, 1998), 46.

12. Knabb, *Situationist International Anthology*, 194.

13. Bourdieu, *Field of Cultural Production*, 39.

14. Knabb, *Situationist International Anthology*, 75.

15. B Russell, *Left-handed Blows: Writing on Sound 1993-2009* (Auckland: Clouds, 2009), 105.

16. W Benjamin, *Reflections: Essays, Aphorisms, Autobiographical Writings* (New York, NY: Schocken, 2007), 182.

17. P Bourdieu, *Distinction: A Social Critique of the Judgement of Taste* (Cambridge, MA: Harvard University Press, 1987), 230.

18. G Lukács, *History and Class Consciousness* (London: Merlin Press, 1971), 72.

19. Kaufmann, *Guy Debord*, esp. ch. 2, "An Art Without Works."

20. P Feyerabend, *Against Method: Outline of an Anarchistic Theory of Knowledge* (London: NLB, 1975). The first chapter is a marvellously pithy statement of his fundamental premise.

21. G Marcus, *Lipstick Traces: A Secret History of the Twentieth Century* (London: Secker and Warburg, 1990), 182.

22. Feyerabend, *Against Method*, 26.

23. Bourdieu, *Field of Cultural Production*.

24. Debord, *Panegyric*, 23.

MAGGIE BUXTON

PORTALS, PARALLEL REALITIES AND TRANSDISCIPLINARY PLACE PRACTICE

I open portals to parallel universes and facilitate alternative realities. Bold words.

Perhaps.

But as you will see a little later, it's true.

This article is a portal to my place-based, transdisciplinary practice. In the first section, I argue that adopting a transdisciplinary stance, as I define it, is one way to find solutions to today's complex issues. Later, I provide examples of my practice, interweaving emerging technology, community development and creativity to support the spirit and spirits of place. Throughout this article, I take a personal, reflective and autoethnographic approach.

THE COMPLEXITY OF PLACE NEEDS A COMPLEXITY OF APPROACH

The notion of place is complex. In most societies on Earth, humans interact in multiple locations (virtual and physical) at once. Routinely, people come together but don't engage with each other. Instead, each person is tethered to a mobile device and to the people and places to which that device serves as a portal.[1] Places today also face complex challenges: climate change, economic disparity, biodiversity loss and pandemics. Issues where it is difficult to fully grasp what is happening, let alone discover solutions.

In this context, I agree with Somerville, who argues that disciplinary and subject areas must be bridged to deal with the difficult and complex issues facing spaces and places.[2] She theorises that specific places are contact zones that "offer a material and metaphysical in-between space for the intersection of multiple and contested stories. This characteristic of place … is especially significant in the relationship between indigenous, and other subjugated knowledges, and Western academic thought."[3]

Malpas believes that place is where temporality, subjectivity and objectivity, self and other come together.[4] I resonate with this and Stedman's argument that understanding the true complexity of place is a multidisciplinary exercise because place is a multidimensional concept that depends on meanings, which are based on experiences – and sense-making experiences vary from person to person.[5]

These views reflect my experiences engaging in colonised places where differing spiritual, cultural, historical, social and political realities converge. Sometimes I've found that the only thing that can be agreed upon is a love for the earth under people's feet.

My own practice is focused on supporting the spirit and spirits of place. Through my production company AwhiWorld, I generate pop-up community-based innovation labs and produce immersive and interactive installations using emerging technology to generate parallel realities in deactivated areas – often using mobile phones as portals to these other worlds (via augmented reality technology). My work is often simultaneously a spiritual and creative practice, a community capacity-building programme, a technological prototyping exercise, and also usually a form of economic and political intervention.

I aim to build individual, community and regional capacity to innovate on issues that matter by creating parallel realities of hope and possibility – moving past mindsets that are less useful. My passion is helping people connect to each other and the earth by sharing content innovatively while generating a sense of belonging, love and kindness for the planet. All of this work involves taking a multidimensional approach to understanding place and space – including building relationships with the spirit and spirits of a place as core stakeholders in the process.

PLACING MYSELF

As a small child, I always *knew* that what I saw with my eyes was sometimes at odds with what I knew through other, less easily defined senses.

As I travelled up through the school system, I learned that it was best not to speak to others about my way of knowing. As the child of new migrants living in rural New Zealand in the 1970s, it was hard enough to fit in as it was.

But as time passed, I realised that fitting in came at a cost. I never felt as if I was a whole person, and I became anxious from the strain of fitting into other people's realities. I started my career in personal and organisational development and then moved to systemic consulting with larger communities and more complex issues. Working globally with various ethnic, geographic and institutional cultures eventually taught me that maintaining strict organisational, disciplinary and cultural boundaries generated and perpetuated nearly all the problems that I and my colleagues were hired to solve.

In the mid 2000s, I collaborated with the transdisciplinary collective Fo.am Brussels.[6] This opened up a world of multi-hyphenate humanity: scientist-artist-activist; business consultant-poet-technologist; psychotherapist-conceptual artist. During that time, I realised that I needed to stop trying to fit inside other people's boxes and fundamentally change how I worked in the world. So, I embraced being a transdisciplinary practitioner and started my PhD.

With one finger raised to the institution (yet always intensely studious), I danced across disciplines like they were minor bumps in the field, not 10-foot-high border fences. First, I blurred the lines between computer science and human geography, then integrated anthropology, education, indigenous studies and philosophy. I lived dangerously by invoking tricksters, asking them nicely to form the base of a manifesto of place practice. This transdisciplinary way of being existed to support the spirit (and spirits) of place by opening portals to parallel worlds using augmented reality mobile. I passed my viva with no amendments, and while my supervisors may never be the same, I didn't look back.

MULTIDIMENSIONALITY AND THE ACADEMY

Except for my PhD, most of my creative practice has occurred outside the confines of academia. Much of my work has involved working at flaxroots level with mana whenua in Aotearoa (and indigenous peoples in other nations). Although my practice exists in a parallel knowledge system and culture, I feel a sense of ontological resonance with these groups that I do not find working in traditional academic settings.

Like me, Shahjahan considers the knowledge generated within academia as ontologically colonising and anthropocentric. In this reality, non-humans and other beings are subordinate or non-existent. He notes that dominant scientific theories do not accept arguments involving "people's spiritual relationships to the universe, to the landscape, rocks, rivers, mountains and other things, seen and unseen."[7] He also puts forward the idea of a multidimensional gaze that engages at different levels of consciousness to avoid two-dimensional thinking and mainstream triangulation.[8]

My perspective is similar to Zajonc's, who sees higher education's view of the world as partial and attempts to solve complex issues with only partial truth as problematic. For him (and I agree), "a diminished ontology is a powerful distorting lens that obscures the true multidimensional reality of our world, hiding the full scope of our humanity and the deeper complexity of our world."[9] He sees real solutions (i.e., adequate to solving personal, societal and environmental problems) "only arising from an expanded ontology that embraces the richness of the universe."[10]

MULTI- VS TRANSDISCIPLINARY

The terms multidisciplinary and interdisciplinary are often interchangeable when writing about the study of place, but I see clear differences and have worked on many different projects which span these definitions. Multidisciplinary projects bring together people from different disciplines to study and engage with one concept, topic or issue – but, usually, participants keep within the boundaries of their respective disciplines.[11]

In contrast, interdisciplinary approaches involve cross-boundary synthesis, expanding disciplinary knowledge and transferring knowledge from one discipline to another.[12] Klein sees interdisciplinary research on a spectrum ranging from building bridges between disciplines to forming new disciplines.[13] Often it is a process where researchers meet and exchange knowledge from within their respective disciplinary practices and/or situations, where "the analytical frames of more than one discipline are employed by the researcher."[14]

Like Petts et al., I describe transdisciplinary approaches as pushing beyond disciplinary boundaries, becoming something more than the sum of individual disciplinary parts.[15] According to Nicolescu, transdisciplinarity operates "between the disciplines, across the different disciplines, and beyond all disciplines."[16] Nicolescu is one of the few transdisciplinary theorists who openly discusses and promotes trans-religious and trans-cultural practices. For him, a transdisciplinary approach has a spiritual dimension.[17]

In my 30-year career, I began by developing people, organisations and places, assisting them to step through metaphoric portals (of mindset particularly) into alternative realities they envisioned for themselves. I did this in an interdisciplinary fashion (or within multidisciplinary teams), using techniques and tools drawn from psychology, sociology, progressive education, and participatory organisational and community development. Now, I engage in a transdisciplinary practice, often using the portal offered by mobile devices and computers to generate parallel worlds of possibility.

My version of transdisciplinarity is best described as multidimensional. I operate at the community level, practising outside academia, unconfined by disciplinary or faculty boundaries. I engage with theories of economics, aesthetics, theology and education and collaborate directly with beings and energies of the land, often using leading-edge technology. I do this without diminishing these entities by describing them as cultural constructions or narratives, or extracting them from my practice entirely by referring to my work in purely disciplinary terms (e.g., art, community development, transformative education). I have a progressive understanding of the spirit of place, where signals and code are as much part of local ecologies as freshwater insects, mycelium, disenfranchised youth, the spirit of a tree and corporate brands.

Places are wonderous sites, filled with magic, myth, dirt and dereliction. I envision an inclusive spirit of place that embraces ontologies where sites are alive with sentient, multidimensional energies and beings which co-exist with signals, codes and artificial intelligences. In my transdisciplinary projects, the spirit of place is encountered and supported spiritually and technologically. This understanding of the spirit of place leads to an emerging place practice that is political, social and spiritual. And inherently personal.

PROJECT EXAMPLES

So here are some examples of my projects.

The first, "Place" (2013),[18] was a case study for my PhD. It involved a significant amount of research and practice on one particular site: Te Kōiwi Park in Papakura. The site was a wahi tapu (sacred) site with substantial cultural history and mana attached to it. With the support of mana whenua and a neighbouring

Figure 1. Still image from "Place" exhibition showing mixed visuals. Photograph: Maggie Buxton.

marae, I set out to know the place in as many ways as possible. I undertook archival research at several research centres and oral history interviews with local residents and significant figures associated with the site. In addition, I was supported by various departments within AUT to study the soil, micro-organisms, and even my own brain-wave patterns, as I connected with the site. Psychics walked with me while they channelled spirits, drone pilots worked with me to map the location visually, and I also engaged in significant photography, sound and videography processes.

Once most of the data was collected, I live-mixed the material using a visual mixing (VJ) programme on the site, editing it into seven small videos of multi-layered material gathered from seven points around the area. This material was then geo-located back onto the site and could be retrieved using a mobile phone application. It was also available via a monitor at a local gallery.

Many of those who participated gathered together at the exhibition launch. A discussion was then had between the knowledge systems represented by those individuals – cultural, scientific, personal history, and so on. It was a fascinating experience engaging with the many histories and memories that intersected the site. It remains a favourite project, as the end result formed a bridge between my PhD and the practice I have now, and my connection to the spirits of that site felt deeply fulfilling.

"Place Stories Matariki" (2015) [19] was a geo-locative, augmented reality sound experience supporting economic development, diversity, digital literacy and the spirit of places and spaces in Papakura in South Auckland. Thanks to a Creative New Zealand grant, I commissioned site-specific sound works by local Māori poets, mana whenua, experimental audio artists, feminist punk collectives, Tokelauan songstresses and korowai weavers.

Figure 2. "Place Stories Matariki" gallery experience.
Photograph: Maggie Buxton.

These songs, poems and sound creations were matched to specific locations around the town chosen by the artists or matched by myself. A bespoke geo-locative mobile app allowed sound works to be placed at particular GPS points around the town, accessed via a digital way-finding system. Audience members downloaded the app, put on headphones and followed the live map until they could hear distant sounds. Then, by positioning themselves visually and by ear, they would find themselves in the middle of seven immersive sound portals, re-experiencing an alleyway, derelict building or downtrodden back corner with new ears and eyes.

Augmented reality functionality meant that the sounds visually floated in space and could be found in the distance in three dimensions or via a classic two-dimensional town map. In addition, a companion exhibition in a local gallery allowed those without a higher spec device to experience the sounds. Augmented reality visual triggers acted as portals to play various sound contributions as the tethered device was held over each in turn.

The platform was, first and foremost, an artistic response to the theme of Matariki: connecting people to the stars through signal and code. It was also designed to promote a greater degree of awareness of the diversity within the town, connecting people across diverse cultures and genres. And the work was a form of economic promotion of Papakura as a place of innovation and high-quality creative and cultural work.

I loved this project, as it used my different skills across several disciplines and brought disparate participants together within the platform. I also enjoyed the public promotion of the inherent spiritual quality of the work, changing the energy of those sites through attention and appreciation and the lovingly created vibrations of the sound works themselves.

In another augmented reality project, "Awhi Creatures Papakura"[20] (2015), I worked with my partner, new media artist Kim Newall, to create the app and facilitate workshops with local youth. Magical creatures were placed, using augmented reality visual triggers, in and around Papakura township. They were discovered by solving clues in an extensive treasure hunt that 'showed off' some of the town's unique (or unsung) places.

This project, a partnership with the local business association, highlighted the range of businesses in Papakura and encouraged people to travel to the community from other suburbs and view the town with new eyes. In addition, the work supported digital literacy with those who downloaded the app and engaged with the creatures via workshops. The treasure hunt supported historical education (in collaboration with the local museum) and encouraged

Figure 3. "Awhi Creatures Papakura." Image of creature scouting for food, taken via augmented reality app. Photograph: Maggie Buxton.

people to work together to answer clues and discover where the creatures were lurking. Finally, the beings themselves found ways to inhabit the most unloved of locations, bringing positive energy and kindness to sites that needed it (via graffiti and rubbish cleanup during the hunt). Several strange synchronicities occurred during this project, making it feel at times that the creatures were managing the work instead of us.

Other augmented reality projects have involved rest-home residents, who incorporated their creative crafts[21] and primary school students,[22] who created magical walks to share the unique places of their playground with new children and their families. But it isn't all about creating parallel realities via the portal of mobile apps.

"AwhiTower"[23] (2018) was located in a derelict 100-year-old water tower at the Nathan Homestead in Manurewa, South Auckland. The century-old tower had fallen into disrepair and needed love and attention. Working in collaboration with council staff, we attended to the physical, social and spiritual aspects of the location to bring it back to life.

The area around the tower was cleared, and a bright new path was created to the structure. AwhiWorld then turned the historic building into an interdimensional sound-transmitting device, triggered by the audience moving through the surrounding bush.

Using audio 'exciters' (an emerging technology that allows surfaces and objects to project sound), the tower came alive with whispered sounds gathered from the local community, woven together with images from the site (current and historical) that were manipulated into audio. As a result, the tower became a conduit connecting different parts of the Manurewa community, embracing, transmitting and amplifying love as the site's spirit regenerated.

Figures 4 -7 above and next page: PlantLab 22 Te Tai Tokerau | Northland installation/creative innovation lab. Photographs: Maggie Buxton.
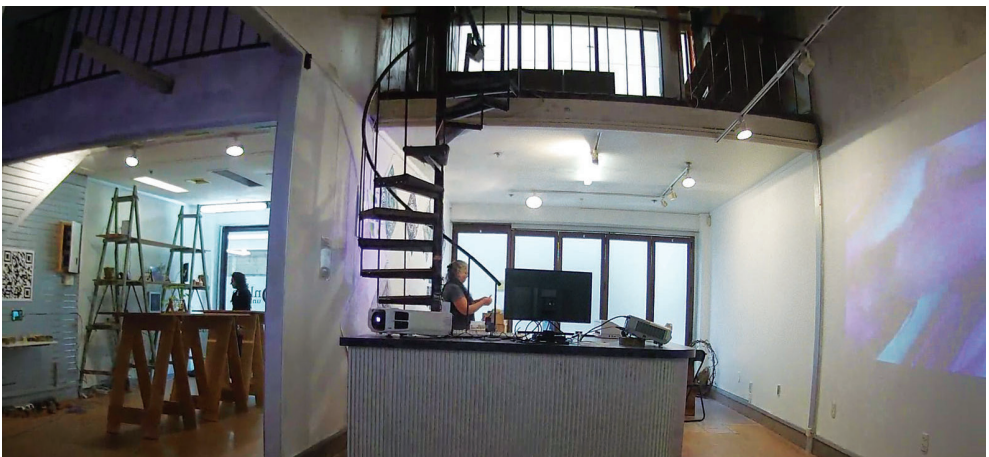
"PlantLab 22: Te Tai Tokerau"[24] (2022) was a different example of a transdisciplinary project. One of several pop-up labs I have initiated and facilitated in Whangarei's CBD, it was part innovation lab, part pop-up installation, part independent research hub and part post-COVID CBD regeneration.

PlantLab involved a cohort of cross-disciplinary practitioners collaborating to build their respective practices while working on solutions to intractable issues (like climate change). All those involved had rich identities (e.g., scientist-artists, poets, creative technologists). Forms of research included traditional scientific and creative experiments, poetry, ceramics, creative tech hacking, meditation, videography and sketching – among many others.

The nine-month project began with workshops, meetings and a symposium (conducted virtually to support COVID-19 isolation and geographic dispersion). The project then took a physical form in an empty retail shop in an arcade within the Whangarei CBD. The location was filled with resident practitioners and daily guests working together on a wide range of projects, most of which were open to participation by the public. These included turning plant memories into soap and then into glitch art; visualising proteins via projection and 3D printing; prototyping plant sensors; creating short-form narrative, poetry and a divination system via randomised sampling; and performing vegetables and pot plants using technology that converts signal into sound.

During PlantLab the former retail space was activated for the first time in several years. One of the members was placed into employment, others generated ideas for future works and businesses, and all developed skills, knowledge and wider networks as a result. The project, therefore, had some longer-term economic and creative outcomes, and the space continues to be occupied by our organisation until a permanent leaseholder can be found.

REFLECTION ON PRACTICE

All of these projects (and many others) have some commonalities. They usually have diverse stakeholders and aim to generate many positive outcomes. At the very least, the project sites have arguably been left in a more positive state than when the project began (physically, atmospherically and economically via leasing or foot traffic).

In nearly all cases, some form of digital creative technology is used as a tool within a spiritual approach that positions the spirit and spirits of place as the central focus of the work. In addition, the related concepts of portals and parallel universes are always significant themes – either metaphorical (in background project planning) or, more centrally, as promoted content for the project. For example, in Awhi Creatures the bugs are described as arriving via a portal to generate new possibilities. In Awhi Tower, the structure is a portal that connects its location with a slightly more distant township and amplifies loving energy to heal the land through sound.

FINAL NOTE

In a world where signals, code and data are embedded into the fabric of society, it's challenging to declare firm boundaries around the concepts of discipline, reality, truth, being and the notion of *place*. Places are complex, as are the issues surrounding them and the solutions needed to support them going forward.

In this context, I have argued for working in place inclusively and provided examples from my self-identified, transdisciplinary practice. All of my projects facilitate different ways of thinking and being in the specific areas where they are centred.

My practice is one way of addressing some of the challenges places face. Of course, there are many others. But for me, the complex multidimensional nature of places means that new ways of working are needed – particularly ways that engage with stakeholders that are not human, and relevant in an age of rapidly changing technologies. For me, it's about opening portals to a parallel reality, a new point of view. Resetting how people feel and engage with places, their home, their region and the planet itself. I believe that only by changing the way people look at the world will innovative solutions emerge to solve some of the complex challenges facing our world today.

Maggie Buxton is a transdisciplinary practitioner, educator, writer and consultant with an extensive track record in place-based interarts practice and particular expertise (including a PhD) focused on emerging technologies and the spirit of place. For detailed information, see www.maggiebuxton.com or her creative innovation company site, https://awhiworld.com/.

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JOE CITIZEN

NAVIGATING KNOWLEDGE FRAMEWORKS AT THE INTERCULTURAL INTERFACE

As we emerge not altogether unscathed in 2022 into what optimistically might be called a post-pandemic world, we are confronted by the pressing need to address global and climate instabilities against a general backdrop of complexity. Potential solutions must be balanced against environmental and societal concerns that cannot take for granted that any system is somehow isolated. Here then is the crux of new materialist and post-humanist approaches – a shift "away from Kant"[1] and away it seems, from humancentric understandings of who, or what, has agency in the world.

Despite acknowledging the agencies of non-human others, such as electrical grids[2] and quantum entanglement,[3] or proposing new speculative realist frameworks by which to engage with such agentic capacities,[4] finding workable solutions within such dynamics remains stubbornly difficult. What does become clear, at least, is that these Eurocentric traditions, arising from the European Enlightenment project, have not served the environment particularly well. Newtonian physics can no longer claim mastery over the tangible world through recourse to universal laws acting in isolation, and liberal humanism is revealed to be underpinned by Eurocentric cultural traditions of human exceptionalism and the rights of the individual exceeding the rights of the collective. As I have argued elsewhere,[5] such traditions within the European imaginary arise from Judeo-Christian notions of dominion over the nonhuman and are reinforced by successive bifurcations between nature and culture through Plato/Aristotle-Descartes-Kant metaphysical trajectories.

What is surprising about new materialist and post-humanist approaches is their curious resistance to Indigenous Knowledge frameworks that pre-exist such concerns by the Western academy. In Aotearoa New Zealand, however, there has recently been an increasing awareness that "mainstream science has a lot to learn from indigenous science,"[6] despite colonial legacies that presume a cultural superiority grounded in the knowledge frameworks of the European Enlightenment. Foremost amongst these legacies is a dependence on Kantian sensible concepts to valorise objective truth, itself reliant on a humancentric Cartesian bifurcation between nature and culture. Examples of these cultural shifts towards a more Māoricentric understanding of what the universe is and how it operates can be seen emerging within the once monolithic domains of

Health, Education and Law. Such changes are both well overdue but not without challenge, not the least of which because the tenets of liberal humanism and scientific rationalism have been taken to be self-evident by their existing powerholders. As Alison Jones puts it, a "science based on 'the knowability of things'" problematises Pākehā learners' ability to engage with "non-Western knowledge" because of a universalist epistemological framework that assumes "the teleological fantasy of Western education as a linear increase in knowledge."[7]

An example of this contestation within wider scientific discourse can be illustrated through a recent letter to the editor to the popular magazine *The Listener*. Signed by a dozen leading professors from the University of Auckland, it argues that Mātauranga Māori cannot itself be recognised as being the same as science. Here then is a backlash against Māori knowledge frameworks that emphasise relationality and interconnectedness, for their argument seems curiously tautological and embarrassingly lacking in self-reflection: if only "the discovery of empirical, universal truths"[8] can be recognised as science, then those Māori frameworks that do not conform to this pre-existing condition cannot be recognised as such.

Eurocentric framings of science such as this tend to be underpinned by deterministic and reductionist understandings of phenomena grounded in material realism. Constituted by conjoined claims that materiality is the sole basis of universal reality, non-influential observations of isolable entities are reduced into supposedly indexical abstractions and subject to internally consistent logical relations to reveal otherwise hidden foundational truths. Nested inside these commitments is a Western predisposition to frame divergence from this supposedly self-evidential framework in dualist terms: material tangibility is positioned against cultural intangibility, whereby ideas and beliefs are somehow held to be without material form, and spirituality is, by extension, a form of belief *that has no basis in materiality*. These tendencies can be traced to the European Enlightenment project's own struggles between rationalism and idealism – a binary that positioned spirituality as external and intangible (e.g., God) and rationalism as internal and intangible – humans alone in the universe are capable of rational thought and are therefore (after Descartes) capable of deducting truth from the deceptions of our senses. The subtext of those scientific communities that oppose the validity of Mātauranga Māori is that it has been tainted by spirituality, with the result that claims about non-humans having agency are dismissed as mere belief.

What such a lack of self-reflexivity by those working in scientific fields unfortunately renders invisible is that which hides in plain sight: Mātauranga Māori has much to offer Western understandings of relational emergence within unfolding phenomena. Part of the difficulty for Western thinkers to escape human exceptionalism is its attendant privileging of the centrality of human agency. When the agencies of non-human others are not only acknowledged but foregrounded, then how humans behave must always be considered within the ongoing field of relations – not from a sense of obligation, but by the realisation that they are not always in control. Such a realisation requires acknowledging that which is unknowable, which presents a fundamental rapprochement with Kant's "things in themselves," considered by him to be unknowable: "We can accordingly speak of space, extended beings, and so on, only from the human standpoint."[9] Kant's transcendentalist claims of a priori knowledge (knowledge before experience) relies both on the Cartesian bifurcation that separates representations from sensations, and on an insistence that the only way human beings can understand reality is through time and space:

> So if I separate from the representation of a body that which the understanding thinks about it, such as substance, force, divisibility, as well as that which belongs to sensation, such as impenetrability, hardness, colour, etc., something from this empirical intuition is still left for me, namely extension and form. These belong to the pure intuition, which occurs a priori, even without an actual object of the senses or sensation, as a mere form of sensibility in the mind.[10]

Kant's "pure intuitions" about time and space are therefore grounded in the measurable, which he understood as being both foundational and universal, or as Peter Gratton neatly summarises: "there are some universal forms of the subjective knowledge of things that transcend and make such experiences possible."[11] Such a claim, however, is a cultural one, for while extension and form can be subject to logical relations in order to derive numerically consistent truths, it cannot be assumed that knowledge of time and space (subjective or otherwise) can in any way be considered universal or even scientifically consistent. Newtonian physics, for example, is internally logically consistent, but its reductionist foundations are not just problematised, but completely superseded by the dynamic relationality of the quantum discontinuity.[12] Similarly, Mātauranga Māori emphasises relationality rather than causality, interconnectedness rather than reductionist and atomistic entities, and a nested epochal understanding of time,[13] rather than a sequentially temporal one.

As a Pākehā creative arts practice-led researcher collaborating with a rōpū (group) wanting to add to what is already known about Ngā Maramataka (turning of the moon/ lunar–stellar frameworks of knowledge), it is often difficult to remember my own cultural predispositions towards reductionism, causality, humancentricity and the assumption that logical data relations correspond with things in-themselves. To reverse a popular catechism: causality is not correlation. This is not to claim that causality does not exist, but that causality as understood as the reduction of entities acting in isolation cannot by themselves explain the complexity of continuously emerging phenomena. When human agency is not privileged within the field of relations and the agencies of non-humans are acknowledged in a co-relational manner, then understanding continuously emerging phenomena becomes both more ecocentric and location-aware. Caution must be exercised at the intercultural interface, however: Mātauranga Māori is its own knowledge framework and it cannot be taken for granted that Māori concepts will readily cross over and integrate into traditions that assume the knowability of universal truths.

In Pākehā colonial traditions, Ngā Maramataka have historically been criticised for their lack of consistency across different regions and hapū. But, as Wiremu Tāwhai puts it, such knowledge is location-specific:

> The Raukumara forests, the rivers, the sea and the lands of the fertile coastal strip have sustained the people of the tribe with rich resources for the centuries they have lived here. Close and intimate dependence on the environment have provided their scientists with centuries of opportunities to diligently study, examine and evolve specific bodies of knowledge to ensure their survival here. This research is about the lunar month of Te Whānau-ā-Apanui, one aspect of the people's total knowledge base of their territory.[14]

Understanding location specificity is to acknowledge that climate, ecologies, behaviours and all the ebbs and flows of seasonality exist as its own situation, and have their "own little ocean of complexity."[15] What is true for one rohe (territory/boundaries) may not work for another, because

the co-relating conditions are different: it cannot be assumed that a knowledge framework from a coastal region on the east of the North Island has equivalency with knowledge frameworks from centrally located volcanic basins or South Island braided rivers. Neither can it be assumed that there are not connections either, through whakapapa (relationships of descent) or otherwise, for among different maramataka there are similar names for the same nights, or the preferred times for planting and weeding are similar. Causality here is not discarded, but understood in a non-reductive manner, always in relation to what else is also going on.

Observation of emerging phenomena is therefore relational and, as previously stated, it is not always possible to seek equivalency across diverse cultural knowledge frameworks. The preoccupations of data-driven science do not necessarily sit well with Tātai Arorangi (astronomical knowledge), for while predicting appearance events or trajectories across the sky have importance, the data itself is less important than understanding the relative importance of ngā tohu o te taiao (signs of the natural environment). For example, Ngāi Tūhoe scholar Rangi Matāmua describes how the appearance of Matariki (Pleiades cluster) above the horizon at the start of the year is observed in relation to other environmental conditions: "Each of the nine individual stars would be assessed, and mental notes would be made of their brightness, distinctiveness, colour and distance from the surrounding stars. Likewise, the movement, colour, and shape of the entire cluster would be noted."[16]

Engaging with Ngā Maramataka in a non-reductive way means to engage with knowledge frameworks that acknowledge the interwoven relationships between tuia ki te rangi, tuia ki te whenua and tuia ki te moana (strands/threads of the sky, land and ocean). According to maramataka tohunga Rereata Makiha, these three strands relate to the three ngahuru (10-night phases) of the maramataka,[17] which in turn co-relate to a host of other seasonal and environmental indicators. The relationships between strands are not abstract measurements or symbolic representations such as those found in Eurocentric divisions of time, but must be considered both dynamic and relational or, as Reverend Māori Marsden of Te Tai Tokerau (2003) says, it is "continuous creation and [...] a dynamic universe [...]. The universe is not static but a stream of processes and events."[18]

If understanding the complexity of interwoven relationships between living and non-living entities is already integral to Māori worldviews that recognise Te Taiao (the natural world), Western science has been slower to recognise their importance. To an extent the control fantasies of Newtonian physics have been hard to relinquish, but the recognition of relational emergence within nanoscience and quantum mechanics is no longer rocket science: "while classical physics tells us about a simple universe made up of point masses moving along trajectories, it is only through an understanding of the *relational structure* of the materials around us that we can account for our experience of a dynamic and multiform universe."[19]

Because the knowledge frameworks of te ao Māori and te ao Pākehā have differences, working on a shared endeavour together means continuously making effort to understand each other's associated paradigmatic predispositions. For example, when data science and Mātauranga Māori meet, the prediction of empirically measurable instances is not necessarily a goal, nor can it be assumed as a methodological necessity. The varying number of nights found within Ngā Maramataka does not readily reconcile with a sun-based Gregorian calendar, and calculations must also consider when to start counting in relation to a preceding moon rather than an arbitrary number of days within a 12-month cycle. The capacity of numbers to symbolically chart time and space

and conform to logically consistent operations does not also mean that the resulting data provides a good understanding of phenomena in the process of relational emergence. Partly this is because IT as a domain tends to be unaware of its own Eurocentric traditions of cognitivism, valuing calculation over the unpredictability of embodied knowledge: "The concept of knowledge as an abstractable, extractable thing is part of the *representational idiom*. Computing, which deals exclusively in symbols (representations), is the technology of representation par excellence. It may thus be fundamentally incompatible with cultural practices that engage with the *performative idiom*".[20]

In this Eurocentric tradition, computational logic can be considered as a cultural machine for producing replicable outcomes. It is perhaps more accurate to describe it as a type of logicity, which refers to the actuality of its cultural predispositions towards cognitivism rather than any absolute claim on truth. When engaging with Mātauranga Māori, for instance, measurable data such as that gained through environmental sensors or from scraping data from pre-existing websites cannot assume an automatic equivalency or, worse, any inherent superiority based on assertions of objectivity. As argued elsewhere, objectivity is a cultural claim that truth can be derived from human rationality alone, predicated by what Kant called commonly shared or "sensible" concepts, which in Eurocentric traditions refers to the supposed universality of how time and space can be understood through abstracted measurement.[21]

When working with IT professionals who are not aware of the importance of how live embodied knowledge is co-emergent and relational to events, it becomes necessary to emphasise that the purpose of an architecture and data platform should not necessarily presume that data-gathering or prediction is the primary goal. An example our rōpū is exploring is to use a live-stream approach to audio in relation to concurrent observations of maramataka phases and other tohu (indications/ signs). Data will only become stored as individual audio stems when experts and interested communities engage with the live stream through an application which simultaneously records their participation – e.g., through taonga pūoro. This strategy is an attempt to acknowledge all the other relational and co-emergent instances in the liveness of those continuous manifestations within the originary context, as well as providing additional re-presentational resources for future researchers interested in identifying individual presences and behaviours of actants in co-relation to the maramataka phase / season of that time.

This approach also attempts to address a more fundamental tension that IT professionals may not even be aware of – emphasising prediction as a goal has the potential to diminish the mana (authority/ power/ influence) of maramataka experts. Expertise, however, is not solely the ability to predict numerically consistent outcomes, but is the ability to contextually understand phenomena as it manifests in relation to the matter at hand. Furthermore, representational paradigms tend to situate expertise within hermeneutically sealed framings without acknowledging the agency or influence of the expert within ongoing situations. When their expertise relates to kaitiakitanga (guardianship/ stewardship) of the whenua (land/ domain), then prediction is far less important than what actions are necessary to ensure the best outcomes for te taiao (the natural world).

This paper has attempted to identify some of the presuppositions of Western metaphysics in order to help foster better outcomes for intercultural endeavours engaged with Mātauranga Māori. It has identified how both traditional Eurocentric science and new materialism /post-humanism can learn from Indigenous Knowledge frameworks if materiality and spirituality are approached in a non-dualistic manner that does not presume clear distinctions between tangibility and intangibility.

Acknowledging how Eurocentric traditions have taken as self-evident the validity of reductionism, atomistic causality, human-centricity and the assumption that logical data relations correspond with things in-themselves helps to foster recognition of how human agency is not privileged within the field of relations, but rather exists in a corelational manner. This in turn enables a better understanding of how Mātauranga Māori is location-specific, complex and interwoven with te taiao, and therefore has much to offer Western science in learning how to be more ecocentric rather than humancentric.

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My work is relevant to the fields of Māori–Pākehā relations, post-humanist and new materialist critique, aesthetics and contemporary digital theory. For further information, please contact me: Joe.Citizen@wintec.ac.nz

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PAM MCKINLAY

TRANSDISCIPLINARITY IN THE DUNEDIN ART+SCIENCE PROJECT

INTRODUCTION

In confronting the realities of the global climate crisis, it seems as if we are living in a narrow window of "useful consciousness."[1] Responding to and tackling the existential threat of the climate crisis requires transdisciplinary methodologies and cooperation. A series of multidiscipline art and science collaborations in Dunedin, New Zealand, focuses a lens on rapidly changing ecological and social effects as human activity encroaches on our planetary boundaries (Figure 1). Our approach allows for processing of the scientific data in bite-sized, digestible chunks and provides a means for storytelling through visual texts and narrative spaces – a methodology essential to connecting with community values and finding solutions to climate anxieties.

In 2013 staff, alumni and associates of the Dunedin School of Art and the University of Otago embarked on the inaugural Art+Science project.[2] The kaupapa[3] was to create interaction and dialogue between various knowledge bases and imagination practitioners by calling for artists to respond to the research, rather than 'illustrate' the science. The entwined histories
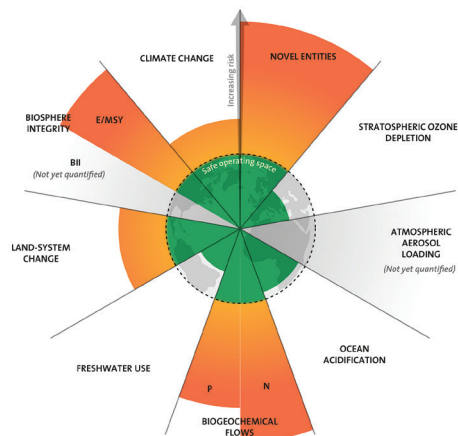

Figure 1. Diagram showing estimates of variables for seven of the nine planetary boundaries. The green shaded areas represent the safe operating space for human civilisation, while the outer reaches of the orange areas indicate overshoot and potential tipping points. For an introduction to the nine planetary boundaries, see Steffen et al., 2015.[4] Image source: Wikimedia Commons.

of conceptual and contemporary art, science communication and illustration, Art Science, SciArt and ecological art reflected in the Art+Science series demonstrates a multifaceted and emergent way of working. There is no one-size-fits-all approach.

Basarab Nicolescu, in *La transdisciplinarité: Manifeste* (1996), gives a brief outline of the various ways of being in and conducting collaborative projects, which include multidisciplinarity, interdisciplinarity and transdisciplinarity. Multidisciplinarity is an approach which enables research topics to be explored in several disciplines at the same time, but using the research frameworks of each discipline. With interdisciplinary research there is some trading of methodology between the disciplines. Transdisciplinarity shifts the goal posts, the boundaries and mixes up the players; it is "at once between the disciplines, across the different disciplines, and beyond all disciplines."[5] It is a more holistic approach, with a goal of understanding the world and finding a unity of knowledge. Nicolescu says: "A bridge can be built between science and ontology only by taking into account the totality of human knowledge. This requires a symbolic language, different from mathematical language and enriched by specific new notions."[6]

I found the goal of the imperative of the unity of knowledge a useful starting point to consider. Unity of knowledge is an open but entangled concept. According to Harold Schilling, "All knowledge comes through awareness and creation, observation and interpretation. It is both empirical and theoretical. One meaning of the unity of knowledge, then, is that, while its objective and subjective elements are sometimes distinguishable, they are always inseparable."[7]

Further on in *La transdisciplinarité*, Nicolescu sets out three axioms relating to the methodology of transdisciplinarity (ontological, logical and epistemological) and how they relate to his concept of the Levels of Reality:[8]

> Reality is not merely a social construction, the consensus of a collectivity, or some inter-subjective agreement. It also has a trans-subjective dimension: experimental data can ruin the most beautiful scientific theory. (Or to take a more pointed example, collective denial of climate change will not stop warming seas from rising.) … From a transdisciplinary point of view, complexity is a modern form of the very ancient principle of universal interdependence.[9]

Following the flow through these thoughts, I landed on Nicolescu's notion of transdisciplinarity, but wondered where the audience sits in this model. The curator's role adds a further disciplinary element, complexifying the scenario by targeting transdisciplinary knowledge towards wider audiences. This methodology builds depth with existing audiences and creates bridging opportunities with audiences outside the disciplines of the arts or sciences. The curator enhances the transdisciplinarity aspect and builds communities by inclusion of everyone, rather than just preaching to the choir.[10] Transdisciplinarity, then, is essential to any methodology utilised in collaborations including Art+Science in the context of climate change. It moves beyond the boundaries of multidisciplinarity, is multimodal in delivery and reception, and involves multiple levels of agency.

To illustrate this point, I offer a personal perspective on the multifarious nature of the Dunedin Art+Science project from my point of view as curator, and reflect on my curatorial practice that facilitates the transdisciplinary methodology in the context of art–science – a *practice of making* and a *practice of making available* to the public.

THE ART+SCIENCE PROJECT

The Dunedin-based project has attracted researchers from across the physical, biological and social sciences and from all studio disciplines in the arts, and has grown to become a respected and innovative project in New Zealand. Creative New Zealand recently commented that the project is compelling and rare in the artistic landscape of Aotearoa. "It brings together science and art and is one of the few in the country that successfully and actively works in this particular field … producing artistic outcomes of high quality with potential and capacity to tour to other venues."[11]

The multi-year project takes a single word as a theme or lens of discovery for each year's call for project. Past projects have explored themes relating to: *Anatomy* (2013), *Neuroscience* (2014), *Genetics* (2015), *Light* (2016), *Space* (2017), *Oceans* (2018) *Water* (2019), *Earth* (2020–2021) and *Air* (2022). The call for project invites participants to respond to a theme set in a wide context and scaling between the human and planetary, past, present and future, with views from the macro and micro worlds.

The projects have multiple outcomes. The "Art+Oceans" exhibition, for example, was the culminating art exhibition of the 2018 project, held at the HD Skinner Annex, Otago Museum, Dunedin, and later travelled to the Forrester Gallery in Ōamaru. Out of "Art+Oceans" came "Ōku Moana (My Oceans)," a satellite exhibition held during the New Zealand (International) Science Festival and Puaka Matariki Festival, at the Dunedin Community Gallery.[12] Further iterations of the exhibition were held at conferences and symposiums: Sustainable Seas National Science Challenge, Commonwealth Ocean Acidification Action Group workshops and "The Complete Entanglement of Everything" exhibition (2020), in association with the symposium Mapping the Anthropocene: Climate Change, Community and Research in the Creative Arts. A "Street Poster Exhibition" with Phantom Billboards was held in Christchurch and Dunedin and items were requested for display again at a later Otago Museum "Climate Change Pop-up" exhibition. Artworks have been woven into non-traditional events such as "Join the Dots" events in the Octagon, Dunedin, and at Techweek – along with electric vehicles, Suffrage 125 celebrations and talks – at the Dunedin Public Library.

ARTIST AS CURATOR

I am an artist and I am a curator. The terms "artist–curator" and "artist as curator" have been increasingly used since the 1950s in areas of collaborative practice and collective engagement.[13] The 1960s were significant for the rise of curators such as Lucy Lippard, who stands out for her vision of the curator as mediator and social facilitator and a practice that was characterised by ethical activism.[14] Lippard writes that the usefulness of art is to move people and to make an argument.[15] Claire Tancons is an example of the new curators active in the collaborative arena. Tancons describes her role as coming out of personal interest and life experience, followed by empirical research and experimentation. She says that her style of curation is more akin to directing theatre: "In any event, my work is always research-driven, context-specific and, to a large extent, collaborative, in various degrees, and at various stages in the process. I like to allow for a mix of rigour and nimbleness at the same time."[16]

Building on these ideas, I take the term 'curator' to imply a fluid process which involves a multifaceted approach to enabling and producing a project across a variety of platforms. These include but are not limited to the following: convening the participants from the various research

and studio disciplines around the theme; planning and strategic management of the project; curating the exhibition space; creative direction of publication; facilitating family-friendly public programmes; and mediating the exhibition experience for visitors during the exhibition run time by creating, nurturing and holding space during the exhibition. Although I have curatorial oversight of the project and exhibition, at the early proposals stage I ask various people for an independent perspective and advice on mātauranga Māori, and (later) regarding science communication and input on community engagement.

In *100 Atmospheres*, Lucas Ihlein and Ken Williams outline their ambiguous roles as artists in their multiple-paths approach to a socially engaged art practice. They provide examples of where they, as artists/facilitators, have created conversations between science, policy and community. Transdisciplinarity is foregrounded in this approach, where the result can be creating a community of interest around pressing site-specific issues.[17] In the past few years, the exhibition format of the traditional artist floor talk has been expanded to a wider interactive public programme which includes meet-the-scientist sessions, hands-on art activities, demonstrations and workshops. The public programme moves the exhibition from traditional passive viewing to a more interactive experience, acknowledging the third partner in the Art+Science project, which is Community. In Ihlein and Williams' triple Venn diagram, at the heart or intersection of Science, Art and Community are social engagement and socially engaged arts for all.

The artworks in the Art+Science exhibitions are curated to provide accessible narratives and are also the setting for performances, storytelling and alternative means of communication. The exhibition can be read as a linear story, with the accompaniment of the catalogue/wall panels, or as a call and response across the room between artworks, and between artworks and activities. The narrative space is a hybrid space which enables aesthetic encounters and sensory engagements between measurements in the data and social and community relationships – what we see and feel (culture and community).

Figure 2. Overlapping methodologies in socially engaged art.
See Ken Williams and Lucas Ihlein, "Two Places: Working and Walking with Waterways," in The Meco Network, *100 Atmospheres: Studies in Scale and Wonder* (London: Open Humanities Press, 2019), 345 (Figure 28).

Previously, in other articles, I have defined narrative space as a broad term, referred to in genres and settings as varied as novels and film (storytelling), theatre/drama and virtual reality (role-playing video games) and real-life environments (such as exhibitions and architecture). [18] Marie-Laure Ryan asks if, as Kant says, time and space are two of the fundamental categories that structure human experience, then narrative is how we communicate the story or sense of that experience.[19] It is a way of organising our experiences and making meaning. Is there actually such a thing as a non-narrative space? Since the Renaissance, narrative space in art has also provided a platform for what Lew Andrews calls "continuous narrative" in which several events can be shown in a single setting.[20] However, the story need not be a story in the traditional sense – a narrative space may be a space which is used to convey or explore a variety of themes and meanings, such as a time-scape in video games[21] or a three-dimensional landscape.

As a result of this complex interplay of elements, the public programme also includes a variety of activities. Visitors have the opportunity to contribute to co-created community artworks facilitated by an in-gallery artist. Interactive elements encourage further dialogue, collaboration and public engagement and the sharing of ideas and skills.

This approach draws on the philosophy set out in the New Zealand Early Childhood Education curriculum, the *Te Whāriki* framework. *Te Whāriki* is an emergent curriculum that provides a framework which is holistic in outlook and an approach for "learning to learn for life." *Te Whāriki* encompasses four founding principles interwoven with five strands: mana atua – wellbeing, mana tangata – contribution, mana whenua – belonging, mana reo – communication, mana aotūroa – exploration.[22]
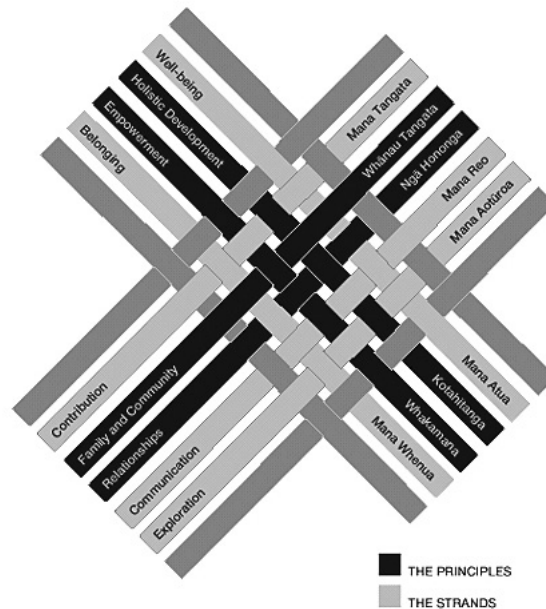
Figure 3. The name *Te Whāriki* is a word in te reo Māori meaning "woven mat" (see the diagram). It weaves the foundational principles, strands and goals together to represent the interrelatedness of these components of the New Zealand Early Childhood Education curriculum. The curriculum itself is provided by the people, places and things in the child's environment including adults, the other children, the physical environment and the resources available. *Te Whāriki* does not provide any guidelines for content or teaching methods. These are designed at a local level and reflect the diverse families, multiple communities, cultures and tribes that are represented in early childhood education in New Zealand.[23]

This framework offers ways whereby we can evaluate our own practice. The responses from the Art+Science exhibition audiences are evaluated through participants' own narratives –their recorded observations and artefacts created in the gallery. This is a mode of reflection and assessment borrowed from *Te Whāriki*. In this way, our records of dialogue, that include the responses of the participants themselves, can generate our data points.

The project also fosters relationships with local organisations. During the "Earth: Caught in Stone" exhibition, Waitaki Whitestone Geopark brought a little of their fossil world into the gallery as an activity, and in return we encouraged a visit to the Geopark. Similarly, Orokonui Ecosanctuary brought a little bit of the forest into the gallery, and we encouraged families to go and experience a day in the full forest on another occasion. In "The Sense of Wonder," Rachel Carson emphasised the importance of sharing and developing connections with the natural world with children: "If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow."[24] Carson advocated for a sense of (bio) curiosity in observation, drawing and participation as important tools towards understanding nature and re-establishing our ecological relationships.[25] We need to have empathy with the "more-than-human"[26] or, as Donna Haraway puts it, come to know that all creatures on Earth are kin.[27]

CURIOSITY AND IMAGINATION

In an article looking at brain-body imaging Madeleine Gorges et al reported a sense of alarm at how much a general audience might add their own interpretations to their understanding of the "science". From psychology we have learnt that we do not experience reality as it is. We experience reality as it seems, to *Us*. Our picture of reality emerges from an interaction between information arriving at the senses and *Our* expectations drawn from memory. In reverse in the arena of contemporary art we are seeking audience interpretation. What does *It* mean? Gorges and her colleagues suggest the ways that a sense of curiosity, creative thinking and desire to have a greater understanding and sharing of our understanding of the world bring artists and scientists together in collaborative projects.

> There are three main points in which artists and scientists might overlap in collaborative projects: the question, the process, and the product." [28]

However, the abstract symbols used to express scientific truths are sometimes too abstract for viewers from outside scientific disciplines, and we need to build a bridge back to the lived experience of the world through visuals and the telling of new and old stories. One of the world's great contemporary storytellers, Salman Rushdie, says that Man is the storytelling animal, the only creature on earth that tells itself stories to understand what kind of creature it is.[29]

During the exhibition, the curator brings the underlying ideas of the science to the fore so that the artworks give audiences a space to negotiate their implications at their own pace and from the bedrock of their own cultural background and experience. Art can evoke an emotional response – as in the climate-change artworks of Zaria Forman, who says, "Art moves us in a way that facts may not."[30] Alex Evans in *The Myth Gap* argues for the importance of the visual arts and storytelling. We do not learn by fact alone, he says. Facts suppose a flawed model of reasoning. We are not "brains on sticks," computing inputs by reason. Rather, Evans argues that we are narrative animals,

"framing and making sense of our lives through stories, both at individual and communal levels … We resonate emotionally before we process rationally."[31] In an interview with biologist Robert Sapolsky, Abbas Milani describes Sapolsky's writing as "the artform that defamiliarises reality, making us recognise the complexities of the things we thought we understood, and making simple the things we thought were complicated."[32] Often science presents reality as a graph as if this is a *fait accompli*, but this fails to capture our imaginations. We need a narrative to understand. Evans says: "Our imaginations are 'captured' before our intellects are engaged."[33]

To assist this process, the project exhibition creates opportunities for visitors to engage in the co-creation of community artworks. To paraphrase Lorna Cruickshanks and Merel Van Der Vaart, who argue for the value of *citizen science*, we view art and audience participation through positionality as a means of learning through *citizen art*.[34] Art adds at least two things, value and dialogue, resulting in the sense of value that comes from a dialogic engagement when the viewer is an active participant. Neither the artworks nor the associated activities discount the data, but they provide a handle for the viewer that opens out their imaginative capacity. Neuroscientist Antonio Damasio talks about reason and creativity as a chain of operations forming the relationship between emotion and cognition.[35]

At the transdisciplinary interface, the exhibition is a means of multi-layered communication. There are different modes in which to encounter the artworks, from passive encounter with a traditional exhibition catalogue to a more interactive mode in discussion with one of the exhibition guides/interpreters. In the gallery, we also have a virtual presence of the scientists via a Pecha Kucha-style presentation of the underlying ideas in the group show. We proceed from the assumption that people like people, and we have received feedback from our audience that they appreciate the extra efforts made to connect with them. The exhibition catalogue is made available online (free) before the exhibition. There are also the hands-on, creative ways to respond to the exhibition through the in-gallery activities and workshops during the public programme. The resources are also made available to local educators for classroom use away from the exhibition space.

MULTIVALENT AND MULTIMODAL FEEDBACK

Art's potential to create the opportunity to build capacity for inter/action can be illustrated in the responses we gathered during the exhibition "Ōku Moana (My Oceans)" (2018), in the written words, drawings, musical and social media responses.[36] The artworks set the scene, providing a greater narrative space.[37] In-gallery artists and scientists were on hand to tell the stories and answer questions. In return, visitors questioned, continued or emphasised the storylines in their responses through dialogue, written feedback and co-made artworks, including performance and waiata.[38]

When we look back at the multimodal records of people's voices, using "Ōku Moana" as an example, we see a measure for successful engagement. Over 600 written messages were left across all the recording activities during five days, and they revealed diversity in content. Different languages were used in the written responses, which suggested both ease and engagement for participants of all ages. The 'visitor book' recorded a constant community 'stream of consciousness,' as did the aspirations and responses incorporated into the 'wishing tree.' In all, there were three co-created community artworks plus takeaway art activities produced during the exhibition run of five days. These were all 'arty facts' of audience participation and engagement.[39]

AGENCY

How can we go about using art to raise awareness? Art viewership at its best is an active process, in which notions of truth and values are consciously tested and remade through thinking. Art imitates life.

Inasmuch as art provokes thought, it is a provocation. Inasmuch as we hope that art will inspire climate action,[40] it is activism. Artists tell us about what is happening in our society, they reflect our world – everything from human emotions to the politics of the times. This is a well understood role of an artist in our society.[41] In the 1980s, East Coast Australian arts collective Mambo countered art's imitative role for a more active role with the catchphrase "Art irritates life."[42] As regards climate activism, Leimbach and Armstrong argue that "Arts–science projects have the ability to engage diverse publics with the potential to 'do' social, cultural and political work, helping reframe partisan political debates … The learning opportunities they provide for both collaborators and audiences may therefore also contribute to the development of skill sets and knowledges capable of confronting the massive challenges of the 21st century."[43]

Does art have agency? Can art be a catalyst for change? In social science, agency is the capacity of individuals to have the power and resources to fulfil their potential. Human agency is the capacity for human beings to make choices and for those choices to have an effect on the world. As people working in the arts and sciences, we find ourselves at the crossroads where both the sciences and arts are under attack. Historically, the arts have been a cornerstone of social movements. Often working at the margins, the arts have the capacity to challenge the status quo.

A provocation in thinking these issues through was provided by an interview with art historian Peter Stupples in 2017. Speaking on the revolutionary art of Russia, Stupples argued that the impact of art was negligible as an agent of change during the revolution. Its role was rather in the area of discourse of change – that is, coming during and after key events. "The humanities teach you to think," says Stupples. "Visual culture doesn't really change people's behaviour. It usually follows, or it supports or emphasises."[44] He argues further that art's role in informing debate doesn't lead to action, rather "the action comes from another part of the field."[45]

Running counter to this view, and paraphrasing Kieran Long's "95 Theses" for contemporary curation, art has been seen as having an important role to play in the public realm. Art creates an agora in which to provide "a space for the public to encounter itself."[46] Long's idea that discourse is change is revolutionary. This is the kind of action that art can bring to create paradigm shifts. Recently, a group of art activists, Culture Declares Emergency, born out of the United Kingdom's Extinction Rebellion movement, declared:

> Science and technology alone cannot play the role of interpreting the existential crisis we face. … Participation is key to many of today's cultural and arts practices; building creative skills, lost crafts, and learning through doing and engaging. Drawing on patterns of belonging, empathy, kindness, stewardship … culture energises people's courage and capacities for action to respond collectively to challenges faced."[47]

This view is shared by former US advisor on climate change, Gus Speth, who sees a role for culture as a necessary agent in transformational change:

I used to think that top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that thirty years of good science could address these problems. I was wrong. The top environmental problems are selfishness, greed and apathy, and to deal with these we need a cultural and spiritual transformation. And we scientists don't know how to do that.[48]

For those who feel overwhelmed by the sense that we are standing on a precipice, art has a certain capacity to engage with the affect of climate change[49] – the embodied experiences of uncertainty, fear and hope. Janet Stephenson, a social scientist working at the Centre for Sustainability at the University of Otago, concurs when she says that "action reduces anxiety" and that the ability to do something or express yourself is important in moving pathways towards adaptation.[50] Again, Culture Declares Emergency says that "Creativity is the antidote to despair."[51] According to arts administrator Carla van Zon, artistic collaboration is pivotal to our climate crisis response:

Artists working together with scientists may be a way to reach many people and help us all to respond. Science has identified the problem and provides solutions. But it's the arts that are pivotal in telling us about who we are and what we want to be – and providing narratives of hope to help shape our response to the biggest challenge of our era.[52]

Increasingly, mass and social media are controlled by sponsored algorithms and entrenched narratives from those most responsible for environmental degradation.[53] Amitav Ghosh, in *The Great Derangement: Climate Change and the Unthinkable* (2016), laments that despite the climate emergency, sci-art as a vehicle to create discussion has gained little traction among the art community. He fears

that this moment in history might end up being remembered as 'a time when most forms of art and literature were drawn into the modes of concealment that prevented people from recognizing the realities of their plight. The scalar and temporal magnitude of the phenomena of climate change poses a unique representational and aesthetic challenge in depicting 'the long emergency.'[54]

The twentieth century brought us the term Anthropocene, which is now used to characterise the effects of human activity as the dominant influence on the climate and the environment. It is also an acknowledgement that nature is no longer seen as discrete from human activity. In a critique of Bruno Latour's *Politics of Nature*, TJ Demos calls on artists to counter the "complex actor-institutional network that motors the global fossil-fuel ecologies of unsustainability" that has resulted in "the manifold violence that is climate change."[55]

Irrespective of tribe or culture, research shows us that we need to use story and we need to "make Art as if the world matters."[56] For those who are uninformed, unconvinced or habituated in denial, artworks can be a pathway to introduce ideas in a non-confrontational manner. By sitting at the intersection of personal values, knowledge and society, art can help us to look at things differently. Art can be an entry point for people to engage on an issue – it opens dialogue. Talking about his work *Ice Watch* (2014), Olafur Eliasson asserts that art's power lies in providing a "safe space in which to have difficult conversations where we can share *without* having to agree."[57]

Interactions with artworks in the exhibition have the capacity to form ripple effects either through aesthetic interaction and unexpected encounters, or through the art activities that run alongside

the works on display. Art activities that the public can engage in during the exhibition – for example, the embossed prints on rag paper ("Coccolithophores Impressed") organised at "Ōku Moana" by the Sandpit Collective[58] – can be of a high quality and are likely to be retained and valued for some time to come. Barbara Stafford (2008) calls such works echo objects[59] – creations that encourage participants to share memories about the event in the subsequent days or weeks. This is more likely to occur if memories are based on an artefact that the audience member attaches value to because they have made it themselves during an event, if it is of high quality and/or it is a memento of an enjoyable experience.

CONCLUSION

Investigations in the hard sciences are essential to understanding our world and the significant issues we are facing. We are all living in an age of unparalleled quantities of information, and it is easy to feel lost or despair in this deluge of data. As art makers in the Art+Science project, we work collaboratively using a transdisciplinary methodology to 'ART-iculate' the data. Through these works, artists seek to engage responses from the community through an aesthetic encounter which recognises the complexity of raw facts, but expresses them in terms of visually recognisable representations or communally relatable patterns. By creating narrative spaces, we invite the audience to partake in the ideas behind the data and encounter the storytelling via the visual, written, spoken and/or performed word. Through the variety of audience responses, we gain an intrinsic measure of audience response through their engagement, participation and feedback. We are *Homo narrans*[60] and as artists we use visual texts to tell our stories. It is the role of the curator to create space for conversation and re-imagination of the world in dialogue with those experiencing change. If as artists we make art as if the world matters, we send a signal that we care. We bring hope to hubris – hope that we can mitigate the changes humanity is creating at the planetary scale. A reminder that hope was the first gift that Prometheus gave to humanity.[61] We hold the hauora of the community at the heart of what we do by learning through doing in a process of reciprocity.

The Art+Science project gives people an opportunity to view, to wonder, to discuss, to understand, to create their own artworks and explore from their own bedrock of understanding in the multiple ways of the exhibition encounter. [62]

Pam McKinlay has work and research histories in applied science, art and publishing. Her work is concerned with the transference of ideas and knowledge – the process and practice of making and the process and practice of making available to the public. She has been the artist–curator of the Art+Science project since 2018.

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CAROLINE MCCAW AND LOUISE ST PIERRE

ATTENTIVE AND APPRECIATIVE: DESIGNERS CONNECTING WITH MORE-THAN-HUMAN BEINGS

INTRODUCTION

This essay considers a design student project that practised methods and languages for connecting designers with the more-than-human. The term refers to ecologist David Abram's phrase "the more-than-human world" as a way of considering our entanglement with earthly nature.[1] Alongside ecological thinking, we drew upon New Zealand Māori and Canadian First Nation scholars and worked with local cultural advisors. This project was offered across two design classes, beginning with one in Vancouver, Canada, and the other in Dunedin, New Zealand, with a six-week synchronous window.[2] These schools connected through DESIS, a network of labs that research social innovation and sustainability. Teachers and students were able to share their approaches and progress online, culminating in an online exhibition and conversation. Key ideas explored included Karl Wixon's "whakapapa-centred design"[3] and Robin Wall-Kimmerer's "grammar of animacy,"[4] indigenous values that centre the natural world as sentient and present with the world of humans. Students were tasked with becoming advocates for a more-than-human being. They drew upon multiple frames to learn about this being and conceive of possible different relationships. After conducting a series of immersive research activities including meditative, phenomenological and academic approaches, students drew upon their design skills to translate and share their learning. The outcomes are a variety of prototypes, designed to share this advocacy as experiences for others. Through a combination of online and embodied learning, many explorations brought to light understandings about the fundamental interconnectedness of humans with the earth, with all species and with each other.

BEGINNINGS

This project began, as many do, with a conversation.

Conversations can collect thoughts. They require two or more participants and require attentive listening and appreciative reflection. Communication with open intention is inclusive of multiple perspectives and understandings. Time and space open up through skillful listening and attention. Thich Nhat Hanh identifies that "[t]o listen is first of all to be fully present and not distracted."[5] In this course, students developed abilities to be attentive and fully present to the life force in another being, shifting their attention and communication, "maybe just 20° away from what we have been taught to seek, to bring attention to the living earth; to forests, ravens and ground squirrels."[6] This shift affirms that more-than-human beings have much to offer to design conversations.

This project brought together design students across the Pacific Ocean, from Emily Carr University of Art and Design in Vancouver, Canada, to Otago Polytechnic School of Design in Dunedin, New Zealand. Both schools were united through their common relationship in the DESIS Network, where research labs are dedicated to exploring social innovation for sustainability. The project drew together texts and experiences, local indigenous advice and our worlds around us; we endeavored to listen together appreciatively, reflect and use our design tools and languages to share and communicate our relationships with others.

Two texts framed the shared project. Robin Wall-Kimmerer's essay "Learning the Grammar of Animacy"[7] describes the author's experience learning her indigenous language, and with it new relationships to the natural world, in constant vibrant flux, in states of being and becoming. Wall-Kimmerer combined perspectives from science with her grounding in the Citizen Potawatomi Nation. She shared multiple understandings of her sense of place and belonging in these worlds. She made connections between the traditional Potawatomi language and the biological world, as she integrated new learning made available to her through the vocabulary and grammar of her native tongue. At first, in frustration, she describes the limitations imposed by the predominant use of nouns in the English language. Nouns remove life, reducing nature to "things." Most of the words in her Potawatomi language are verbs ... "to be a hill" or "to be a bay."[8] These places are defined by their animate qualities, and only become perceived as fixtures in a landscape when considered in English, as nouns. Wall-Kimmerer describes her epiphany when she identified the difference that verbs allowed her in terms of perception:

> In that moment I could smell the water of the bay, watch it rock against the shore and hear it sift onto the sand. A bay is a noun only if the water is dead. When "bay" is a noun, it is defined by humans, trapped between its shores, and contained by the word. But *wiikegama*, to be a bay, the verb releases the water from bondage and lets it live.[9]

Through breathing life back into her language Wall-Kimmerer is breathing life back into her world. This changes our conversation, too, as she asks us to use language and active thoughts as we consider our natural worlds. For instance, she suggests that we replace the use of "it" with "she, he, or they" when referring to natural beings.[10] We encouraged this practice by example. For instance, we would say in reference to lichen, "She lives on the rocks." Or, about a tree, "His roots are fed by the mitochondria." By adopting this phrasing, students found themselves in more intimate relationship with their beings.

Founder of Māori Design Society Ngā Aho, Karl Wixon's article "Whakapapa-centred design"[11] was read alongside Wall-Kimmerer's text, and also contributed to students' conversations through their reading and reflection. Wixon identified indigenous Māori values and protocols (tikanga) and how these connect people and place and can also be read as a necessary approach to design: "'Whakapapa' is generally translated in English as genealogy, but it is much wider and deeper and is at the very heart of Māori ontology and identity. It connects people and place in an inseparable way."[12]

As we began a project that required students to engage directly with their environment in order to forge social connections, these indigenous wisdom stories were a reminder to respect the important relationships that have been forged before us, during the times of our earliest ancestors arriving and becoming.

But Wixon's knowledge, like Wall-Kimmerer's, also proposed methods. "When we anchor design in whakapapa and tikanga, we open up all of our senses, we view people, place and environment as inseparable and interdependent, we engage deeply in ways that form enduring bonds, commitments and sense of consequence."[13]

This sense of deep social connection and understanding of consequence that Wixon describes leads naturally to greater care in design. We regularly reminded the students to avoid extractive and exploitative approaches, such as harvesting materials to make artefacts, and to take care that insights from nature would not be operationalised in utilitarian contexts. Wixon cautioned as well that we not "extract natural resources with no sense of consequence or intergenerational effect."[14] These approaches need to be held at the centre of design practice, building non-extractive relationships that are inclusive and respectful of all beings.

We reached out to our local indigenous advisors to help us learn appropriate and respectful ways. In New Zealand this approach is considered within a bicultural conversation, encompassing the two cultures – indigenous Māori (First Nations) and non-Māori or Pākehā – who formed a co-governance treaty in 1840. Ron Bull[15] describes how we have come to know each other's ways, and through this ongoing conversation have opened up a third cultural space. He spoke online to our students about his identity and connections to his own whakapapa, as Māori, from the southern islands of New Zealand. These narratives, he adds, may be part fact and part story, but he is certain of their implications, of his connections and responsibilities toward the landscapes – mountain and river, the islands and the birds – that he is connected to through his whakapapa. He also talked about his experiences of meeting First Nation people in British Columbia, and the connections he made – forging connections across the ocean.

In British Columbia, things are more complex. This Canadian province is home to almost 200 First Nation communities, with over 36 dialects spoken. Among these Nations there are many overlapping forms of ritual, grounding, respect and greeting, but there are also different cultural ways. We cannot refer to a singular indigenous culture. In Canada, indigenous reconciliation has only just begun, and the infusion of indigenous wisdom into academia is not as far along as it is in New Zealand. Indigenous Advisor Connie Watts[16] impressed upon us an understanding that seemed to be central among many First Nations: that everything is comprised of energy. The energy might be slow, as in a rock or mountain, but it is always moving, movable, and can be heard; this energy, whatever manifestation it might appear as, is all the same. Everything is alive. In these

teachings, Connie made it clear that modernity's notion that sentience is restricted to humans and animals is inaccurate. All beings, including trees, rivers and mountains are sentient. "Everything is one," she said.

As part of her pedagogy, Connie led the Canadian group through several circle conversations in which she brought each person 'into the room' by inviting responses to a series of personal questions in turn, such as "Where are you from? Who are your ancestors? What do you love about this project?" This intimate conversational format left a legacy for the class. Circle conversations featured largely in later meetings and class discussions, and even replaced design critique. The classroom, whether virtual or in person, became a place to unravel questions and offer support for one another. This form of engaged pedagogy eases pathways for new and sometimes unsettling learning.

OUR PROJECT

In our 2021 project, Canadian students were in lockdown, most working – and attending our online classes – from home. In 2022 the opposite was true, and this time New Zealand students were working at home through pandemic conditions, while Canadians were at last free to meet at design school and work in their studios. The online nature of the project was able to bridge our varying conditions and although many were home-bound, the core of this international exchange was a deep focus on the local. Even those with restricted travel conditions could walk outside their home and find evidence of nature with their first step. This brought new agents to our online conversation, and both familiar and unfamiliar species to our collective work. Although our classes coincided for six weeks, the Emily Carr semester had started six weeks before their Otago counterparts. These students began on their path in advance and were able to mentor and demonstrate their approaches and understandings as their peers in Otago approached the project.

As mentioned above, the project began with a conversational approach, as students were tasked with developing a social relationship with a more-than-human being. The term refers to ecologist David Abram's phrase "the more-than-human world"[17] as a way of considering our entanglement with earthly nature. Designers explore many different methods and processes in relation with people, nature, materials, forms and artefacts. In this project, we focus on how this can be considered a conversation in Donald Schön's terms. Schön described this approach as "a reflective conversation with the situation."[18] Each situation is unique, complex and uncertain, and must be continually reframed, requiring reflective action, which is the basis of a conversation. In this conversation, the situation "talks back."[19]

In this way, speaking and listening takes place between designer and material, designer and sketch model, and between models and sketches themselves, with increasing complexity. Bringing the animate world into this conversation opens an additional dimension that requires a new skill set for designers, one that rests largely, as we noted earlier, on building new listening skills. How long must we sit with a tree to hear her words? What does she have to say about this day? A process that was already very dynamic became increasingly emergent, and at times out of the control of the designers. This, we speculate, is a good thing. The natural world has been degraded for centuries due to the modern impulse for control.[20] To not be in control means to engage in wholehearted spiritedness with an otherness that has integral rights and agency. It also has mystery.

The design brief asked students to learn first through their bodies – in Wixon's terms "to open up all their senses."[21] This required apprehension, appealing to their being, becoming available physically in their world, in a phenomenological sense. The project began with roaming outside. Students can't start this project in front of a screen. They need to physically relocate outside of the classroom to identify a possible project partner, all the while remaining open to different ways of feeling, listening and 'being with.' As Kimmerer said, "Listening in wild places, we witness conversation in a language that is not our own."[22] This took a leap of faith initially, but in order to participate in what Lynch and Mannion identify as "ongoing reciprocal response-making,"[23] learners and educators must first become attentive. Through this process, most students became aware of their entanglement with other beings.

These early conversations were attentive to the centrality of the natural world as sentient and present with the world of humans. Students were tasked with becoming advocates for another (more-than-human) being, and drew upon many different modalities – experiential, sensorial, embodied, collaborative, collective and academic – in order to learn about their being and conceive of possible different relationships.

Students created a shortlist of possible beings – ranging from lichen, birds, bears, rivers and mountains – to work with, eventually narrowing the selection to one entity for each student. Importantly, the students also created a species card to describe themselves, within similar categorisations as for their chosen being. Students described their own class, species, habitat, food supply, food sensitivities, ecological sensitivities and other factors. Displaying their own species card alongside a card for their chosen being positioned them *among* other beings, rather than *above* them. This was a subtle challenge to human exceptionalism, the pervasive view since the seventeenth century, that humans are apart from and more important than other species.[24] Referring to their parallel species cards throughout the semester, students were regularly reminded that they are included in the wondrous diversity of the animate earth.

After a species was selected, students conducted deep-dive research, including academic approaches and design approaches such as multi-sensory exploration, meditation, system mapping and sketching. At this stage, it was easy for some students to become overwhelmed by information, as it became increasingly apparent how many interconnections there were between their species, other life forms and surrounding ecosystems. In the midst of scientific knowledge, the question came up repeatedly: What is a designer? What does a designer contribute to this relationship? The system maps proved to be important ways of organising the complexity of new learning. Some students took it upon themselves to research ways of mapping, and developed highly visual charts that were integral to their project outcomes.

Once surrounded by different forms of knowledge, students drew upon their design tools and languages – along with other knowledge systems available to them – to translate and share their learning through the design of an experience that advocated for their chosen being. During this design and development stage, the students met online in small groups for feedback and critique, developing friendships and an appreciation for similar and dissimilar approaches, places and beings.

The outcomes are a variety of prototypes, designed to convey students' learning and advocacy as experiences for other audiences. One student spent weeks trying to engage crows in a game that

he had designed for them, only to see the crows regularly take his offering of food and skip away. He determined then to meet the crows on their own terms. He designed a shelf that would clip on easily to any window as a landing deck where crows (or other winged beings) could be offered water and food. Like him, many other students encountered the agency of other beings and shifted their designs to respond to them.

Themes of communication and storytelling resonated through the projects. One student was so enchanted by the stories her classmates told of their experiences with trees, bogs, mushrooms and nudibranchs that she designed and hosted a series of podcasts featuring each of her classmates' beings. Another designer reached out to a mushroom foraging group and asked them to complete a survey aimed at learning about the different ways people got to know mushrooms, in order to gain insight into developing fungi friendships. One student spent weeks studying and listening carefully to decode the language of a stream. She created a series of interpretive tiles for an adjacent school, so that children could also listen more deeply and notice all the small beings who inhabit the stream.

Some of the projects were intimate and personally transformative. The student who swam in the cold winter ocean every week to honour the salmon; the student who went for a barefoot run and over the weeks developed an appreciation for the benefits of slow attentiveness to the task at hand, inspired by the worms beneath his feet. Qualities of attention and listening permeated all projects, some directly and others indirectly, and all led to a change of relationship between the designers and the natural world.

LEARNING ACROSS MULTIPLE DOMAINS

We referred above to Donald Schön's conversation with a given situation where reflection-in-action is the reflective form of knowing-in-action, indicating that the languages of making are at play in a given student's designing. While Schön was focused on identifying a spatial action language inherent in design, our conversation deepens the appreciation for phenomenological and design-making languages. The addition of animist practices helps to further "spread mind and creativity out much more widely."[25] We also share the belief that many "design practices can support other ways of knowing. Sketch models, drawings, reflective documentation, role play and storytelling can unlock designers from their thinking self and help them see things differently."[26]

Numerous other elements were introduced to our – much noisier – conversation, which drew together multiple beings, multiple locales, multiple cultures and multiple approaches as designers shared their projects with peers, faculty and classmates. For many students there was a new and embodied realisation that everything is interconnected … that more-than-human beings have always had something to say.

CLOSING THOUGHTS

The intentions of the DESIS network are to research design that incorporates social innovation for sustainability, with a focus on relationships and community. After this project, we now know with certainty that all beings have insights to offer our social innovations, and that limiting community to human-to-human has serious flaws for any sustainable future. Upon reflection, we realise that intriguing spaces and possible new communities opened up as a consequence of our trust in sentience. The design students took up all the necessary tools and languages to engage in ways that held these spaces open for periods of interconnected learning, for new conversations. Through these conversations we identified three design system relationships that can be understood differently.

Reconceiving systems: We recognise that our emerging methods reflect those of design ethnographies, drawing for example on observation techniques and empathic interpretation, engagement and sense-making.[27] However, our practice reconsiders a design system without humans at the centre.

Trust and letting go: We found that this kind of learning is highly engaging and is available to everybody who is willing to pause and pay attention – and is willing to let go of preconceptions about knowledge, design process and an outcome focus. Personal trust in a different starting point is required, and an acceptance that designers can turn to design tools when they need them, rather than start with them on hand and let familiar tools dictate the result.

Tools and their place: This project helped us to reconceive what a design tool can be, and what an exploratory tool can be. In an online workshop held during lockdown, the Roving Designers[28] asked students to raid their homes for spoons, yarn or other tools that could support exploration. The research tool was then something domestic and incidental. Further, the engagement between human and more-than-human allowed for tools to be realised during the research activity. For example, one designer chose to hang from a branch of a tree in order to see the world from another perspective. The branch became a tool for examining differing perspectives. It is only the relationship between the tree and the body that allows a tool-like quality to be identified in that moment. This example may help us see the limitations of both tools and ethnographies. The branch shifted from an element of observation to a device that helped to change the observation process. Within the system of observer–observed, the previously observed became a different element with a new role.

Another unsettling example can be seen in the student who asked, "What does the tree see when the tree sees me?"[29] In conventional ethnography the designer does not ask, "How does the research subject see me"? This posture signifies an extraordinary amount of humility and a resetting of presumed hierarchies. It brings humans into the place, into an authentic relationship, one which is non-extractive and compassionate.

We recognise that we are not alone in these efforts,[30] but are developing particular methods with which to form connections and relationships that may grow and connect us and our learners with an animate world. These methods acknowledge and make room for more than one worldview, including the views of our local indigenous cultures. In this project we have learned that through iterative design conversations and attentive listening, other voices can be heard.

Acknowledgements

Caro McCaw is an associate professor and head of programme Communication Design at Otago Polytechnic. She employs creative social practice and approaches in art and design contexts. Embracing sustainable, decolonial and indigenous agendas, her workplaces emphasis on social relationships, interdependency and care, to suggest empathic and alternative ways of knowing and being, across diverse projects and contexts. She is the coordinator of the Otago DESIS (Design for Social Innovation and Sustainability) lab, a node in an international network, and an umbrella and a hub for a community of like-minded researchers.

Louise St Pierre descends from a long line of settler farmers and artisans. Her passion for the Earth has propelled her to research ecological design throughout her career. She is co-author of the internationally recognised Industrial Design curriculum, Okala Ecological Design. She established Canada's first DESIS Lab at the Emily Carr University of Art and Design, Vancouver. She brings animist views to DESIS, decentering the human and contending that all beings are social. In her PhD, she integrated her concern for environmental sustainability with her Buddhist practice to understand how modern culture's tendency to diminish our relationships with nature has implicated designers. Her recent publications including *Design and Nature* (with Kate Fletcher and Mathilda Tham) and *Design for Biodiversity* (with Zach Camozzi) offer a range of examples of how designers can reprioritise the importance of the natural world and challenge human exceptionalism.

1. David Abram, *The Spell of the Sensuous: Perception and Language in a More-than-human World* (New York: Pantheon Books, 1996).

2. We refer to our respective nation states using their non-indigenous nanes for the sake of clarity for our international readers. New Zealand is also know as Aotearoa and Canada is part of the larger nation known as Turtle Island.

3. Karl Wixon, "Whakapapa Centred Design Explained ...," *Linkedin*, 16 August 2020, https://www.linkedin.com/pulse/whakapapa-centred-design-explained-karl-wixon.

4. Robin Wall-Kimmerer, "Learning the Grammar of Animacy," *The Leopold Outlook* (Winter 2012), 4-9.

5. Thich Nhat Hanh, *Zen and the Art of Saving the Planet* (San Francisco, CA: HarperOne, 2021), 191.

6. Louise St Pierre, "A Shift of Attention," in *Design and Nature: A Partnership*, eds K Fletcher, L St Pierre and M Tham (Abingdon, UK, and New York: Routledge, 2019), 20-25, at 25.

7. Wall-Kimmerer, "Learning the Grammar."

8. Ibid., 7.

9. Ibid.

10. Ibid., 8.

11. Wixon, "Whakapapa Centred Design".

12. Ibid.

13. Ibid.

14. Ibid.

15. Ron Bull, tumuaki whakaako at Otago Polytechnic, identifies with Kai Tahu, Kati Mamoe and Waitaha whakapapa or tribal heritage.

16. Connie Watts identifies with Nuu-chah-nulth, Gitxsan and Kwakwaka'wakw ancestry.

17. Abram, *The Spell*.

18. Donald A Schön, *The Reflective Practitioner* (Farnham, UK: Ashgate Publishing, 1991), 76-104.

19. Ibid., 132.

20. Joanna Boehnert, *Design, Ecology, Politics* (London: Bloomsbury Academic, 2018).

21. Wixon, 'Whakapapa Centred Design."

22. Wall-Kimmerer, "Learning the Grammar," 15.

23. Jonathon Lynch and Greg Mannion, "Place-responsive Pedagogies in the Anthropocene: Attuning with the More-than-human," *Environmental Education Research*, 27:6 (2021), 864-78, at 873.

24. Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution*, 2nd ed. (San Francisco, CA: HarperOne, 1980).

25. Val Plumwood, "Nature in the Active Voice," in *The Handbook of Contemporary Animism*, ed. Graham Harvey (Slough, UK: Acumen Publishing Ltd, 2009), 441-53.

26. St Pierre, "A Shift," 24.

27. Reflecting keywords identified in Keith M Murphy, "Ethnographic Design," *Society for Cultural Anthropology*, 29 March 2018, https://culanth.org/fieldsights/ethnographic-design.

28. Roving Designers, online workshop, Spring 2021, INDD 310.

29. Student conversation with author, 2022.

30. The pioneering design and nature work of Dr. Kate Fletcher is described in her books *Wild Dress* (Uniform Books, 2019); *Design and Nature, A Partnership*, with Louise St. Pierre and Mathilda Tham (Routledge 2019); *Outfitting*, with Helen Mort (Hazel Press 2022).

SARAH ROBERTS

NEGOTIATING DIFFERENT WORLDS AND DIVERSE CULTURAL LEGACIES THROUGH APPLIED CREATIVE PRACTICE IN A SITUATED LEARNING PROJECT: *HLAKANYANA 2022*

Prism-like, the 2022 *Hlakanyana* project at the University of Johannesburg's (UJ) Faculty of Art, Design and Architecture (FADA) refracted both clear and shadowy issues embedded in arts, culture and pedagogy in a society grappling with decolonisation. Participation in the project indicated that transformation imperatives have been compounded by the socio-economic consequences of a two-year lockdown. On 8 March, some 300 masked second-year students, seated in Keorapetse William Kgositsile Theatre auditorium, were introduced to a project that has come to be known as Theatre 101. Daunted and uncertain, they, like similar groups before them, were confronting requirements of designing for an unfamiliar medium amplified by the logistical implications of group work at the start of returning to face-to-face learning. Initial responses at the briefing session indicated skepticism towards an undertaking in which multiplicities converged. My role throughout, as professional designer and academic, was that of participant–observer, and this reflexive report documents the spectrum of intertwined issues that emerged in the UJ initiative rather than pursing a single aspect for sustained interrogation.

A brief summary of the implementation of the Theatre 101 project contextualises its resumption in a format that shifted reference points, subject matter and 'deliverables.' The eponymous trickster character and his fabled exploits[1] are then outlined (through an account of the script development) to indicate some challenges embedded in visualising the production style. The outcomes of the project are subsequently addressed through reporting on the portfolio presentations.

THEATRE 101

Initiated by then executive dean of the faculty, Professor Federico Freschi, this Bauhaus-inspired theatre project was intended to foster inter- and multidisciplinary applied design. In 2017, the routine timetable was briefly suspended to promote and extend interaction across disciplines stimulating peer interaction through creative engagement. A further objective was to expand campus integration through alerting young students to their presence as stakeholders in the activities of the university's public-facing Arts and Culture Department. The situated-learning exercise made explicit the scope for extending and applying specialist skills, expanding frames of reference, and provided a template for professional pitching processes. Over three years, the strategy of merging the campus theatre's production design requirements with FADA pedagogical imperatives has increasingly blurred distinctions between major productions staged by UJ Arts and the professional arena. The designs for *African Gothic* (2017), *Metamorphosis* (2018) and *Let the Right One in* (2019) served the respective productions successfully, with Michal Sushan's minimalist avant-garde design for *Metamorphosis* winning the local Naledi Best Set Design Award in 2020. Neither she nor group members were individually acknowledged: the award went to the student cohort.[2]

Students in their second year of study from the eight creative disciplines were to be introduced to theatre design through two weeks of illustrated lectures, followed by loosely supervised studio sessions dedicated to concept development. Collectively, some 260 second-year students from architecture, fashion design, graphic design, industrial design, interior design, jewelry design, multimedia and visual art were to apply their diverse skills to resolve the design, marketing and budgeting challenges for the UJ Arts production.[3] They were required to develop a script breakdown, collages of reference images, a mood board, sample and swatch boards, a 1:25 scale model (with accompanying ground plan and elevation drawings), A3 costume design sketches, marketing posters, a 30-second animated trailer and cost estimates. The tight timeline of the programme (administered by UJ Arts and Culture, FADA staff and guest professionals) tested multiple capacities, chiefly the ability to work within a team and as individuals. All participants would have to navigate cultural heterogeneity along with differences in capital, language proficiency and frames of reference. Collectively working towards a coherent conceptual solution, individuals would gain insight into each other's training repertoire, methods and reference points. Additionally, participants might have to relinquish preferred positions and cultural comfort zones to engage with unfamiliar iconography and idiom.

Hlakanyana is anchored in rural community life – thus seemingly remote to emergent theatre-makers and designers based in South Africa's Afropolitan hub. The 2022 script (in draft form) interwove contemporary urban motifs with rural formations and myth. In previous years, the selected play not only existed in print, but images of prior stage treatments abounded as reference points for first-time set designers. Past productions also tended to reflect largely urban-based Eurocentric norms and values corresponding with much of contemporary South African life. The dramatisation and theatrical presentation of *Hlakanyana*, with its origins in a heritage of orature, storytelling and improvisation, offered few such reference points. Participants were arguably socially and culturally distanced from past ways of being and belonging that prioritise the interests of a collective rather than individual subject identities. The challenge of identifying treatment, style and tone required delicate negotiations between respecting tradition and innovation.

HLAKANYANA 2022: A PERFORMANCE SCRIPT FROM FRAGMENTS CULLED FROM THE ORAL TRADITION

No prior staging of *Hlakanyana* as a play or musical is on record. Despite its local folkloric prominence, the story was unfamiliar to some members of the scripting team and the majority of young designers who indicated that they, too, were unfamiliar with the story and what it represented. The subject matter, themes and 'relevance' of revisiting the story today urged introduction and explication.

In 2019, actor–producers Zolani Shangase and Michael Wallace proposed a rendering of the Nguni fable as a vehicle for staging issues of identity, dispossession, moral corruption and re-integration. Episodes of Hlakanyana's life – his birth and subsequent adventures – as variously remembered and available in print, indicated the appeal of the enigmatic trickster figure. An unnatural child, born to a king and queen after unorthodox conception and gestation, Hlakanyana is, at birth, both baby and adult, able to speak, walk and satisfy his needs. Rapidly exposed as duplicitous and self-serving, he is exiled from family and community. Multiple encounters ensue as he outwits a succession of fabulous creatures: his survival is enmeshed in moral ambiguities. Ultimately, the cautionary fable is one of accountability and the regenerative force of nature and the human spirit. The story celebrates communal ways, reconciliation and re-integration.

Themes of reciprocal interdependence, social cohesion and being anchored in socio-political and natural environments not only reiterate throughout *Hlakanyana*, but also informed the process by which the work was made, chiming with activist Mamphela Ramphele's assertion:

> Interconnectedness is at the centre of our being and consciousness as people and *Ubuntu* is an affirmation of that interconnectedness which acknowledges human dignity by fellow human beings. [...] African cultures are not the only ones founded on the understanding of the deep interconnectedness. Chief Seattle, a Native American, characterized our connectedness as follows: "Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect." It is significant in this formulation, it is not only human beings who are connected, but all of creation as well. Sustainable development and stewardship of our environment take on new meaning.[4]

The interconnectedness stressed by Ramphele corresponds with key features of traditional African performances that valorise inclusivity or active participation. Explaining the value placed on collective expression and action, Malaika Mutere writes: "Artistic expression plays an entirely different role in the lives of African peoples, providing a forum for participation in community and for exploring the mysteries of humanity – it can be thought of as 'art for life's sake.'"[5]

The pandemic and lockdown of 2020 had redefined the terms of project development, replacing the scheduled FADA design project with an experiment in collective online scripting. Collaborative authorship hinted at the scope for resisting a writerly approach to theatre-making and textual fixity. The primary objective of the writer–performer ensemble was to weave and unify selected episodes of Hakanyana's life into a multimodal performance text that celebrated contemporary energies. The transition to Zoom meetings enabled Cape Town-based storyteller, improviser, artist, healer and musician Nduduzo Makhathini to offer valuable contributions to forging an African aesthetic that emphasised spontaneity and inclusivity. His input hinted at staging the play as a hybrid of rehearsed sections and improvised 'open' sequences prompted by audience input.[6] But

contemporary theatre-making projects, unlike the work of researchers and scholars, may draw on past cultural paradigms without interrogating formal tensions between orality and literacy, or even matters of authorial ownership and control.[7] A single participant was mandated to produce a multilingual script from scenarios, characters and images that had been generated collectively. The lyrics and music were developed separately,[8] and integrated into the script well ahead of rehearsals – in contrast to the template set by Mbongeni Ngema's paean to the 1976 Soweto Uprisings, *Sarafina!* (1986), which was only recorded in writing in New York following a three-month season in Johannesburg.

Hlakanyana was ultimately scripted, even if the draft presented to aspiring designers was to be subject to further revision. As the core reference point for design, the provisional script (in my opinion) seemed overly inflected by Western musical dramaturgical conventions and staging assumptions, rather than Makhathini's performance idiom. Literal representations of place or setting seemed detrimental to of the flow of action and antithetical to traditional storytelling manner. Multiple locations were described in explicit detail. Intrusive shadow play sequences were outlined in stage directions, along with animated projections. Both seemed detrimental to an actor-centric performance mode. When Theatre 101 was launched, well ahead of rehearsals, narrative uncertainties and the overall performance style remained unresolved, although the creative team was committed to an Afrofuturist style.

The staged reading – presented for the design students' benefit – judiciously omitted all stage directions. Subsequently, the production director, Janice Honeyman (in her brief to student designers), stressed the need for a simple – even traditional – circular gathering space that implied audience inclusion, rather than a sequence of Afrofuturist pictorial or illustrative settings. Her vision chimed with the aesthetics of storytelling and ritual as described by Mutere:

> African traditions have ritualized [the non-evaluative] principle [of calling life into being] in the oral-aesthetic event that unifies movement in time (music) and space (dance) as a continuum of creation and a metaphor for life. "Music," in the Western sense, does not exist as a separate African term, but is regarded as an enhanced sounding of the word. Likewise "dance" is traditionally regarded as an enhanced form of walking and a physical extension of sound. To separate the two would interfere with the oral-aesthetic dynamic and its patterns of creational order, its communal imperatives, its governing narratives, and its transcendental passageways.[9]

At the staged reading, seated in a semi-circle on a bare stage, the cast could enact, dance and narrate events alluding to locale and timeframe as per storytelling tradition. It seemed that the ideal design might aspire to sustaining such flow and fusion of performance modalities.

Just as word, music and dance intertwined in the 'oral aesthetic,' so too the visual components of set, costumes and props might merge instead of remaining discrete crafts, as in the instances of Kalabari and Dogon masquerades. Templates of multiple manifestations of 'inter-connectedness' formed reference points for visual research, along with selected sculptures by Sokari Douglas Camp, Yinke Shonibare and other contemporary African visual artists. Alerting students to a continental range of artworks aimed to promote nuanced thinking and an innovative use of materials, rather than reiterations of African futurist images. Masquerades and artworks also alerted us to the rich potential of designs being presented as maquettes and toiles (for costumes and masks), rather than rendered as sketches and blueprints.

POSITION/S AND PERSPECTIVE/S 2022

This partial and fragmentary participant–observer account is predicated on a bias towards theatre as a medium of encounter which actively embraces inclusivity, celebrates chance and improvisation by an ensemble to emphasise the inherent sociability and ephemerality of theatre as a medium of public encounters, directly antithetical to solitude and isolation.

During lockdown, vibrant exchanges in classrooms, studios and stages had been displaced by the limitations of small screens and technology. Expression and interaction depended largely on electronic devices which spurred initiatives and experiments in digital theatre, the most successful of which, in my view, were either self-reflexive or explicitly incorporated tensions between domestic 'places' and the public sphere. The experience of being positioned in front of a small screen is nothing like the live experience of theatre, with its awareness of shared responses. Theatre 101 in 2022 coincided with the return to an unfamiliar, transformed and transforming socio-public sphere. What Fredric Jameson[10] calls Brecht's "pragmatism" informs my own thinking: "You turn a problem into its solution, thereby coming at the matter askew and sending the projectile off into a new and more productive direction than the dead end in which it was immobilized."

My experience of online teaching and student delivery during 2020 had suggested strong capacities for independent study, resourcefulness and effective time management, along with the acquisition of new skills. This disposition could potentially be harnessed to what was novel in Theatre 101, even if teamwork and collective action seemed antithetical to entrenched solo learning practices: continued access to electronic learning material (consolidating the habit of solo learning and revision) could now operate in conjunction with live interactive class participation and peer support. The process – like ensemble performances – might serve as a tool of social re-integration, in addition to expanding design skills. Reminding this cohort of their successful completion of first-year coursework (despite considerable challenges) built confidence at the outset, and defining the task as an adventure was instrumental in recasting group work as a process. Material and conceptual discoveries stood to be enriched by the contributory support of peers: multiple ideas might reasonably proliferate for exploration and testing. Barely weeks later: confidence, pride and pleasure in each other's company, work and achievements were affirmed by participants.

The pandemic and the economic impact of lockdown highlighted inequitable access to resources. During my final year at the University of the Witwatersrand, I was regularly called to emergency online meetings to address student problems and the urgent need to resolve deficits reported by students deprived of campus resources. Multiple difficulties included the lack of devices, airtime and assured access to electronic learning platforms. The stark reality of a 'digital divide' early in the transition to online distanced learning exacerbated extant socio-economic inequities. Marked and nuanced distinctions between urban and rurally based learning emerged: students accustomed to what residence life enabled suddenly faced expectations of having to perform their share of domestic chores, while continuing with timetabled studies. Less time to devote to 'schoolwork' was, for many, compounded by erratic network access, data costs and the lack of a reliable energy supply. The national power supplier intensified its load-shedding strategy, variably affecting domestic online course participation: access to varied resources appeared to be a distinctly urban privilege. Arriving on campus for Theatre 101 brought different student constituencies into direct contact with one

another and also coincided with (anticipated) annual protests over academic exclusion, along with what non-compliance with mandatory vaccine policies might portend. As the project began, applications for exemption on grounds of "reasonable accommodation" were being implemented.[11]

Theatre 101 was planned according to hybrid multimodal models combining online learning with contact teaching. But, introducing 'theatre' via screen encounters seemed counterproductive since theatre, as medium, is constituted by the presence of performer and audience in the same place and time. Happily, the 436-seat theatre was available for use in full compliance with COVID safety protocols. Compact and dense PowerPoint presentations and a vocabulary of theatre terms could be linked with appropriate referents when presented from the stage. Equally, abstract design considerations – sightlines and setting lines – would be more readily comprehensible, especially for students grappling with English as a second or third language.

Prior to 2022, foundational skills (working to scale, reading ground plans and elevation renderings, figure drawings and model-building skills) had already been acquired and refined. While participants were to some extent familiar with campus resources and procedures, the outcomes of a year of distanced learning along with rapid orientation to campus life would be tested. Uncertainties abounded. Unlike past years, the project was implemented over six weeks and curriculum classes were not suspended for its duration. To the credit of FADA staff and students, the customary skills evinced in previous years remained impressive, despite the lack of face-to-face guidance and/ or provision of specialist materials or equipment. Some students remained reluctant to request support and opted to work with materials and equipment at hand: patterns of established resourcefulness persisted in careful, competent modelling without scale rule or scalpel, as some studio sessions showed. And, during final presentations, one set of costume designs barely filled half a page of a lined exercise book, rather than plain A3 drawing paper. Visual impact was compromised, but impressions of design capacity were reinforced rather than diminished through this evidence of initiative. Portfolios were impressive, with nine of the 28 groups awarded a first-class mark, against four provisional group failures. Throughout the presentations, multiple project outcomes emerged.[12]

REVIEWING PRESENTATIONS

Students presented designs in rotating groups on the small stage of the Con Cowan Theatre. Their pitches replicated professional bidding practices, along with accounting for the genesis and development of their proposals. Most 20-minute presentations had been planned and rehearsed with due care and, in many instances, considered dress codes communicated group cohesion. Shared, inclusive representation appeared to be a tacitly defined goal: few groups opted for a solo spokesperson. The majority favoured all members speaking to some aspect being presented. Although mandatory facemasks predictably stifled expressions, some individuals requested (and were granted) permission to unmask while speaking. The dominant feature of presentations was an intensified reliance on digital media, along with greater fluency in multimodal intertwining of digital and hand-crafted material. A clear majority acquitted themselves extraordinarily well in completing the multiple tasks. Few groups had missing elements and attempted to account for these lacunae by ascribing deficits to dilatory participants. Collective resourcefulness and determination predominated in the many varied instances of individuals stepping up to present material in areas of work beyond their specialist discipline.
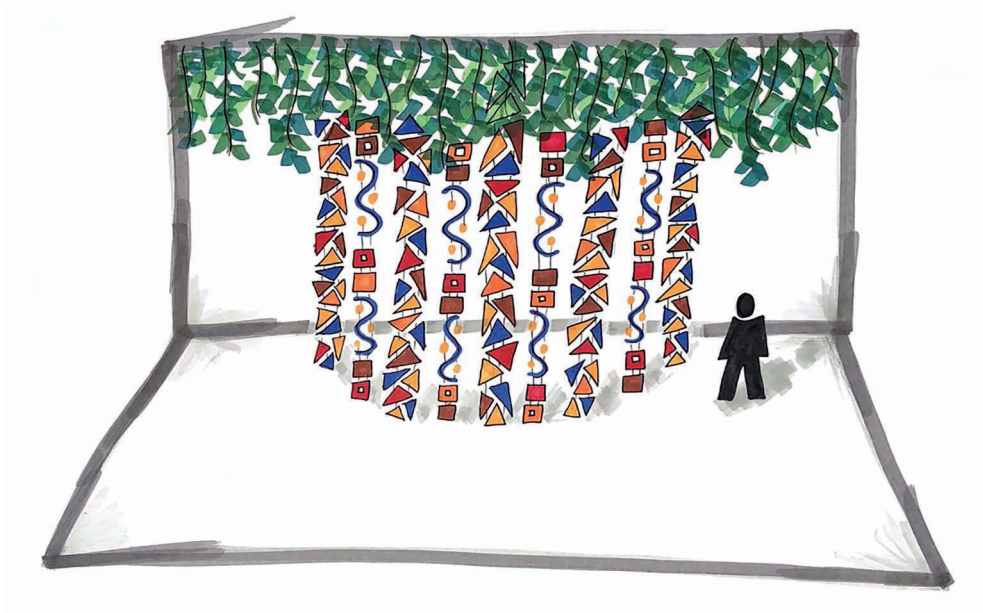
Figure 1. A single central scenic element resolved the setting requirements for *Hlakanyana* with lightness of touch and airy sophistication.

Each day brought surprises, which ranged from declarations of shared enthusiasm for teamwork to embracing an unfamiliar medium, from affirming the value of multicultural collaboration to the celebration of experiment with unfamiliar materials and techniques. The innovative reliance on jewelry design as a catalyst for set and costumes was demonstrable, and may be attributed to the predominance of patterned surfaces that characterises African arts and crafts. The magnification of small motifs might also be a consequence of a lockdown focus on minutiae. Group 7 presented a gloriously bold design based on enlarged shapes of dangling earrings in a whimsical alternative to giant beads strung together as dynamic curtain.

Two separate instances of unexpected declaration of individual contributions to collective achievement (articulated in quantitative and qualitative terms) surfaced the next day. First, in the interests of fair evaluation and transparency, a tacitly accepted

Figure 2. Costume renderings in process.

group coordinator (rather than spokesperson) drew attention to two individuals who had guided the ideation and development of a folkloric treatment of Hlakanyana. The encomiastic moment was notable for the lack of self-conscious disregard for differences in race, gender and disciplinary expertise. Subsequently, a member of another group acknowledged the formidable rendering skills and design acumen of the peer in executing her ideas. His unmistakable, distinctive autographic mark obviated the need for a confession, which she nonetheless declared as having been prompted by the desire to best serve the group effort – but accounting for these homages is beyond my ambit.

Further surprises awaited. Group 23 showcased a concept developed around the accessories designed by a student who might have discovered a rich seam to mine in future. His investigation of archaic signs systems and symbols had led him to the characters that spell out Nguni language syllables. Having identified the relevant signs that make up the name of the eponymous hero, performing the notion that "new truths may be hidden in plain sight," he amalgamated these shapes in an amulet which the group adopted as a poster icon.

Figure 3. Costume renderings in process.
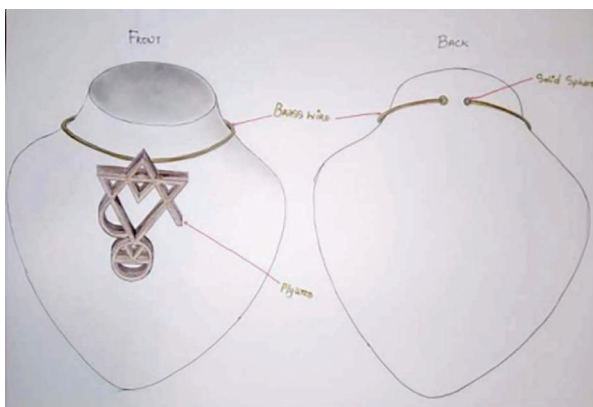
Figures 4 and 5. The five syllables "U-hla-ka-nya-na" wrought together as an amulet.
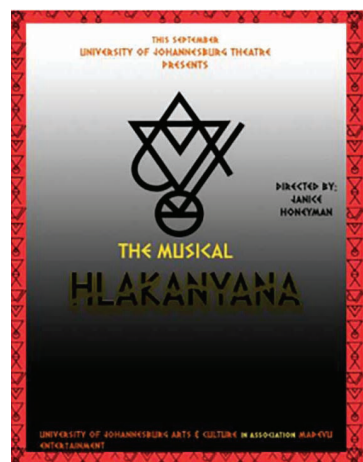
These retrieval efforts re-asserted 'Africanacity' in vivid and contemporary terms, arguably outweighing issues of this particular monogram's authenticity.

Final presentations began on a stage plunged into load-shedding darkness.[13] Undaunted, members of Group 4 presented their striking design, which quoted the traditional medium of linoprint and woodcuts without protest at the inappropriateness or unfairness of these conditions. Together they had resolved the problem: multiple smartphones were manipulated with practised efficiency to illuminate all but the digital material presented on a fully charged laptop. Robust resourcefulness characterised their elegant design, in accord with collective commitment and composure.

Two of the 28 presentations remained distinctive despite an overall lack of design resolution. The chaotic assemblage of ideas and components of both groups attested to the presence of individuals at odds with their peers. A lack of interpersonal social and communication skills underpinned weak execution. For example, a single individual with an insider cultural perspective might have pre-empted the cultural confusion of collective conflation of Ndebele and Zulu patterns and palette. Silence had undermined the value of multiple viewpoints. In another group's presentation, a series of haunting canvases (with some affinity to William Kentridge's highly theatrical multimodal productions and video projections) was swamped by an indecisive and cluttered stage treatment: the value of these images had not been recognised by the team.

A single tough lesson resonated across four afternoons: innovative propositions might be discarded in favour of a 'less good idea' carried forwards by consensus.

A PARTIAL AND PROVISIONAL REFLECTION

The outcomes of *Hlakanyana* 2020 (premiere 25 May) merit a more explicit audit to supplement the foregoing, largely anecdotal, narrative account. The interplay of chance and intention surfaced variously: group allocation had been based only on field of specialist study. Random introductions across areas of specialisation proved a foundation for richly productive professional partnerships. Theatre 101's overarching legacy for 2022 might be enduring interpersonal affinities, understanding the interconnectedness of design disciplines and the value of professional partnerships.

It is axiomatic in South African tertiary institutions that group projects expose individuals to the realities of occupying a specific position within a plural society fraught by complex matrices. Multiple ideological and political perspectives and value systems texture everyday life as much as the overarching project of nation-building and decolonisation. Implementing projects that require collective decision-making in compound tasks structured around the imperative of reaching productive consensus might well be an exercise in inculcating accountable citizenship. Responsibility for delivery is a shared obligation: co-operation is founded on capacities to listen, respect and respond to each other productively. Successful teamwork offers an experiential understanding of what inclusivity and reciprocal interdependence entails, without entirely obliterating the value of individualism or specialist skills. Presentations oscillated curiously between reliance on personal possessive pronouns and proud declarations of joint ownership. Tacit valuation of individual over shared visions frequently corresponded with disjointed creative treatment.

The multiphase process of production design integrates text interpretation, director's brief, generative research and visual referencing to make informed iconographic and stylistic choices.

Subjective interpretations and tastes constantly intertwine with pragmatic considerations of resources and function. The proliferation of reference points informs and enriches specialist pursuits. Frames of references, materials and processes were impressively (verbally and visually) articulated in presentations that paid diverse tributes to South African visual artists whose artworks may have been previously unfamiliar. The uncertain pronunciation of Cecil Skotness' name was a notable example. Seeking inspiration from a repertoire of artworks intersects with the need to transposition or rework images in the medium of dramatic and theatrical value. Creative propositions cannot simply reproduce a found image or artefact: ethical acknowledgement and response to source material may be the essential tools for avoiding artistic plagiarism and map a pathway towards original and innovative design. Distinctions between design and 'illustration' became evident in ways that spatial treatments served the use of a small ensemble, which functions more productively than visual appeal and affectivity.

The imperatives of jointly developing a visual solution required individuals to stretch their own capacities to meet the standard of the group effort. Identifying differences in levels of technical competencies spurred the refinement of individual technical abilities. Groups that had forged a healthy dynamic (consciously developing a coherent action plan to ensure comprehensive delivery collectively) also arrived at finely honed communication and time-management skills. Understanding a shared language and needs, team members repeatedly offered well-timed, silent support to a speaker: the need to master an unfamiliar multimodal challenge instilled an appreciation of developing attentive listening skills and debate.

The thematic (and possibly literal) interplay of light and shadow in *Hlakanyana* urged a wide range of experiments, which included one group testing the efficacy of Javanese shadow puppets for their animated video. Invested research, interrogation and play with materials and manipulation in the spirit of adventure activated latent skills. Aleatory absorption and pleasures in material manipulation – as messy as the processes in some instances may have been – validated the significance of each separate phase of creative modelling, attributing value to phases of a process (rather than solely in product or outcome) on display in the draft material that might otherwise remain hidden.

Negative traits attributed to millennials and Gen Z generations include tendencies to being self-serving, all-entitled and ill-equipped to master unexpected challenges. The disposition and work ethic of these post-pandemic, post-lockdown students suggested otherwise.

Sarah Roberts retired from the University of Witwatersrand in 2020 but remains an associate researcher at the Wits School of Arts, with an expanding publication profile. Teaching, research interests and publications straddle design and developing improvised skills of a performance ensemble. A multi-award-winning theatre designer, she has been associated with notable emergent local productions that have toured nationally and internationally. Career highlights include Nelson Mandela's inauguration, Mbongeni Ngema's *Sarafina!* on Broadway, and John Kani's *Nothing but the Truth*.

1. The text used for script development was Jack Cope's *Tales of the Trickster Boy: Stories of the Trickster Boy, Hlakanyana, and his Adventures in the Great World; Retold from the Original Folktales* (Cape Town: Tafelberg, 1990). See also Noverino Canonici, "The Trickster in Zulu Folktales," https://journals.co.za/doi/pdf/10.10520/AJA10231757_238; idem, "Tricksters and Trickery in Zulu Folktales," https://researchspace.ukzn.ac.za/handle/10413/6350 (both accessed 10 September 2022).

2. Production images can be found at https://arts.uj.ac.za/events/show/metamorph/ (accessed 14 September 2022).

3. The 300 participants of 2022 worked in 28 groups of 10-13 students.

4. Mamphela Ramphele, *Conversations with My Sons and Daughters* (Johannesburg: Penguin, 2012), 61.

5. Malaika Mutere, "African Culture and Aesthetics," in the exhibition and festival catalogue for *African Odyssey*, The Kennedy Center, Washington, April-May 1997,7. Available at https://artsedge.kennedy-center.org/aoi/history/ao-guide.html#culture.

6. I attended this Zoom session: Makhathini linked past traditions with contemporary practices and embodied propositions made in essays contained in Duncan Brown et al., *Oral Literature and Performance* (Oxford: James Currey, 1999) and Liz Gunner et al., *Politics and Performance* (Johannesburg: Witwatersrand University Press, 1994).

7. See Duncan Brown, "Oral literature in South Africa: 20 Years on," available at https://core.ac.uk/download/pdf/157704723.pdf (accessed 10 September 2022).

8. A recording, *The Sounds of Hlakanyana*, is available at https://www.youtube.com/watch?v=Zwi-zqOvijg (accessed 14 September 2022).

9. Mutere, African Culture," 8.

10. Fredric Jameson, *Brecht and Method* (London: Verso, 1999), 31.

11. These policies have come into effect since 1 April 2022. See Greg Nicolson, "National State of Disaster Ends After 750 Days, but Some Regulations Remain," *Daily Maverick*, 4 April 2022, https://www.dailymaverick.co.za/article/2022-04-04-national-state-of-disaster-ends-after-750-days-but-some-regulations-remain (accessed 10 September 2022).

12. The staff panel awarded group marks which were modified by peer evaluations to generate individual marks.

13. Load-shedding affected us from the outset. Fifteen minutes into my first lecture, the theatre was plunged into darkness. Generator back-up powered emergency floodlights a few minutes later, but these bleached out slide projections for the remaining 70 minutes of the session.

PFUNZO SIDOGI

MULTI-HISTORIES: CREATIVE AND NARRATIVE PLURALITY IN GRAPHIC NOVELS EXPLORING INDIGENOUS HISTORIES

In this paper, I examine select graphic novels that narrativise intersecting histories by artists who possess distinct social positionalities and subjectivities. The first is Luke W Molver's two-part graphic novel about King Shaka, *Shaka Rising: A Legend of the Warrior Prince* (2017) and *King Shaka: Zulu Legend* (2019). This epic illustrates King Shaka's rise to power and his unmatched conquering pursuits that helped form the Zulu Kingdom. The second case study is Zinhle (Zhi) Zulu's – hereafter Zhi Zulu – part-historical, part-futuristic graphic novel *The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom* (2019), which visually narrates the story of Nandipha, a superhero whose identity is inspired by King Shaka's mother, Nandipha, and the influential women in Zhi Zulu's life. I am specifically interested in how the positionalities of these two comic artists – Molver, a white man, on the one hand and on the other, Zhi Zulu, a black woman – influence their artistic approach, narrative arc, content selection, stylistics and overall treatment of indigenous Zulu histories. Using the notion of pluri- or multi-histories, I argue that these distinct but convergent comic book explorations of the interlinked lives of King Shaka and Nandipha are poignant artistic exemplars of how indigenous histories should always be retold in the plural.

Settler colonial societies like Canada, New Zealand and South Africa are confronted with the imperative of advancing redemptive de-colonial histories, especially as it pertains to their indigenous peoples.[1] More recently in South Africa, graphic novels have been instrumentalised to translate the complex and convergent pasts of those who were brutalised by colonial and apartheid encounters. Among others, Richard Conyngham's *All Rise: Resistance and Rebellion in South Africa 1910–1948: A Graphic History*,[2] Umlando Wezithombe's *Steve Biko*[3] and, perhaps most famously *Nelson Mandela: The Authorised Comic Book*[4] series illustrate key moments and role players in South Africa's liberation struggle. While globally popular forms of comics like anime remain an underground subculture in South Africa and Africa generally,[5] and a distinct and identifiable genre of South African comics is difficult to decipher,[6] the intensification in the production and circulation of homegrown comics specifically focussed on the country's histories is praiseworthy. Many of these emergent Afro-comics that showcase either real-life or fantastical afro-superheroes[7] aim to subvert antecedent Western depictions of indigenous Africans that "devalue both the peoples and the cultures depicted in them."[8]

The tendency to instrumentalise comics to serve certain socio-political and cultural ideals is not unique to South Africa. Globally, especially in settler colonial societies, comics have been harnessed as tools for nation building and the construction of ethnological unity.[9] Comics are profoundly influential communication tools because they transmit knowledge through casual learning, giving them "a great deal of potential for the teaching of history."[10] But as Chimamanda Adichie famously warned, much harm can be done when monolithic narratives are transmitted in perpetuity, especially across generations.[11] Thus, it is argued in this paper that the inventive (re) discovery and rewriting of illusive indigenous histories must privilege multi-voices and subjectivities over the singular master narrative.

MULTI-HISTORIES = PLURI-HEROES

The other implicit danger in telling a mono-story is that of lionising and immortalising one heroic figure for triumphs that took collective effort to realise. In the context of post-apartheid South Africa, the over-representation of the solo heroic saviour – who is almost always male and created by artists who are also almost always male and white in their positionality – is commonly seen in public art projects where sculptures of historical indigenous leaders like King Shaka Zulu, King Sekhukhune, Chief Tshwane and others have been commissioned.[12] The temptation to exceptionalise these historical figures is perhaps most evident in Nelson Mandela's comic translation of his *Long Walk to Freedom* autobiography. In the comic we see the manufacturing of "Mandela's serial, contingent, and strategic performances of self into destiny."[13] While it is artistically and narratively acceptable to romanticise the biographies of Mandela and other important historical figures from indigenous African societies, the limitation in the types of non-diverse stories and positionalities of the storytellers is a major concern.

Biography, as an important secondary historical source, enables comic artists to "emphasize the expressionistic experience of historical events."[14] Biography enables the narration of personal and highly emotive accounts of major historical events. As part of a wider push to liberate educational content relating to South African history from its colonial architecture, the recent popularisation of biographical graphic narratives that celebrate important indigenous leaders from South Africa's history is valuable. Yet it remains a problem that these biographical renderings of critical indigenous histories are being mainly told by white creatives – mostly men – who have ease of access to the various comics publishing domains and opportunities in South Africa. Animating indigenous histories, where so-called hard, scientifically verifiable evidence is at a premium, cannot be approached using monolithic accounts by artists emanating from non-diverse positionalities. In the same way that cities evolve as a palimpsest, there needs to be an appreciation for "the nonlinear trajectories, discarded alternatives, and legacies from the past"[15] when producing biographical comics.

Accepting the in-built fictional and imagined nature of comics, I am not so much advocating for the historical accuracy of biographical graphic narratives, but rather for the cultivation of alternative, visionary and varyingly discursive accounts of histories that remain contested and illusive. South African audiences require comics that showcase multi-ethnic and multi-cultural pluri-pasts and pluri-futures. The creation of pluri-histories through multiple voices will bring about new heroes, as seen in Zhi Zulu's veneration of Nandipha. But perhaps most significantly, the greatest benefit of these pluri-storied historical comics is their ability to cultivate curiosity about history itself because, as Matthew Pustz has argued, comics focussed on history "help readers develop the skill

of historical thinking."[16] Commenting on the Steve Biko graphic narrative biography, Nic Buchanan, creative director at Umlando Wezithombe, explains that the comic book is desgned to ignite this thirst for historical thinking among readers so that they can "learn more about Steve Biko,"[17] as opposed to seeing the comic as the only authoritative account of Biko's complex life.

MULTI-HISTORIES TOLD THROUGH MULTI-SUBJECTIVITIES

The need to approach history through multi-subjectivities, especially as it pertains to comics, is predicated on the realisation that any comic strip or story is paradigmatically layered with the subjectivity of its maker. Kai Mikkonen observes that the first and most recognisable imprint of the author's personality in a graphic novel is "detected in the use and combination of stylistic conventions such as the graphic line, lettering, or the spatial organization of the page."[18] In other words, the author's unique artistic signature is the most direct insertion of their character into a narrative. This signature also influences how the various subjectivities of the main characters in the actual comic materialise. The comic artist's subjectivity is further woven into the narrative when they assume the voice of "the autobiographical narrator" who articulates the context or chronology of events "alternately in the caption boxes and the balloons, thus alternating between intra- and extradiegetic positions. The different levels of verbal narration allow the autobiographical narrator to relate the story from two different temporal perspectives at once and reflect on both the time of the events and the time of the telling."[19] Since the influence of the artist on the narrative cannot be redacted, Mikkonen concludes that "the challenge is to know the degree of subjectivity of vision from images alone."[20] Even the most astute readers of history-based comics are not always able to appreciate the nuances between the author's creative voice – coded in the image, text and style – and the voice(s) of the historical character(s).

As noted above, the two graphic narratives under consideration in this article were produced by artists with distinct positionalities and subjectivities. Their gender, race, ethnic and, most critically, lived differences influenced their artistic and narrative approach to histories of the Zulu Kingdom, one of southern Africa's most storied indigenous nations. The specificities of the actual class, educational[21] and social histories of both Molver and Zhi Zulu do not concern me here as much as the meanings that their racial, social and gender classifications imprint on their respective comics. In the spectrum of South African life, to be white and male – versus being black and female – means that these individuals represent a certain type of historical and present-day positionality that speaks to wealth, privilege and infinite opportunity on the one hand, versus deprivation, abuse and precarity on the other. The key is to acknowledge how these distinct positionalities filter into the style, content and narrative execution of the comics these artists have authored.

At the heart of nurturing comics by artists from a plurality of positionalities is the need to cultivate stories about indigenous peoples by indigenous creatives. Randy Duncan and Matthew J Smith make a compelling case for what they term "native comics" in the global production value chain of comics: "The richness of the comics scene in the world today owes much to both the fostering of native comics and the interchange of ideas among different traditions. Their ability to help build a given culture's identity and the propensity they have to build bridges between cultures are but two more manifestations of the power of comics."[22]
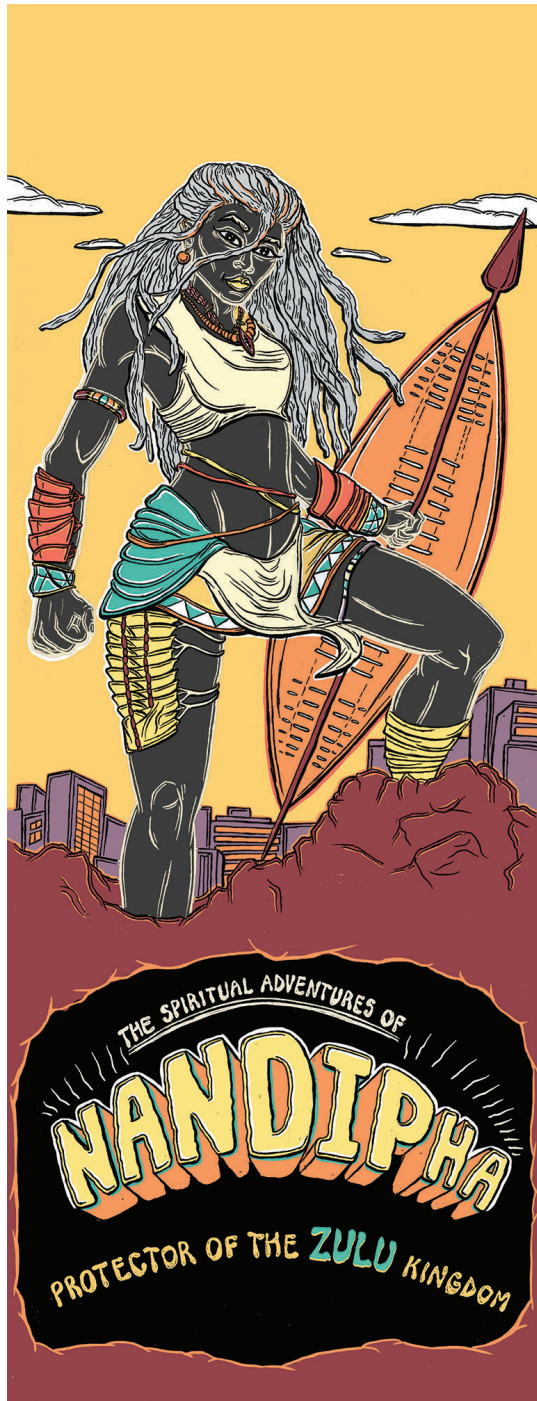
This power to build bridges through the interchange of ideas is essential to multi-ethnic settler colonial societies where fault lines predicated on race, religion and ethnicity still dominate public, political, economic and cultural affairs.[23] Thus the focus on Zulu history in the two comics under review is particularly poignant. Focusing on one of the dominant black cultural groups in South Africa, Zulu historiographies are possibly among the best documented of works dealing with the indigenous peoples of southern Africa. The growing wealth of literature written by specifically isiZulu-speaking historians who explore the pasts of Zulu people dates back to Magema M Fuze's *The Black People and Whence They Came* (originally titled *Abantu Abamnyama, Lapa Bavela Ngakona* in isiZulu), first published in 1922, a text that provides an expansive history of Zulu people. Although Hlonipha Mokoena has described the book as "an anti-climax" that does not possess the "depth and detail" found in some of Fuze's other writings published in the *Ilanga Lase Natal* newspaper during the early twentieth century,[24] the book remains a profound contribution to Zulu historiography. Although seen as anticlimactic, Fuze's text is an important imaginative recovery of Zulu history from lived experience. I posit that Zhi Zulu's and Molver's graphic narratives are equally important and valuable contributions to the creative archive and discourse on Zulu ontologies because of the narrative plurality they provide to this ever-evolving history.

Figure 1. Zhi Zulu, *The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom*, 2019. © Zuluvisual. (Image reproduced with permission from the artist)

INSERTING ZHI INTO ZULU HISTORY

During the 2019 Design Indaba showcase in Cape Town, Zhi Zulu exhibited the cover art for a graphic novel titled *The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom* (Figure 1). Though incomplete at the time and an offshoot of her Master's degree research project, the concept and execution of this comic book drew immense public interest and catapulted the already award-winning illustrator to eminence as an emerging comic artist. I, too, was intrigued by Zhi Zulu's intentional elevation of Nandipha, King Shaka Zulu's mother, to the status of hero in the retelling of modern Zulu history from the eighteenth century. Zhi Zulu estimates that her narrative is comprised of 40 percent historical information and events, while the remaining 60 percent is imagined.[25] Though Nandipha is a clear reference to one of the leading Zulu Kingdom matriarchs, the character is also inspired by Zhi Zulu's niece and other black women she admires. Thus, the comic is decidedly modelled on Zhi Zulu's own life experiences and visions of the world she occupies. Set in a contemporary but futuristic urban context where minibus taxis roam the streets, this comic book is primarily written for an urban-based, youthful black audience. Zhi Zulu notes that her work seeks to be relevant for this generation, concluding that "documenting culture is about the now. It's not necessarily about how it is relevant, but rather how do we *make* it relevant?"[26]

According to Zhi Zulu, the history narrated in her comic was retrieved by reading existing literature by the likes of Credo Mutwa, a famed philosopher, artist, writer and historian, and the stories she extracted from her grandmothers and uncles.[27] While invested in the history of

Figure 2. Zhi Zulu, *The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom*, 2019. © Zuluvisual. (Image reproduced with permission from the artist)

Zulu people, Zhi Zulu, an isiZulu speaker herself, did not want to limit her comic book to yet another retelling of well-documented histories, but rather to generate an alternative future for the Zulu nation in context. The creative and narrative gestures Zhi Zulu uses in the comic speak to the hopes and fears embedded in the current South African climate, where difficult histories and yet unwritten futures collide. *The Spiritual Adventures of Nandipha* is both a homage to the roles black women fulfil in modern urban African societies and the triumphs of historical figures such as Nandipha, whose memorialisation remains peripheral. In the comic, Nandipha becomes the hero when she is dreaming (Figure 2). It is only when fantasising that her true powers and purpose are activated. In an interview with Lukanyo Mbanga, Zhi Zulu highlights the importance of enacting the overdue memorialisation of black women such as Nandipha imaginatively and as dreams, because, as happens in the comic, "the realms do end up merging and she becomes a hero in real life, but at-heart I wanted to draw on how, [sic] what happens in the realm of dreams and unconscious states inform what happens in the world around us."[28]

Figure 3. Zhi Zulu, *The Spiritual Adventures of Nandipha: Protector of the Zulu Kingdom*, 2019. © Zuluvisual. (Image reproduced with permission from the artist)

Zhi Zulu is emphatic in declaring that the comic book is a celebration of her "culture, concepts and stories" and, as she puts it, this is the "absolute best part of my life and I want to express that."[29] This desire to eulogise her Zulu-ness is an essential creative strategy that inserts a black woman artist of Zulu descent into the pantheon of African storytelling. Furthermore, the hyperbolic glorification of Nandipha as the hero who protects not only herself and those she loves, but the entire Zulu Kingdom, proclaims black women as adventurers and conquerors. Nandipha is illustrated as a warrior princess clutching a spear and shield (Figure 3). This uncommon representation of a black woman as Zulu warrior is suggestive of redemptive creative subjectivities that unsettle the trope of black women as peripheral players in indigenous Zulu history and life. Narratively, Zhi Zulu's comic is a first-person account of Nandipha's story, where the character's experiences and personality are intertwined with the narrator's voice.
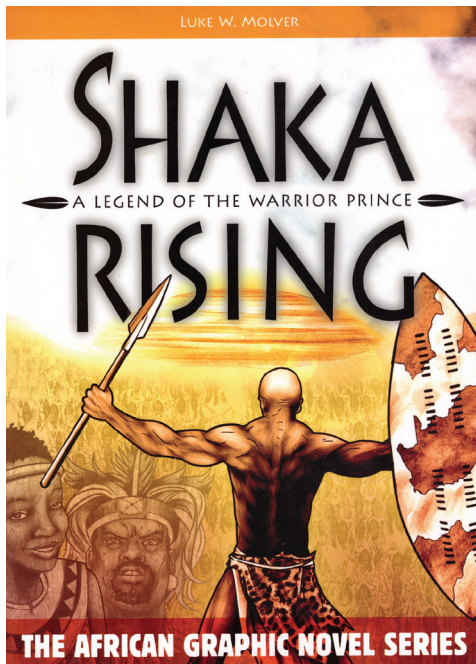
Figure 4. Luke W Molver and Mason O'Connor,
Shaka Rising: A Legend of the Warrior Prince, 2017.
© Story Press Africa: Pietermaritzburg.
(Reproduced with permission)

Figure 5. Luke W Molver,
King Shaka: Zulu Legend, 2019.
© Story Press Africa: Pietermaritzburg.
(Reproduced with permission)

NOT A LUKE-WARM TAKE ON ZULU HISTORY

While Zhi Zulu's motivations for creating her comic were intrinsically personal, Luke Molver, also an award-winning artist, was on the other hand commissioned by Story Press Africa to a produce a graphic novel series about King Shaka. As a self-published author who had not worked with an established publishing house before, Molver was intrigued by the challenge of weaving into life a graphic narrative about an iconic black historical figure. In an interview with Gushwell Brooks, Molver acknowledges that this venture was not something he would have initiated independently. He was seduced into it by what he termed the "story-telling possibilities" that the legend of King Shaka presents.[30] For Molver, while King Shaka's story is well documented, there was enough room for inserting fictional and imagined components into his legend. Unlike Zhi Zulu's reliance on her lived experience and oral accounts from family members about Zulu History, Molver engaged in intense study to ensure that he did not "write down" to his readers.[31] I believe that Molver's positionality as a white male artist influenced this careful, thorough and sensitive approach to the historical specificities of King Shaka's life.[32] This is by no means to suggest that a black artist would not have done the same, but it is a pragmatic acknowledgement of the minefield of criticism that would entrap any 'outsider' narrator who is seen to perpetuate colonial tendencies of misrepresenting African histories. Any slippages in historical accuracy, even within a comic book story, would have been attached to the artist's whiteness, compromising the otherwise artistic and narrative accomplishments of Molver's work.

In 2017, *Shaka Rising: A Legend of the Warrior Prince* (Figure 1) was published, promptly followed by *King Shaka: Zulu Legend* in 2019 (Figure 2). These two expansive graphic novels unravel the early life, ascendency to power, reign and final demise of King Shaka. Like the Mandela and Biko biographies, these two novels are educational enhancements of King Shaka's story, which include valuable information at the start and end of the comic books proper as contextualisation and amplification. While celebrating the founder of the Zulu Kingdom, Molver's comic also humanises King Shaka by making his life's story relatable. Unlike the contemporary urban setting of Zhi Zulu's comic, Molver's epic is staged during the early nineteenth century in KwaZulu-Natal. Using pencil-and-ink storyboarding, which was then coloured through digital processes, Molver creates a visual mood that transports King Shaka to the realm of the gods while keeping him mortal. Though there are moments of violence, scheming and betrayal in the comics, the scenes are cinematic, with lush, near-fantastical landscapes and beautifully adorned Hollywood-like characters.

Of further interest are the narrative and stylistic choices Molver infuses into the comics. While Zhi Zulu is more direct in the inclusion of her subjectivity in her comic, Molver adopts the guise of what Mikkonen describes as the "'impersonal' heterodiegetic narrator"[33] whose voice is only evident through the Gogo (grandmother) who tells the story of Shaka to a group of children sitting around a fire. That the story of King Shaka's life in the comic is being told by a woman is an important artistic and narrative choice. That said, while Molver's treatment of female characters in the novel is sensitive and historically sound, it nevertheless privileges the life of King Shaka over his matriarchal influences. The inclusion of King Shaka's mother, Nandipha, is fairly consistent with the peripheral role that women assume in historical narratives of this kind (Figure 3). Though her part is brief, she is shown as a wise and comforting voice for King Shaka. In the final analysis, I believe that Molver's depiction of King Shaka's life was not negatively influenced by the artist's positioning as a white man. Rather, it is this very whiteness that enabled the creation of an epic that celebrates indigenous Zulu histories in redemptive ways.

CONCLUSION

Artistic subjectivities influence the tenor and character of comics' content. To make the case for the production of pluri-histories when dealing with ontologies of indigenous peoples in settler colonial societies, I deliberately chose case studies produced by seemingly disparate creatives who have varying gender, racial, and cultural dispositions. Zhi Zulu's and Molver's advancement of a plurality of black heroes and lead characters is praiseworthy and as Adilifu Nama contends, black superheroes "serve as a source of potent racial meaning that has substance and resonance."[34]

Using various visually persuasive techniques, both comics display a creative sincerity and commitment to multi-African histories and futures that transcend the classifications of gender and race. In these graphic narratives, we are not only introduced to the subjectivities of the key protagonists, King Shaka and Nandipha, but we see these complex historical figures as projected through the eyes of two very different artists. Yet, implicit in both stories is the sense of belonging, affinity and pride relating to indigenous histories of the Zulu Kingdom in its imagined disposition, as seen through the multi-subjectivities of the authors and the characters they represent to us.
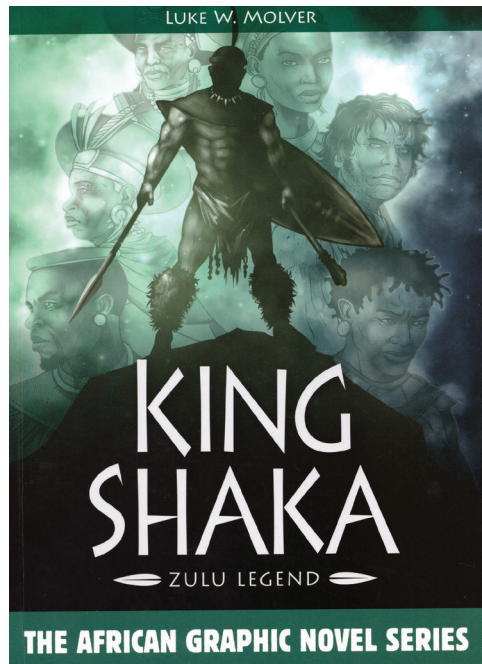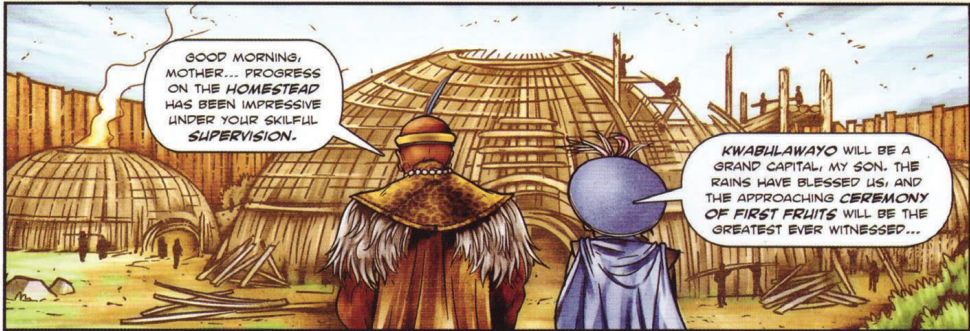
Figure 6. Luke W Molver, *King Shaka: Zulu Legend* 2019.
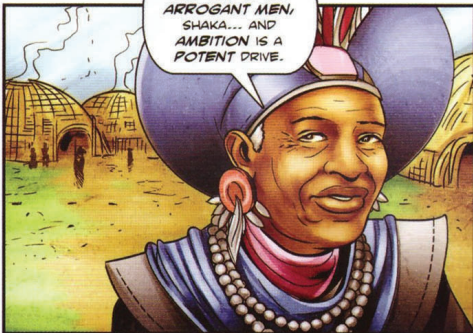© Story Press Africa: Pietermaritzburg. (Reproduced with permission)

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25. Zinhle Zulu, online interview with author, 26 November 2020.

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27. Ibid. Zhi Zulu also credits EA Ritter's iconic text, *Shaka Zulu: The Rise of the Zulu Empire*, first published in 1962, as one of the sources she read on Zulu history.

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30. Gushwell Brooks and Luke Molver, "Shaka Rising: A Comic Book About the Life of Shaka Zulu," *Radio 702*, 23 September 2018, http://lukemolver.com/interview-radio-702/ (accessed 12 May 2022).

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32. The inclusion of forewords by Professor Mbongeni Z Malaba and Dr Sibongiseni Mkhize adds a degree of gravitas and peer review from authoritative scholars of Zulu history.

33. Mikkonen, "Subjectivity and Style," 120.

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DELAS SANTANO AND HAROLD THWAITES

THE SOUL OF THE MASKS: A JOURNEY THROUGH MAH MERI INDIGENOUS CARVINGS

INTRODUCTION

As part of their rituals, one of the native tribes of Malaysia, the Mah Meri, carve wooden masks and statues. These masks and statues are used in prayer rituals and ceremonies, and as a way of passing on the culture and heritage of the tribe. The carving of these artefacts was studied to learn about the Mah Meri way of life. With the help of photogrammetry, we digitised the Mah Meri masks and statues and wrote down the stories behind each one. These folktales say a lot about how the Mah Meri treat nature and how much they value it. From this data set, we wanted to see how augmented reality, installations and transmedia storytelling could be used to disseminate and preserve Mah Meri culture and history. We tried to bring the stories that were told to us back to life in a visual format, using the screens on our everyday devices. We turned the oral stories into digital sketches, which were then animated and displayed in an installation. Then, those narratives were changed so that the Mah Meri's stories can be used in augmented reality story books. We want to show and share this multimedia representation of their folklore with the help of the digital container we have placed them in. The initial aim of the research is to immerse the wider public in the culture and heritage of Mah Meri. In disseminating this "research–creation," we also want to see what this multimedia output could give back to the Mah Meri community and help them keep their communal knowledge alive and pass it on to the next generation.

BACKGROUND

The Mah Meri is one of the indigenous tribes of Malaysia. They live relatively close to the urban region of Klang, and it only takes about half an hour to drive to the capital city of Kuala Lumpur from there. The culture and heritage of the Mah Meri people is manifested in tangible objects that are supported by the intangible values of their tribal folklore.

Although the Mah Meri adhere to an animistic belief system, some of them have embraced other religious traditions. On the day designated for honouring the tribal ancestors, which is celebrated once a year, the locals get together to pray for and receive blessings from their shaman.

Figure 1. A Mah Meri family praying the night before ancestor commemoration day.

The presence of spirits in the Mah Meri masks and statue sculptures is an essential component of this animistic belief system. These carvings are meant to illustrate the mythology and beliefs associated with tribal spirits. For instance, the gibbon mask recounts the legend of the spirit gibbon. In this tale, a hunter inadvertently kills a gibbon while out in the forest and, in order to satisfy the spirit, the hunter is required to somehow replace the animal. These objects are carved from wood that is found in tribal settlements and along the rivers where they live. Both hardwoods and soft wood are used for these carvings.

The reality that many carvers are forced to look for work outside their communities in order to support their families is the primary barrier preventing the Mah Meri from passing on their carving skills to future generations. This poses a threat of extinction for the art form. However, the Mah Meri community does receive the benefits of being close to urban centres, providing them with access to employment opportunities as well as educational resources. While Mah Meri people travel into towns for jobs in the factories, as cleaners and janitors, most are still dependent on income earned from fishing and the collection and sale of palm tree fruit for making palm oil.

The community have schools in their villages, and a few years ago the government assisted them in organising a craft workshop so that the Mah Meri could keep producing their traditional masks and statues, despite some people having made the decision to look for work in the cities. Samri, one of the mask carvers, told of a company contracted for cleaning work in Putrajaya where his mother used to work. The company would provide vans to pick the workers up and drive them to Putrajaya, a 40-minute journey.

Figure 2. Soft wood and hardwood mask and statue carving by the Mah Meri.

In this research-creation exploration, we conducted audiovisual interviews with two master carvers in the Mah Meri village in Carey Island, Selangor, Samri and Kemi. We had met Samri and Kemi through previous encounters with museums that hosted events on indigenous arts. These interviews were the first step in collecting stories and other information about their culture. After learning about Mah Meri folklore through their artefacts, we then designed a framework for digitising the masks and statues including the processes involved. These objects are the tangible part of their culture, and their significance and value is compounded by the intangible processes, rituals and beliefs sited in the Mah Meri community.

After interviewing Samri, we commissioned him to make a number of masks and statues and sought his permission to document the whole process from the living tree to the finished product. We also asked him to tell us about the stories associated with the masks and statues that he was making. The carving process was done in stages as we wanted to digitise the artefacts as the work progressed using photogrammetry, enabling us to generate 3D objects from photographing the masks and statues through 360 degrees. We recorded the interviews in order to collect data including the carvers' biographies, the rituals involved, the process of carving and the traditional stories behind the masks and statues. In the research-creation approach, we strongly believe that the collection of such data is a crucial part of the process. The resulting output, whether augmented reality, virtual reality, documentaries or exhibitions, are produced on the basis of the digitised data.

Our interview with Samri and his family revealed that most of the children living in the neighbourhood leave school early, resulting in local people having very few employment opportunities other than manual labour. After further discussion with Samri and his wife, followed by Kemi and his wife, we found that not only did local children lose interest in formal education, but the parents did little to encourage it. However, Samri was doing his best to encourage his two daughters to do well in school and to enrol in higher education programmes so that they could go on to university and eventually achieve a higher standard of living for themselves. In contrast, Kemi, who is Samri's uncle, had asked his eldest son to give up his studies and learn how to sculpt masks and statues for the Mah

Meri community. One of Kemi's daughters studies geriatric physical therapy at university, and she confided to me how her brother had wanted to learn motorcycle mechanics, but had dropped this interest to learn carving, as Kemi had wished.

Samri is a well-known Mah Meri carver, not just in the local community but across the country. His abilities as a sculptor are regularly put on display in national and international exhibitions and workshops by the Ministry of Culture and its affiliated organisations. Prior to the outbreak of COVID-19, he was able to sell two to three masks per month. The pandemic has reduced the volume of orders even for a carver of his renown, and yet his carving is his sole source of revenue.

During my conversations with these two carvers and their families, everyone agreed that the prospects for this craft are not encouraging. In addition to passing on the skills involved, the Mah Meri want to make sure that the oral histories associated with the statues and masks are also transmitted. They also want to teach the Mah Meri language to their children to keep it alive. Kemi shared how his brother, who has moved to a town, married someone from outside the Mah Meri community and had forgotten how to sculpt. When the two men met up, Kemi's brother would always express is admiration for Kemi's carving and wish that he could be as good. The former's work and life in the city has not allowed him to pursue carving, even as a hobby, as he does not get the time for it. Kemi said that his brother's fingers are "stiff" after so long away from carving.

We have high hopes that our project will inspire the Mah Meri community to embark on a new journey aimed at protecting their heritage and culture by utilising digital media and our inventive approach to storytelling.

THE MASKS AND STATUES

Mah Meri folklore, which includes the oral traditions that have been passed down over centuries through masks and statues, was our entry point into working with the community. The "lore" in folklore refers to the acquisition and expression of cultural knowledge. This term refers to the representation of traditional knowledge in a variety of ways including, but not limited to, tales, proverbs, songs, dances, and customs.[1] Word of mouth is the primary means through which traditional tales are transmitted from one generation to the next. Grandmothers reciting stories to their grandchildren or parents reading bedtime stories to their own children and grandchildren are two examples of this. These tales frequently carry important cultural lessons for the reader or listener. The traditional cultural values that folklore embodies are significant enough to have been included within the scope of UNESCO's definition of intangible heritage.[2]

The threat to this type of intangible legacy, here considered as traditional stories, is becoming more and more real. The media utilised by the the Mah Meri in order to tell and preserve their stories are a unique artistic expression that also serves as a representation of Mah Meri culture. However, the stories themselves can be lost as older generations die out. There is a real risk that the heart and soul of the craft will be lost if the subsequent generations who carry on the work do not acknowledge the importance of stories. In addition, the interest of younger generations in these folktales is dwindling since, as a result of the spread of technology around the world, children everywhere are thirsty for the visual stimulation provided by computer screens. This is a serious barrier to keeping a culture's folktales alive.

For the indigenous Mah Meri people of Malaysia, their folktales are intricately woven into the hand-carved wooden masks that constitute the tribe's unique form of artistic expression.[3] The stories that are carved into the masks come from a wide variety of sources and cover many subjects including nature, animals and ancestors. The *Hari Moyang* and the *Puja Pantai* are two examples of prayer rites that frequently involve the use of these masks.[4]

With the help of Peter Crowe's database of Mah Meri masks, we were able to determine whether a given a statue or mask contained the tribe's own unique story. Peter Crowe has compiled a list of the legends that are associated with each individual carving.[5] We then conducted interviews with carvers to elicit more information about the stories incorporated in the carvings so that we could visualise them for our project.

Peter Crowe's 2016 book, *Spirit Carvings of The Mah Meri of Malaysia*, served as the jumping-off point for collecting Mah Meri traditional legends. After that, we verified the information contained in the book with the carvers themselves. There were a few inconsequential changes, but overall the plot and characters remained the same. During the course of this data gathering exercise, we also discovered various additional types of stories involving a mask. For instance, legends about crocodiles are sometimes represented in masks and statues.

RESEARCH–CREATION

Digital media is a technology that can be used to preserve culture and history, whether tangible or intangible assets.[6] Prior to our project, the Mah Meri Indigenous people of Carey Island, Selangor, and the Iban of Sarawak and their *Pua Kumbu* craft had been the subjects of two separate research projects. The history of both these groups is intimately intertwined with craft practices – for the Mah Meri, the carving of masks and statues, and in the case of Iban women, the weaving of *Pua Kumbu* fabrics.

Since 2014, the lead researcher, Delas Santano, drawing on his professional expertise as an audiovisual producer, has been collaborating with members of the Mah Meri community to help preserve and disseminate their traditional stories and culture to a wider audience. Observing the Mah Meri creating these masks and statues, we took care not to disrupt their cultural rituals of carving and prayer. In order to learn about the folk legends associated with the carvings, we conducted audiovisual interviews with the carvers, as mentioned above. Previous research on the Mah Meri community, as well the community's culture and history, has been thoroughly documented by Roland Werner and Peter Crowe. Our research made extensive use of their work as a starting point for investigation of Mah Meri carving practices and traditions. When we digitised the masks and sculptures, we made sure to capture each stage of the work so that we could use it in our documentation of the carving process. This material will be very useful as learning references for future Mah Meri carvers.

Following the UNESCO convention of 2003, the preservation of cultural traditions has gained increased attention on a global scale. Documenting intangible heritage with the assistance of emerging technologies has proved the most effective method for ensuring its continued existence, as evidenced by the projects listed in a research article by UCL Institute of Archaeology, London.[7] Scholars have argued that archivists should view culture as a resource that can be reproduced and reinterpreted multiple times, as opposed to digitising objects in a static form, as has been the trend in recent years.[8]

Our fieldwork led to the acquisition of a wide variety of data, including audio, audiovisual recordings and three-dimensional measurements. In order to reproduce the artefacts in a three-dimensional format, the Mah Meri carvings were scanned. We began by making observations, and then moved on to recording the carvers at each stage of producing the masks and statues.

As a result of this research, we have gained a clear idea of the central message of each community's narrative, as well as its significance, cultural values, the metaphors and symbols it employs, and its continued survival in today's rapidly interconnecting digital world. The purpose of this study is to record these embodied stories in an innovative and aesthetically pleasing digital format for the sake of the Mah Meri community and its culture in the future. The resulting exhibition was designed with the expectation that visitors from outside the community would be the main audience, with the goal of immersing them in Mah Meri culture and heritage. After completing the exhibition, we found that we could readapt it specifically for the benefit of the Mah Meri community.

After gaining an in-depth understanding of the stories and giving each one a digital production treatment that would appeal to a general exhibition audience, we selected a handful of tales that are unique to each community. We then transcoded them into a visual interpretation.[9] Following the intitial interviews, we consulted Samri and Kemi on the Bahasa script used in the folktales, with a view to having Samri rewrite the texts in the Mah Meri language, which he could then read aloud as narrator of the stories.

A variety of audiovisual storytelling techniques are being considered as a means of preserving these traditional stories. In the long-term strategy envisaged by our research, augmented reality, virtual reality, projection mapping and immersive storytelling are all areas that we intend to investigate. In the original version of the exhibition, a story room was designed to transmit the animatics stories. Within this room, a flat-screen 65-inch monitor was installed to play back the stories. The carver Samri narrates each story in the Mah Meri language in the animatics that we created to accompany the graphics.

In order to produce a visual representation of these folk stories, we produced animatic versions of the six selected stories, illustrated by an artist utilising both digital and analog techniques. Following consultation with the storytellers, we followed the thematic look and feel of the particular culture from which the stories originated to achieve the desired art direction of the illustrations. For instance, in the Mah Meri stories, we made extensive use of earthy tones and textures that resembled tree bark.

Next, computer animation was used to bring the drawings to life, and a narrator told the story while a variety of carefully selected sound effects were used to make the presentation more engaging. In our first version of the "animatics," we had Samri narrating the story in the Mah Meri language, with English and Bahasa Malaysia in the subtitles. In later versions of the folktales, as a three-screen installation and AR book, only English was used, with Bahasa Malaysia and Mah Meri language versions planned for future revisions.

Hoping to create a fully immersive experience for the audience, in addition to exhibiting the stories on a single conventional screen, we also exhibited them in a multi-screen format consisting of three screens. It was decided to construct an augmented reality book in the form of a "comic book," which was given out to guests with the aim of helping Mah Meri to re-experience their

traditional stories, albeit in an unfamiliar medium (see Figures 3 and 4 for examples). One example of this is a single story told in three different formats: an animated short film played on one screen, an animated short film using three screens, and an augmented reality comic book. Each of these formats and media produce a unique storytelling experience for the audience or reader.

In the comic book, the many tales were condensed and presented using text bubbles as in a standard comic book. Augmented reality (AR) was used to stimulate the reader's imagination as Mah Meri visitors read and analyzed the visuals. For instance, where the text reads "thunderstorms swept the village," accompanied by an illustration, the AR delivered the thunderstorms along with appropriate sound effects. The story panels are formatted in a comic-like arrangement that fits on a single sheet of A4 (or two pages of A5 side-by-side). Text boxes were provided to narrate the story in a manner analogous to the narration in the exhibition; however, the text boxes used fewer words. To get a better grasp on the narrative, readers can both read the subtitles and view the images included in each panel. The augmented reality content is only presented in a few of the panels in a given story; these include a short animation and sound effects that, when combined, serve to enhance the storytelling experience. The augmented reality book is not intended to provide a format that is an exact reproduction of the installation; as a result, visitors who viewed the entire animatics in the installation will still have a unique experience with the book.

Figure 3. Augmented reality application for the Mah Meri (mask carving) storybook – two sample pages.

Figure 4. Augmented reality version of a scanned and digitised mask.

DISSEMINATION TO THE WIDER COMMUNITY

The exhibition was designed mainly to introduce Mah Meri culture to other Malaysians from different ethnicities. Having the exhibition at a university gallery, near Kuala Lumpur, made it more accessible for urban residents. At the launch of the exhibition, the Mah Meri community turned out to see the results of all the interview sessions with the community and the cameras moving around the village during ritual prayer sessions. We wanted to share what digital media might contribute to the Mah Meri community in terms of preserving its culture and heritage. We found that we needed to create a new version of the exhibition that could serve the Mah Meri community specifically, preferably being shown in Mah Meri villages.

The development of new digital technologies introduces a new angle into this conversation. These technologies have the potential to increase active, two-way engagement with local history and make it easier for people to access it.[10] The use of digital tools makes it possible to collaborate on the construction of exhibitions, oral histories and other types of display and archives that are based on personal memories, collective recollections and interactive elements.[11]

Our research–creation process resulted in the installation of a transmedia display in a public gallery in 2013 and again in 2017. In 2013, the gallery was set up to showcase works based on digital storytelling, augmented reality, virtual reality 360 and rapid prototyping. As a result, thousands of people unfamiliar with the culture of the Mah Meri were able to gain some insight into it and see some of their artefacts.

Figure 5. Mah Meri children view folklore animatics in the 2013 exhibition at the University's Art Gallery.

Figure 6. Mah Meri families watching the installation video depicting the carving process.

In 2017, part of the "Transmedia" exhibition was set up to highlight the data acquired from the Mah Meri research project, and we created an AR comic book featuring two stories based on two Mah Meri masks and statues. In contrast to a more traditional visual narrative, which is time-based and is typically played back on a television screen, the AR versions were developed to provide users with a unique and novel viewing experience.

Both productions were done in English which, given that most members of the Mah Meri community are fluent in Bahasa Malaysia or their own Mah Meri dialect, was of limited benefit to the Mah Meri community.

It was at this location that we determined that the Mah Meri required their own "culture center." The younger generations, as in every other culture, are having trouble coming to terms with their Mah Meri identity. The use of social media on their mobile devices will only accelerate this process, as most of the content on these platforms uses Bahasa Malaysia or English.

The authors both have previous work experience in the field of museology, which involved the dissemination of information. In this particular case, the use of experimental museology is designed to help museums better deal with the challenges the Mah Meri face when attempting to strike a balance between the educational and entertainment aspects of their work. This is accomplished by aligning the practices followed by museum professionals with interdisciplinary academic discourse. Experimentation is not a novel concept in the field of museology or in the work done by museums, of course. Both fields have always relied on novel approaches to disseminate information in an effort to communicate with large and disparate audiences while simultaneously raising concerns about equality, diversity and rights. Experimentation has allowed museums to generate fresh ideas for exhibits, as well as new methods of communicating with a general audience.[12]

CONCLUSIONS AND RECOMMENDATIONS

There is a significant window of opportunity to investigate the possibility of establishing a permanent museum or gallery for the Mah Meri communities. This would serve as a repository for Mah Meri history and culture, which we could further document and co-create with the Mah Meri people as a means of keeping it alive for future generations. During the course of our fieldwork, we noted that the carvers frequently relied on Mah Meri carvings that were documented in an outdated book that was published in the 1970s. If that volume was to misplaced or damaged, and the carvers had passed away, then younger generations would not be able to continue the craft. In addition, maintaining a consistent income is another issue that needs to be discussed between the communities and the Department of Indigenous Community in Malaysia. Mask and statue carving is hardly viable as the sole source of income for local families, given the unpredictability of tourism numbers and firm orders for carvings. We intend to expand the data that we have digitised and produce a proof-of-concept "museum" that we hope can be set up permanently for the benefit of the Mah Meri communities. We also aim to involve the younger generation in the research project, that we hope to expand into a physical, permanent venue and a digital archive that the Mah Meri can access into the future. The younger generation are the ones that use digital technology in their daily lives and will be the main benefactors of this projected digital hub of Mah Meri culture and heritage.

Delas Santano has been working in creative media for the past 10 years, contributing knowledge from academic, research, and practical aspects. Since 2020 he is a Senior Research Fellow in the Centre for Research-Creation in Digital Media, School of Arts at Sunway University.

He is also involved in immersive content creation that utilizes augmented reality and VR360. He has been involved in transmedia exhibitions, namely *Mah Meri Unmasked, Textile Tales of Pua Kumbu, The Boatbuilder of Pangkor Island*, and *Transmedia exhibition*. The exhibition utilizes various digital technology that was showcased through various format of application. He has extensive experience in video content production, graphic design, and video editing leading up to aerial drone, VR360, exhibition design, and culture and heritage. In addition, Delas has a great deal of experience in teaching, and research and is now Programme Leader for Master of Arts in Visual Communication and Media Studies in the School of Arts. His main research area is audiovisual production with an emphasis on culture and heritage and video production combined with digital humanities.

Harold Thwaites is Professor and Head of the Centre for Research-Creation in Digital Media (CRCDM) at the School of Arts at Sunway University. Originally from Canada, he was a tenured Associate Professor of the Communication Studies Department at Concordia University in Montreal for 31 years. His research and teaching are in: Communication and Media Studies, Digital Heritage, Experiential Media Arts, Audience/user media impact, Information Design, Biocybernetic Research, Media Production and Digital Humanities. Professor Thwaites sits on the editorial boards of the International Journal of Virtual Reality, the Open Journal of Virtual Reality, and the Journal of Virtual Creativity. At Sunway University his current projects include the international Virtual-Augmented Reality Research Network (VARRN), and the CRCDM Hainan Boatbuilder of Pangkor Island, exploring the digital preservation of Malaysian cultural heritage, and museum experiences for the cultural imaginary. He continues to share his passion to innovate new projects and fields of research, with staff and students in Malaysia.

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SABINE CHAOUCHE

LIVE PERFORMANCE AS A MULTIVERSE: FROM THE PRESENT MOMENT TO THE TRANSVERSE EFFECT

> I cannot remember how I finished the scene, because the footlights and the black hole disappeared from my consciousness, and I was free of all fear. I remember that Paul was at first astonished by the change in me; then he became infected by it, and acted with abandon.
>
> Constantin Stanislavsky, *An Actor Prepares*[1]

What are the different interconnected spaces and times in the construction of the character in drama, and to what extent is acting 'live' performances consubstantial with the notion of the multifarious, and especially the multiverse?

According to the *Cambridge Dictionary*, multiverse is defined as "a collection of different universes that are thought by some people to exist at the same time."[2] A universe is "everything that exists," that is, a whole space. It thus represents in a human being layers of sediments composed of feelings, memories, impressions, sensations, words, events – in short, affect and images – which day after day, year after year, expand, forming an increasingly complex network. The term can also refer to what we are familiar with, or "the people and companies involved in a particular activity."[3] Additionally, the notion of metaverse has recently emerged with the new technologies. A metaverse is understood as "a virtual-reality space in which users can interact with a computer-generated environment and other users."[4] Such different realities pose the question of how they intertwine or overlap in the arts, especially those involving teamwork and live performances. The multiverse is at play when art mobilises individuals working together towards the same goal: the performance of the play in a specific place, at a specific time and for a certain duration. Audiences willingly participate in the theatrical ceremony, which consists of a collection of different mindscapes that enter a "virtual-yet-embodied" reality – that of the theatrical illusion.

Based on eighteenth-century theoretical debates on the actor's art, reignited in the twentieth century by Constantin Stanislavski, this article reflects on performance as a multiverse system integrating different spaces, times and non-times. It examines the inner and outer aspects of performing, and how the stage can be seen as a junction between virtual realities and physical presence. It considers acting, not only as the art of the present moment, but also as a "transverse

effect" where the actors navigate diverse and even diffracted universes that interweave in the performance. The study of this multiverse system can help us better understand cognitive functions and states of consciousness, as well as new philosophical views of the self, the phenomenology of acting and the philosophy of mind.

Acting has been extensively discussed in France from the early modern period onwards, especially the different steps involved from playwriting (classical rules and Aristotelian *mimèsis*) to acting (*actio oratoria*).[5] Debates on performing interrogated the translation, or rather transposition, on stage, of the dramatic poet's mental universe. The *spirit* of the roles symbolised such intangible and somehow ineffable mindscapes. In the seventeenth century, primacy was given to the author – hence a text-centric approach to performance – over the actor, who had to reproduce the lines with his body alone and project the image of the character. Actors were to visually reconstruct the author's words and then transmit these to the audience; they were seen as a junction point of a chain of emotions – a *transmitter* bridging different inner spaces.[6] Until the 1740s, the actor was not seen as a person with subjectivity and sensitivity who could create his own character from the play, or as the centre of a multiversal system of which the self could be the linchpin. Indeed, in 1758, Louis Charpentier claimed that "The actor is only an instrument which the poet uses to communicate his ideas to us, in much the same way as a violin is used to charm the ears with the most touching sounds."[7] He denied the actor the status of artist, arguing that "the different expressions he attributes to the Actor [the character] are not his. At any given moment in the Theatre, he is only the copyist of his original. All his action comes out of the background of the play, it is the Author who lends it to him."[8] As a matrix, the actor's lines were to be embodied mechanically through multiple rules devised to represent the passions,[9] so that the genesis of the acting phenomenon, its collaborative and synergistic nature, and the inner workings of the creative process of teamwork, were disregarded.

These views were challenged in the mid-eighteenth century: the construction of a universe *through* another one became a salient point for discussion. The actor's own inner space was increasingly scrutinised, especially its multidimensional and intersectional aspects;[10] these included his imagination, intelligence, inventiveness, knowledge of the world (such as manners and social skills) and past lived experiences (such as affective memory).

Absorbing and transfiguring the role in the actor's mind and psyche marked a shift in theories on acting, now more centred on virtual realities in progress. In his essay "Observations sur une brochure intitulée *Garrick ou Les Acteurs anglais*," published in 1769, Denis Diderot referred to a universal way of performing a role: great actors first develop a specific space and mental state – even before rehearsing with their acting partners – absorbing the text, but at the same time creating an inner visualisation of the character, similar to a virtual game. Diderot praised in particular the technique of Mlle Clairon: "nonchalantly lying in her *chaise longue*, with her eyes closed, she can, by silently following her role from memory, hear herself, see herself on the stage, assess herself and the impressions she will excite."[11] This example illustrates the growing interest in a kind of meta-universe created in the actor's mind, understood as an unlimited space outside physicality, interconnecting the character, person, personality and persona.

The preliminary phases of acting could be compared to a mental incubator, where the character evolves, grows and transforms itself. The process of inner creation involves the intellectual faculties and in particular the power of imagination. In the example given by Diderot, Mlle Clairon

simultaneously has several roles: that of a director, in that she directs the movements of the character, putting it in context in a space that is intended to be identical to the set; that of a spectator and judge of her own character–simulacrum as she gradually invents and retouches it at will; that of an actor, in that it is indeed a clone or mental double that retains the role played. This process is amplified and multiplied with actors performing the same play every day; and duplicated when it comes to rehearsing the same roles or performing them at different times, creating an invisible chain of interactive image-creations.

This mode of creating in a multiplied and multitudinous way could be linked to Hélène Cixous' work on playwriting, especially her concept of the authorial self and its other fictional selves. Writing for the theatre involves "intersubjective relationships in which the authorial self is displaced" and "multiplied through the characters of the play," a process which can involve a sense of diffraction, and even a loss of gender specificity. In this way, the "self becomes the site of the other[s]."[12] Preparing a role means experiencing alterity; this activity has an impact on the psyche through painful processes of estrangement: "To write for the theatre, one has to go far from oneself, to set out, travelling for a long time in darkness until one no longer knows where or who one is; it's very difficult."[13] In this process, the mind is comparable to an interactive platform for playing and acting out the self through written language or, in the case of Mlle Clairon, for acting out the role through visual language. This can be, according to Cixous, a form of *démoïsation* or "unselving,"[14] which she refers to as a "long and fabulous suspension of the I which is no longer I and not yet you."[15]

According to Diderot, the actor's mind was key, constructing a hall of mirrors where the character could be infinitely varied and tweaked. The theatre of consciousness, as Daniel Dennett would later put it,[16] streamed variants of the character out-of-time, and perhaps in an ungendered abstract form. Diderot's "imaginary model" represents a *mise en abyme* of a self simultaneously and virtually on stage and off stage. Before rehearsing and blocking the scenes, actors were recommended to construct this model by activating different times and non-times – that is, the present moment (the time of creation), past memories and affects, and atemporal images and sounds (the inner 'movie screen'). In this way, the internalisation of the role was theorised as a two-step process characterised by the spatialisation of the scenes (virtual space), followed by the visual embodiment of the role (scripting and staging of the scenes). However, this inner multiverse was not necessarily visible during the performance, as various contingencies inevitably prevented actors from perfectly embodying their mental Character. They also had to be in tune with their partners' inner creations. Poor *ensemble* (disharmonious or desynchronised acting) often was blamed for a flawed performance, suggesting a lack of congruence between the players' mindscapes.[17]

Impulse acting became fashionable, opening doors to more improvisation on stage and instinctive ways of performing;[18] this required a perfect conjunction of minds and bodies to form a whole (the performance). The study of the 'human' element in performance led theorists such as Rémond de Sainte Albine (1747) and Tournon (1782) to rethink the creative process, as most debates ignored the phenomenology of acting. The Actor-Man, made up of his emotions, internal life and habitual spaces, was increasingly seen as a variable in the performance: he was part of an event that had its own uncertainties and constraints, and depended on contingencies.

Yet, Diderot, who discussed personal sensitivity in great depth, argued that the theatrical illusion resulted from a sharp separation between the actor-person (identity and being) and the actor-

character. Actors had to control themselves at all times, never merging with the character. They had to disengage emotionally and be impermeable to other worlds, creating barriers instead of junctions. Although Diderot did not explicitly discuss the idea of a multiverse in the theatre, his views were conducive to it. A probably invented anecdote about Henri Louis Lekain reveals the points of contact between different realities: "Le Kain-Ninias goes down into his father's tomb, he slits his mother's throat; he leaves it with bloody hands. He is filled with horror, his limbs twitch, his eyes go astray. […] However, Le Kain-Ninias pushes with his foot towards the backstage a diamond earring which had come off the ear of an actress."[19] The actor navigates two dimensions, managing two spaces at the same time: the performance itself (hence the focus on the jewel) and the performance of the role, that requires an internal virtual reality activated from the inside. Two parallel universes are simultaneously in action in the here and now.

Another anecdote relates how the link between these two dimensions can be broken: "At the first performance of *Ines de Castro* the children are brought in and the audience starts to laugh; Duclos, who was doing Ines, is indignant and cries out: Laugh, you, foolish *parterre*, at the most beautiful part of the play! The audience heard her, restrained itself; the actress resumed her role and her tears, and the spectators cried."[20] Although this example aimed to demonstrate the actor's insensitivity, it actually interrogates the actor's mindscapes and concentration during the performance in a very modern way. Indeed, two consciousnesses co-exist: that of the role (the *doing* or the metaverse that generates dramatic embodiment) and, in parallel, that of the self (linked to the outside and present moment).

Diderot does not explain which plays the greater part for the actor: self-consciousness (the actor's identity) or dramatic focus (the actor's performance). Sometimes self-consciousness is diluted as the actor immerses themself in acting, and sometimes it takes control when the actor is refocusing on the present moment. The partners who also are on stage live the same experience. The dialectic of these two consciousnesses, one turned outwards and the other inwards, each following its own tempo, suggests that performance is a journey where different dimensions coordinate, coalesce and interact. The theatrical multiverse *in performance* could therefore be defined as the perfect synchronisation between the dramatic scenario being performed and the real-life situation of the theatrical performance. Actors incorporate their partners' acting in their own consciousness by paying attention to the stage while delivering their lines. This integrated system is necessary to create harmonious teamwork and natural effects – what Stendhal called a "simulacrum of reality" – that could more accurately be characterised as "transverse" effects – the circulation and transfer of energy and emotions from one parallel universe to another. This inner transfer is emphasised in Mlle Clairon's *Mémoires*:

> When she entered the room where I was, I saw only an old woman, announcing nothing of the imposing nature I feared to find; badly coiffed, shabbily dressed, with no other demeanour than that of insouciance. […] Finally, she agreed to rehearse the scene from Electra in the third act […] The air of dignity she took on as she rose, arranging chairs to make a theatre and backstage area for herself, the change I saw in her whole being as she was about to speak, also changed all my ideas […] and when she spoke, the tones of her despair, the deep pain in her face, the noble and true abandonment of her whole being, came together in my soul to penetrate it.[21]

This anecdote portrays a transfiguration. It reveals an inner creative process that begins before speaking, existing beyond the lines. Little by little, a presence and a double resonance unfold in

and from Mlle de Seine: what the actor inspires in herself and what she inspires in Mlle Clairon. This moment symbolises the exact junction between the universes that Mlle de Seine passes through, moving from one to the other. This new, palpable but invisible creative space is perceived and felt by the spectator.

The actor acts and reacts to a phenomenon, to a living matter: immediacy. Examining the creative process, theorists claimed that instead of keeping the two inner universes separated as we have seen, actors had to create a third space made up of the author's universe and the actor's own creation. Such a space constituted the subtext or off-text. Tournon claimed that the actor had to become immersed in the character's state, act and speak in their place.[22] The very modern concept of inner illusion during the performance developed by this philosopher meant that actors had to intentionally change their mental state so that this could lead to a modification of consciousness. The inner illusion helped create an intersectional space connecting the self and the creative intra-universes. In this sense, in the eighteenth century, the artistry of the actor was acknowledged. Acting was no longer considered to be a mere reproduction of the script, but as a work and a creative process that involved a subjective transformation of the text (a different work from that of the author, as well as that performed by another actor), and a transposition of the text into reality. Conceptually, the Actor was increasingly seen as a junction point where the play – that is, scenes and lines – transited artistically, through minds and bodies – in fact, through the activated universes of the actors performing together on stage.

To sum up, while the universe of each individual intersects every day in the realm of the phenomenal, the theatrical stage, and in particular the performance, purposely aggregates a series of complex multidimensional creative processes that form a multiverse. These processes develop both linearly – that is, from the writing of the play to its first run – and cyclically, as symbolised by rehearsals or revivals, for instance; simultaneously internally and externally (the inner construction of the character versus the person on the stage); and across different times that overlap and converge: that of consciousness and its stream, and that of the performance itself.

Reflecting on his different roles as actor, director of the Comédie-Française and set designer, Eric Ruff states that he has a 360° vision of the show as he organises, observes and performs.[23] He argues that creative activity is comparable to mathematics, being "caught up in such a bundle of constraints, expectations and presuppositions that it is not as natural and free as one might think at first sight."[24] In the theatre, a creative team is composed of multiple participants including stage director, actors, set designer(s), costume designer(s) and technicians. Despite all facing different challenges and their worlds sometimes threatening to collide, they manage to work together towards the creation of the play. Thus, the performance and its constituents form a work in progress and are traversed by different invisible inner mindscapes that assemble, coalesce and interact in the here and now during preparatory meetings, brainstorming sessions, staging and acting – and beyond, through minds, collective memory and history.

The stage is presented nowadays as a laboratory, workshop or continuous training venue.[25] Actors are creative participants in the evolving and variegated multidimensional theatre world, standing at the heart of disparate realities and polymorphous virtual realities that question the spaces of theatre-making as we generally understand them. As a result, live performances seem more complex than ever, the outcome of human and, nowadays, technological worlds that intersect and interconnect. Acting combines different infinite possibilities created not only by the impermanent

and ephemeral nature of performance, but also by the extension of the material universe in the actors' minds; by the multiple simultaneous interpretations of a scene and different characters by different actors – for example, when scenes are blocked, or through time as evidenced by the palimpsests of a performance;[26] and by the streams of consciousness that can create alternative realities and place the actors at the centre of different worlds during the performance. Roles are continuously composed and de-composed on and off-stage, through different minds and selves. Hence the idea of the multiple is constitutive of the theatre.

The Diderotian imaginary model aims at embroidering the character in the interstices of the actors' minds, and imbuing the consciousness and the self with the spirit of the role. In the players' mindscapes, creation is freed from the pitfalls of the theatrical performance. However, every performance engages not only the physical, but also the 'being there' of the actors, who follow the flow of the now and here. The actors are doubly engaged on stage: in the dramatic situation (the plot and the lines to be performed) and in the stage situation (what is happening on stage). The actors juggle with their inner world and the reality outside them; with the character and their relation to the role; with their own beings – their outer appearances and psychological states. Acting a live performance is about assembling and coordinating all these elements, or at least making them coincide. In 1801, Mauduit Larive compared this concept with an electrical current that spreads from the stage to the auditorium once these inner landscapes are all in tune – one may say, when invisible transverse effects are perceptible.[27]

Acting, which might appear to be a 'scattering of being' or a constant flow of inner and outer movements to deal with multiple and coexisting parameters, finds a unity during the live performance, thanks to the actor's state. Optimal concentration allows for adaptability to stage situations, flexibility and reactivity in acting, and therefore gives impetus and energy to the multiverse *in motion*. Performing, seen through the prism of early modern theories – and revisited from a modern perspective – could be defined as playing simultaneously with related but disjointed universes, staged and activated by the mind and mediated by consciousness. Indeed, the theatrical multiverse has the particularity of combining different minds in one universe and one time, and in several virtual realities and times. In this way, it symbolises the very idea of junction (space) and juncture (time).

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1. Constantin Stanislavsky, *An Actor Prepares* (New York: Routledge), 1936, 11.

2. *Cambridge Dictionary*, https://dictionary.cambridge.org/dictionary/english/multiverse (accessed 3 June 2022).

3. *Cambridge Dictionary*, https://dictionary.cambridge.org/dictionary/english/universe?q=UNiverse (accessed 3 June 2022).

4. Ibid.

5. Sabine Chaouche, *L'Art du comédien. Déclamation et jeu scénique en France à l'âge Classique (1620-1680)* (Paris: Champion, 2001).

6. Sylvaine Guyot and Clotilde Thouret, "Des émotions en chaîne: Représentation théâtrale et circulation publique des affects au xviie siècle," *Littératures classiques*, 68:1 (2009), 225.

7. Louis Charpentier, *Causes de la décadence du goût sur le théâtre* (Paris: Dufour, 1758), 66. All translations are mine.

8. Ibid., 78-9.

9. See Chaouche, *L'Art du comédien*.

10. See Sabine Chaouche, *La Philosophie de l'Acteur. La dialectique de l'intérieur et de l'extérieur dans les écrits sur l'art théâtral français. 1738-1801* (Paris: Champion, 2007).

11. Denis Diderot, "Observations sur une brochure intitulée *Garrick ou les Acteur anglais*," in his *Correspondance littéraire, philosophique et critique* (Paris: Garnier, 1879), Vol. 9, 137. My translation.

12. Julia Dobson, "The Staging of the Self: The Theatre and Helene Cixous," *New Readings*, 2 (1996), 21-36, at 24.

13. Hélène Cixous, "Hors Cadre Interview," trans. Verena Andermatt Conley, in *Mimesis, Masochism, and Mime: The Politics of Theatricality in Contemporary French Thought*, ed. Timothy Murray (Ann Arbor, MI: University of Michigan Press, 1997), 29-39, at 36. See also William McEvoy, "'Leaving a Space for the Non-theorizable': Self and Other in Hélène Cixous's Writing for the Theatre," *The European Legacy*, 14:1 (2009), 19-30.

14. Hélène Cixous, "De la scène de l'Inconscient à la scène de l'Histoire: Chemin d'une écriture," in *Hélène Cixous, chemins d'une écriture*, eds Françoise van Rossum-Guyon and Myriam Díaz-Diocaretz (Paris: PUV and Rodopi, 1990), 28.

15. Hélène Cixous, "Qui es-tu?," in her *L'Indiade, ou l'Inde de leurs rêves et quelques écrits sur le théâtre* (Paris: Théâtre du Soleil, 1987), 270.

16. Expression used by philosopher Daniel Dennett about the Cartesian theatre (analogy of the mind to a theatre).

17. Attrib. to Abbot Guyot-Desfontaine, *Lettre d'un comédien français* (Paris: Vve Pissot, 1728), 68-70 (translation of an extract from *Dell'arte rappresentativa* by Luigi Riccoboni).

18. Sabine Chaouche, "Expressionist Acting. Paroxysmal Emotions at Play on the Late 18th-Century French Stage," *European Drama and Performance Studies*, 17:2 (2021), 97-124.

19. Denis Diderot, *Paradoxe sur le comédien* (Paris: Flammarion, 2000), 76-7.

20. Diderot, "Observations," 150.

21. Mlle Clairon, *Mémoires et Réflexions sur l'art dramatique* (Paris: Buisson, 1798), 140-1.

22. Attrib. to Tournon de la Chapelle, *L'Art du comédien vu dans ses principes* (Amsterdam and Paris: Cailleau & Duchesne, 1782), 111.

23. Eric Ruf, "Réflexions sur la création et ses processus," *European Drama and Performance Studies*, 13:2 (2019), 265.

24. Ibid.

25. Josette Féral, "Did You Say 'Training'?," *Performance Research*, 14:2 (2009), 16-25.

26. Established traditions are often challenged and lead to new acting styles and staging; historical and cultural contexts differ in time and space, leading to new interpretations of the same text.

27. Jean Mauduit Larive, *Réflexions sur l'art théâtral* (Paris: Rondonneau, 1801), 317.

TONY MCCAFFREY

DIFFERENT LIGHT THEATRE: MULTIMODAL PRACTICES IN LEARNING-DISABLED THEATRE

Learning-disabled theatre is often perceived as giving a voice to the voiceless or empowering those marginalised in society. But how can this voice and power avoid becoming co-opted by neoliberal, racial, colonial capital merely to produce the entitled, self-possessed, autonomous individuals that late capitalism needs, but the production of which is destroying the planet? Does the political efficacy of this work consist in the mere presence of learning-disabled artists in these contexts, or is it not rather in the negotiation of the terms of their presence and participation? Interesting answers to these questions emerge in the exploration of the multimodal negotiation of voice, presence, representation and mediation in learning-disabled performance *as performance*.

I have been working for 18 years helping to create self-devised performance with Different Light Theatre, an ensemble of learning-disabled artists in Christchurch, New Zealand. The unique characteristics of the company mean that we have been prompted to develop multimodal ways of working in creating, presenting and researching performance. The company emerged from a city council initiative to include learning-disabled people in theatre that funded my leading an eight-week series of workshops within Hohepa Canterbury, a residential institution. At the conclusion of the workshops, I did not wish to walk away and, with the help of drama students from NASDA,[1] where I work as a tutor, I established a performance company. The company comprises between ten and 20 learning-disabled performers, some with Down Syndrome, some diagnosed with autism, some with cerebral palsy, some with additional physical disabilities. It has included a small team of never more than three or four non-disabled participants. We have operated in roles that include 'organiser' (organising transport, schedules and spaces and times for the learning disabled artists); 'coach' (providing ongoing training in basic aspects of theatre); 'framer' (providing a creative structure within which the learning-disabled artists are free to create); 'filter' or curator and editor of artistic ideas; 'artistic collaborator;' and the more nebulous role of 'creative enabler,' seeking to accommodate access, support and artistic process at the same time.[2]

The subsequent journey of Different Light has encompassed very different models of creating and presenting learning-disabled theatre. These have included an initial model of naive community theatre, followed by an attempt at conventional dramatic theatre. The company then experimented with strategies of theatrical storytelling, moving away from conventional theatrical spaces and the conventional momentum and duration of rehearsal and performance. The next turn was toward performance art and performance research. This was in part prompted by the need to rethink theatre in response to the Christchurch earthquakes, the continuing climate crisis and the global pandemic. Each shift, each variation in mode of performance was a different attempt to a) accommodate the learning-disabled artists; and b) find new aesthetics to challenge and stimulate them as artists and new ways of engaging audiences in the performance event.

The meaningful participation in theatre of learning-disabled artists depends upon two often conflicting demands: a) the need for sufficient support and care to include people who have been subjected to "epistemic injustice"[3] in education and training; and b) the need to offer learning-disabled artists opportunities to be challenged and to develop practices characterised by artistic rigour.[4] This tension has been explored by Margaret Ames of Cyrff Ystwyth,[5] who has written eloquently of the aporia or gaps characteristic of learning disability coming into contact with the meaning-making "disciplinary formations" of theatre. Bruce Gladwin of Back to Back Theatre[6] has, with characteristic understatement, referred to the company's "issues with theatre," out of which it nonetheless makes ground-breaking learning-disabled theatre. In my experience, this need to explore the complex relationship between accessible participation and forging new aesthetic and political possibilities leads necessarily to the adoption of multimodal processes of creating and presenting theatre.

Members of Different Light Theatre have diverse and disadvantaged access to the conventional building blocks of theatre. In terms of voice, we have performers who stammer, who have speech impediments, or, in the case of Glen Burrows, who accesses his 'voice' in a range of ways: through a Dynavox, iPad text or speech-to-text software, laminated sheets containing certain key phrases and illustrations, and his own distinctive vocal articulations. We have attempted to include all of these different voices in performance, as well as theatrically deconstructing the concepts of 'voice' as a clear, resonant actor's instrument and as unproblematic, neutral access to the lived experience of the learning-disabled artists. We have investigated what acting, stage presence and *kairos*[7] or good timing mean in live performance by using live-feed and pre-recorded video, captions, voiceovers and digital vocal manipulations. In the group's performances, multimedia approaches intertwine with the need for care and access intimacy,[8] and this often results in a mix of "intermediality" in performance.[9] Intermediality is itself a multimodal approach to performance that does not prioritise any one medium: screen, live, digital or immersive. The performance event becomes a kind of assemblage within which affects are transmitted between human participants and theatrical and digital techne. Access intimacy seeks to afford a flexibility and ease of access and connection for all bodies in a particular space. Taken together in learning-disabled theatre, these factors render political – at a fundamental level – the audience's processes of perception, understanding and affective engagement with the performers and the performance.

During the 18 years of Different Light Theatre's existence, I have attempted to engage the learning-disabled performers in different modes of theatre and performance: naïve community theatre, conventional dramatic theatre, postdramatic theatre,[10] immersive, interactive, intermedial theatre, ecological theatre and performance as research. These descriptors appear abstract and academic,

but the theatrical practices they describe need to be eminently understandable, practicable and, crucially, enjoyable, for actors to participate. The learning-disabled actors of Different Light have had no problem with engaging in these different modes. They have proven more than capable of creating naturalistic characters; slipping in and out of character; collaborating in site-specific theatre; engaging audience members in immersive environments; incorporating pre-recorded and live-feed video, voiceovers and voice manipulation; participating in non-conventional performance in the streets of quake-damaged Christchurch;[11] and collaborating with disability artist and scholar Petra Kuppers in gentle, environmentally conscious performance at Waikuku Beach.[12] With each successive development, however, the performers themselves changed the goalposts in myriad practical, technical, material, unimagined and imaginative ways, shifting the paradigms and sending us, the non-disabled facilitators, back to the drawing board to reconfigure what we collectively understood as theatre and as the assemblage that consituted the group.

To give one example, in 2010-11 during the series of earthquakes and aftershocks that Christchurch experienced, the company expressed a desire to explore performance grounded in the comfort, familiarity and repetitive routine of daytime television soap operas. I introduced them to the Dutch TV web series *Downistie*, modelled on the US series *Dynasty*, in which all of the characters are played by actors with Down Syndrome. This immediately became a utopian exercise, as the conditions do not yet exist in New Zealand to allow for learning-disabled doctors, drivers and politicians. The genre of soap opera became something else in the encounter with the learning-disabled performers: a performance mix that included (and exceeded) the theatrical modes of social critique, parody and pastiche.

In 2013, the company performed a 20-minute version of a soap opera, *The Lonely and the Lovely*, at the opening of the Disability Studies in Education conference at the University of Canterbury.[13] At the end of the performance, switching their mode of engagement, the actors went into the audience largely composed of academics and teachers. They distributed a questionnaire containing three questions: 1. What is your disability? 2. Who are your support workers? 3. What makes you lonely? What makes you lovely? This was an attempt to flip the script on the expected research relationships between non-disabled researchers and disabled research subjects. Respondents were encouraged to re-assess themselves. Responses included: "My disability is my patience/ arrogance." "My support workers are my family, my whanau[14] and my students." "I am lonely in what my work expects of me, I am lovely when I manage to connect with others." Conversations and discussions continued after the performance in a meet-and-greet session with the performers.

MULTIMODALITY IN ACCESSING AND REPRESENTING THE 'VOICES' OF THE PERFORMERS

The turn to performance research has always been immanent within the company. The 2010-11 production *Still Lives* was intended to explore the difficulties of three learning-disabled young men finding their voices in the 'recovery' from the Christchurch earthquakes – a recovery that, it soon emerged, continued to ignore them. Whereas the earthquakes had been inclusive, the recovery clearly was not. The rebuilding of the city from the ground up neglected the opportunity to include equitable access for all. *Still Lives* explored what constituted the voices of the performers by presenting a polyphony of computerised voices, captioned video, fantasy video sequences and the contrasting spoken voices of the performers.[15] When it was presented at the Society for

Disability Studies conference in San Jose, California, it was accompanied by two ASL signers and live captioning. The production sought to problematise the presence and expression of the young men's 'voices' in the surrounding stillness of both the earthquake-damaged city and their continuing marginalisation as learning-disabled people within it. Computerised voice-overs positioned them in various narratives – disclosing (deliberately incorrectly) their disabilities, idealising them as fantasy princes and dismissing their desires – and contrasted with the contradictions, nuances and lacunae of their own spoken voices. The multimodal production suggested that the rush to dramatic or theatrical identification and meaning was in tension with the complexities and contradictions of the performers' experience and their access to expressing this.

In part due to the post-quake damage to existing structures in Christchurch, the next phase of the company's activities was undertaken outside of conventional theatrical spaces. Different Light operated, and still operates, in the interstices of a tertiary educational institution, the NASDA drama school within Ara Institute. This affords access to theatre and rehearsal spaces in the downtimes of the institution, and the opportunity to repurpose the props, costumes, part-built and completed sets and lighting plots of the drama school, while respecting the health and safety requirements of the Different Light and the drama school performers. The absence of an imperative to perform an annual production meant that the performers were able to access the techne of conventional dramatic and musical theatre performances, observe them in a different light and put them to uses for which they had not been intended. In *The Undercommons*, Moten and Harney write of the need to "sneak into the university and steal what one can. To abuse its hospitality, to spite its mission, to join its refugee colony, its gypsy encampment, to be in but not of ….".[16] This period of the company's praxis was an exercise in undercommons 'study' – a speculative practice not necessarily undertaken as a means to knowledge and qualification, or, as Jack Halberstam articulates it, "a mode of thinking with others separate from the thinking that the institution requires of you."[17]

The group pursued 'study' in the backstage and rehearsal spaces of a theatre without the pressure to produce completed projects or performance for a paying public. Different Light performers started making appearances in masks in and around civic artworks in the city. A group of performers in larval masks sat outside and interacted silently with each other at the tables of a cafe abandoned during the quakes. On another occasion, 15 learning-disabled actors staged walks through the road cones, scaffolding and fences of the city in transition, adapting their formation to the temporary, often inaccessible, constraints on public space. At times they stood and looked at what had previously been a space occupied by a building that was important to them. Passersby looked on, equally bemused by the confusion of the rebuild.

In 2019, Different Light Theatre company members responded to my prompt to devise a performance for the Christchurch Arts Festival, giving their take on the 15 years of the company's existence. Company member Isaac Tait's immediate response to the idea of a history of the company was a wish to speak of the "people who had disappeared" in that time. Disappearance became the focus of the whole production. This encompassed the dis-appearance of disability, the dis-identification of theatrical representation, as well as referring to Fred Moten's formulation: "The conjunction of reproduction and disappearance is performance's condition of possibility, its ontology and its mode of reproduction."[18]

This idea of disappearance included the death of two key company members, John Lambie and Louise Payne, but also those performers who had joined the company and moved on over the years, and others whose family and living circumstances had changed, preventing their continuing with the group. This idea of disappearance began to permeate the process and the performance. It led the performers to question what appears and disappears in a 'history' as a series of events, what appears and disappears in memory and in performance, and what disappears only at some stage later to reappear unprompted. In *The History of Different Light*, the performers were encouraged to revisit scenes, memories, characters, lines of text and objects from previous productions, at times connecting with videos of their younger selves in rehearsal or in performance and exploring what had been gained and what had been lost during 15 years of working together. It was an invitation to examine the life of the company by means of a self-reflexive performance.[19]

For some, this meant an uncomfortable or alienating return to their past selves in performance. Ben Morris chose to revisit a devised scene from *Ship of Fools* in which he had appeared to disrobe, take a shower and entertain dreams of sirens dancing and singing around him. When this was performed in Horsham, Victoria, at the Awakenings Disability Festival, one showing included a schools audience which reacted raucously to the suggestion of his disrobing (behind a sheet of blue cloth). Morris frequently referred to this experience and the 'buzz' he got from this theatrical sleight of hand. When in *The History of Different Light* video of this scene was projected alongside the live performer onstage 12 years later, his response was ambivalent. He introduced the scene to the 2019 audience with some comments about how he felt so much less free now, but at the same time he also mimed along with every word he had spoken in the scene as he looked at his younger self. It was his choice to include this archive, as was the ambivalence of his response.

In debriefing this and other scenes in which live performers appeared alongside archive video footage, we discovered that the celebration of the group's being together for 15 years was tinged with a sense of disappointment. In conversation with the performers, it was apparent that this disappointment encompassed the realisation that the promissory note of inclusion toward which the company had aimed – inclusion in (professional) theatrical performance, inclusion in tertiary education and inclusion in a more meaningful social life – had not yet been redeemed. In addition, we were all 15 years older. These discussions gave new meanings to what Isaac Tait had characterised as "people who have disappeared." These now included past selves and hopes.

To try to capture the diversity of the company's activities that range across theatrical performance, activism and research, we decided to create a book: *Giving and Taking Voice in Learning Disabled Theatre*, first proposed to Routledge in February 2020.[20] The book attempts to let the learning-disabled artists give and take voice in a range of different ways. The focus on *giving-and-taking* is an attempt to account for the contradictions inherent in this work to date, including the inequity implicit in the exchange of one privileged group *giving* theatre to another less privileged group. It is an attempt to show how ideas or epistemologies, such as liberating the 'authentic' voice of a marginalised group of people, is a kind of (neo)liberal chimera that posits 'voice' or representation as a marker of fixed, static identity when such concepts as self and identity are context-dependent and fluid. Finally, it attempts to show how the disciplinary formations of theatre and performance are inflected with ableism: of voice, body, character/persona, object, light, sound, dramaturgy, scenography and space. The methodology of the book is to intercut transcriptions of interviews with the performers with my "thick description"[21] of the company's processes of devising, rehearsal and performance in an attempt to incorporate different modes of discourse, a polylogue of voices.

Attempting a history and creating the book sent us back to the archive of the company. In drafting and redrafting the book, I found in this archive many hours of interviews – of the performers by me and other non-disabled creatives, documentary makers and New Zealand TV and radio journalists. I also found video interviews done by the performers themselves of each other: Matthew Phelan interviewing the performers in rehearsal for *Ship of Fools* prior to the Awakenings Festival in Australia in 2007.[22] There are interviews and conversations recorded in the Buddhist Centre in Christchurch three weeks after the fatal quake of 2011. Peter Rees interviewed other members of the company in 2012 while devising *The Lonely and The Lovely*. From 2020 to 2022 the company's processes were recorded in Zoom meetings that were the only way of being together during the lockdowns prompted by the pandemic. Revisiting the archive raised fundamental questions about the company's multimodal activities and ways of being together and our kaupapa or foundational principles of being together. Was it still the making of theatre? Was it just being together? Was it finding ways of being together in our untogetherness?

THE MULTIMODAL PRACTICES OF DIFFERENT LIGHT: FIELD NOTES, A VIDEO POSTCARD, EXTRACTS FROM A CONFERENCE PAPER

An account of the multimodal practices of Different Light likewise needs to try to accommodate different voices, different modes of discourse. The following is a brief attempt to do so.

Field notes

In a recent three-hour session of Different Light being-together, some on Zoom and some in person, I attempted to record the wandering lines of discussions and activities:

> Travelling together, talking about travelling together overseas and locally, travel as research into moving through an ableist world, caring for each other when ill or not up to attending or fully participating in rehearsal, Zooming or video messaging, sharing refreshment breaks and meals, shopping for things with which to celebrate birthdays and anniversaries, doing trivia quizzes, inventing personal and group trivia quizzes, reminiscing on the history of the group, planning impossible performances, dipping into different narrative genres, planning impossible journeys, in-jokes, variations on a theme of in-jokes, disciplining each other and ourselves to act our age, learning about other learning disabled artists, performers and activists, word association, singing freely (unashamedly), writing new lyrics (badly), checking in with what and how people are doing, being bored, trying out different kinds of rhetoric, planning for future presentations and performances, reading and discussing easy-read material for other theatrical productions, playing with words, thinking we are serious and working seriously, talking about the hobbyhorses of Transition,[23] the carousel of hobby courses that process people with intellectual disabilities in New Zealand after they leave high school in their twenties, unplanned humorous intervention by performer Peter Rees: Peter repeating, Peter the repeater, Peter petering out …

A video postcard

In July 2022 the Different Light ensemble sent an 8-minute video postcard to the Performance and Disability Working Group of the International Federation for Theatre Research conference in Reykjavik, addressing the theme of Shifting Centres:

DAMIAN BUMMAN: Right now, it's 9.45 am in Reykjavik

which means that it's 9.45pm in Christchurch

and 7.45pm in Sydney and 7.15pm in Adelaide.

But now it is 9.46am in Reykjavik

which means it's 9.46pm in Christchurch,

7.46pm in Sydney, and 7.16pm in Adelaide...

(He looks at his watch)

Unless my watch is wrong...

...

MATTHEW PHELAN: The centre of Different Light is Ōtautahi, Aotearoa.

JOSIE NOBLE: The centre of Different Light is everyone here – in a cold theatre.

ISAAC TAIT: It's thinking.

ANGIE DOUGLAS: It's Glen and Angie.

JOSIE NOBLE: The centre of Different Light is acting.

GLEN BURROWS: We are.

MATTHEW PHELAN: Performance.

BIDDY STEFFENS: We do scriptwriting.

GLEN BURROWS: Yeah.

ANGIE DOUGLAS: We do fun things.

ISAAC TAIT: Dancing also. Yeah.

JOSIE NOBLE: And also the centre is everyone here and devising scripts.

A conference paper

I accompanied this communication with a version of an academic paper, interweaving my words with those of the performers, from which this is an extract:

I am speaking these words at Matariki, the first national holiday in Aotearoa/New Zealand to be based in indigenous practices and knowledge. Damian Bumman starts with time. Time zones. Time differences. Glen Burrows takes his own time to get on and across the stage. Peter Rees takes his own time for the onset of certain sounds and words and the onset of speech as he sometimes stutters or stammers. Matthew Phelan says the centre of Different Light is Ōtautahi, Aotearoa. This is our turangawaewae, the land on which we stand and whence we speak. Every week ten of us, two in motorised wheelchairs, follow the footpath to take a break from devising and rehearsal. The footpath still buckles awkwardly in places, the traces of the 2010-11 earthquakes: evidence beneath our feet and wheels of tectonic shifts, of a geological time that stretches back two to four billion years.

As a learning-disabled theatre company, we need to pay attention to modes of knowing that go beyond the rational, the normate, and the neurotypical, we need to weave into our mix of togetherness and untogetherness the knowledge of tangata whenua, and we need to heed the cries of the planet. We continue to walk and wheel down the pavements of Ōtautahi: we grow old together. Below us Papatuanuku, the earth mother, for the moment, is still, supportive. If we look up, we will see, we will feel, the stars of Matariki. The stars of Matariki are weaving in our ageing, vulnerable, precarious, precious bodies, they are dancing within us ...

Contemporary learning-disabled theatre, such as that developed by Different Light Theatre, seeks to temper the need for the inclusion and emancipation of learning-disabled people with the cries of the planet and interrelational ecologies of care. Different Light explores the political possibilities of learning-disabled artists' occupation and sharing of the subjunctive spaces and times of theatrical performance. This involves a multimodal approach to the creation, curation and presentation of theatrical performance. This approach is determined by the diverse abilities, capacities and virtuosity of the learning-disabled artists. In that process, fundamental questions are generated about what is meant by ability, capacity and virtuosity that have far-reaching implications for theatre and arts practice and research.

Tony McCaffrey is artistic director of Different Light Theatre, a learning-disabled ensemble, and author of *Incapacity and Theatricality* (Routledge, 2019) and *Giving and Taking Voice in Learning Disabled Theatre* (Routledge, 2023). He is co-convenor of the Performance and Disability Working Group of the International Federation for Theatre Research.

1. National Academy of Singing and Dramatic, Ara Institute, Christchurch, New Zealand.

2. I take these terms from Yvonne Schmidt, a performance studies scholar embedded with Theater HORA, a leading European learning-disabled theatre company. See Yvonne Schmidt, "Towards a New Directional Turn? Directors with Cognitive Disabilities," *Research in Drama Education: The Journal of Applied Theatre and Performance*, 22:3 (2017), 446-59.

3. Miranda Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford: Clarendon Press, 2007).

4. For a lengthier discussion of "rigour" in this context, see Sarah Whatley, Charlotte Waelde, Shawn Harmon, Abbe Brown, Karen Wood and Hetty Blades, *Dance, Disability and Law: InVisible Difference* (Bristol: Intellect, 2018), 175-6.

5. A learning-disabled dance company from Aberystwyth, the members of which Ames categorises as her co-researchers. See Margaret Ames, "Emptiness as Material for Devised Theatre Performance," *Research in Drama Education:The Journal of Applied Theatre and Performance*, 23:1 (2018), 4-19.

6. Operating out of Geelong, Australia, considered by many to be the world's leading learning-disabled theatre company. See Bruce Gladwin, "Searchlight Pitch Session for *Ganesh versus the Third Reich*," presentation at Australian Performing Arts Market, Adelaide Festival Centre, 24 February 2010.

7. I am drawing here on ideas of "kairos" in the work of Yergeau and Lipari. See M Remi Yergeau, *Authoring Autism: On Rhetoric and Neurological Queerness* (Durham, NC: Duke University Press, 2017); Lisbeth Lipari, *Listening, Thinking, Being: Towards an Ethics of Attunement* (University Park, PA: Penn State University Press, 2014).

8. Mia Mingus, "Access Intimacy: The Missing Link," *Leaving Evidence*, blog post, 5 May 2011, https://leavingevidence.wordpress.com/2011/05/05/access-intimacy-the-missing-link/.

9. Freda Chapple and Chiel Kattenbelt, eds, *Intermediality in Theatre and Performance* (Amsterdam and New York: Rodopi, 2006).

10. Hans-Thies Lehmann, *Postdramatic Theatre*, trans. Karen Jürs-Munby (London and New York: Routledge, 2006).

11. Petra Kuppers, "Disability Performance in the Streets: Art Actions in Post-quake Christchurch," *TDR/The Drama Review*, 59:1 (T225) (2015), 166-74.

12. Petra Kuppers, *Theatre and Disability* (London: Palgrave Macmillan, 2017), 73-8.

13. *The Lonely and The Lovely*. Devised by the ensemble, directed by Tony McCaffrey. Different Light Theatre, Disability Studies in Education conference, Jack Mann Auditorium, University of Canterbury, 7-9 June 2013.

14. Māori term for extended family, including ancestors.

15. *Still Lives*. Devised by the ensemble, directed by Tony McCaffrey. Different Light Theatre, Ludus Festival, Leeds and PSi 18 Riley Smith Hall, University of Leeds, 28-30 July 2012.

16. Fred Moten and Stefano Harney, *The Undercommons: Fugitive Planning and Black Study* (Wivenhoe, New York and Port Watson: Minor Compositions, 2013), 26.

17. Jack Halberstam, "Introduction," ibid., 11.

18. Fred Moten, *In the Break: The Aesthetics of the Black Radical Tradition* (Minneapolis, MN: University of Minnesota Press, 2003), 5.

19. *The History of Different Light*. Devised by the ensemble, directed by Tony McCaffrey. Different Light Theatre, Christchurch Arts Festival, NASDA Theatre, Christchurch, 1-3 August 2019.

20. Tony McCaffrey, *Giving and Taking Voice in Learning Disabled Theatre* (Abingdon and New York: Routledge, 2023).

21. Clifford Geertz, "Thick Description: Toward an Interpretive Theory of Culture," in his *The Interpretation of Cultures: Selected Essays* (New York: Basic Books, 1973), 3-30.

22. *Ship of Fools*. Devised by the ensemble, directed by Tony McCaffrey. Different Light Theatre, Awakenings Festival, Horsham, Victoria, Australia, 13-15 October 2007.

23. Transition as in the New Zealand Ministry of Education guidelines on "transitioning students with additional learning needs from school to adult life." Ministry of Education, *National Transition Guidelines*, https://www.education.govt.nz/school/student-support/special-education/national-transition-guidelines-for-students-with-additional-learning-needs/national-transition-guidelines/.

LEO CHU

BETWEEN DEMOCRACY AND TECHNOCRACY: ECOLOGY AS MULTIDISCIPLINARY SCIENCE IN THE TRANSPACIFIC COLD WAR

INTRODUCTION

This paper investigates the circulation of ecological knowledge and practices between North America and Southeast Asia via ecologists' involvement in the politics of science during the Transpacific Cold War. Historians have documented how American scientists in the early Cold War (1945–1965) faced the contradiction between their apparent 'freedom' to conduct research compared to scientists in socialist countries, on the one hand, and the imperative to depoliticise the connection between their research and the military-industrial complex, on the other hand.[1] Historians have also shown how the environmental, civil rights and antiwar movements severely challenged this apolitical science by the late 1960s.[2] The popularisation of ecology and its convergence with environmental politics after the 1970s are often viewed as part of this trend of repoliticising science in North America.[3]

However, this paper argues that the Cold War ideal of apolitical science did not just vanish from ecology, but traveled to Southeast Asia where ecological science had not yet joined forces with the environmental movements. The next section first outlines how the American military-industrial complex facilitated the rise of a particular school of ecology, systems ecology, and its ambition to enact technocracy, or governance through apolitical expertise. Nonetheless, in response to the challenges of social movements, ecologists started to distance themselves from this technocratic idea by transforming their field into a 'multidisciplinary' endeavor with the aim of creating a more democratic approach to environmental planning. Conversely, the second section demonstrates how the appeal of multidisciplinary approaches entered Southeast Asia mainly to justify ecologists' participation in developmental projects, without necessarily challenging the state's hegemony in policymaking. A third section investigates how ecologists in Thailand, the Philippines and Indonesia theorised the value of multidisciplinary research in the 1980s through the idea of the 'agroecosystem.' Finally, I situate the legacy of this apolitical ecology in contemporary debates about agroecology and stress the need to rediscover the democratic promise of multidisciplinary ecology.

MODELLING DIVERSITY

Since a detailed history of 'systems ecology' is beyond the scope of the paper, here I will focus on two ecologists, the brothers Eugene and Howard Odum. In 1954, they were hired by the Atomic Energy Commission (AEC) to survey the impacts of nuclear testing on Eniwetok Atoll, an opportunity they used to quantify the primary productivity of coral reefs, which became a paradigmatic case of systems ecology. Howard Odum's 1955 analysis of primary productivity in Silver Spring, Florida, was another paradigmatic case that depicted rivers entirely as energy and biochemical circulations. The survey of species and their relations that dominated interwar ecology was then replaced by the analysis of the aggregated properties of the whole system.[4]

In 1964, Eugene Odum coined the name "systems ecology" to describe this new school of ecology. He argued that the ecosystem had become a "basic unit of structure and function" in ecology, similar to cells in molecular biology.[5] In addition, he used advances in ecology to support his faith in technoscientific progress and proposed that the "net result of the atomic age should be favorable if new tools, such as radioactive tracers, and new thinking about the minimum ecosystem for man in space can be fully exploited in terms of man's continued survival in the biosphere."[6] Appealing to the field of cybernetics – the control of complex systems – which had emerged in military research during the 1940s and 50s, systems ecologists presented ecosystems as complex machines governed by feedback loops and circular causality. They then promoted the use of complex machines, namely computers, to simulate and optimise ecosystems. As philosopher Peter Taylor observed, ecologists in the 1960s consequently embraced a "technocratic optimism" which aspired to govern the environment according to apolitical expertise.[7]

Some historians argued that this enthusiasm for systems ecology had largely dissipated by the early1970s due to the ambivalent results of American participation in the International Biological Programme (IBP). Between 1968 and 1974, the United States Congress spent roughly 57 million dollars on developing large-scale biome models of arid land, grassland, forest and tundra. While the IBP offered unprecedented funding and networking opportunities, the models it produced were of little use to policymakers as a result of their lack of standardisation and socioeconomic contexts.[8] However, the environmental movements offered systems ecologists a second chance to influence society with their knowledge of ecosystem modelling. A new generation of ecologists thus began to adapt the cybernetic languages of their field into a multidisciplinary approach to policymaking.

The career of Canadian ecologist Crawford Holling testified to this new development. After establishing himself in the field of pest control, in the 1970s Holling developed the theory of "resilience," or "a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables."[9] Having witnessed the side effects of narrow-minded technological applications, such as the ecological homogenisation and pesticide resistance induced by DDT and monoculture, Holling believed that ecologists should not attempt to lock a system in an equilibrium, but preserve its capacity to adapt to disturbance. While he was working at the University of British Columbia, Holling's collaborators extended his vision of resilience to policy issues ranging from grazeland management to urban planning, and emphasised how *democratic participation* can keep nature and society within the boundary of adaptation: "The democracy is boundary-oriented (like the grassland), and the dictatorship is equilibrium-centered (like the wheatfield). Democratic systems

appear purposeless, oozing from one compromise decision to another, but persisting. Dictatorships, or technocracies, are much more purposeful and goal-oriented (equilibrium-centered) but also much more vulnerable to overthrow or disruption."[10]

To avoid this "equilibrium-centered" mindset, Holling argued for dialogue and cooperation across disciplines through what he described as a "workshop" approach. In such a workshop, a group of experts would be invited to create models reflecting the concerns of their disciplines and, through debating the results of each model and realising their biases, use the lessons learned to "build the essential bridges between methods, disciplines, and institutions."[11] Moreover, echoing the growing emphasis on citizens' role in policymaking, Holling argued that a workshop must involve not only multidisciplinary experts, but also the public, so that it can accommodate not only "specific 'legitimate' vested interests," but "all vested interests," thereby achieving a "truly open access to information" and "a change in political and institutional structure that can threaten but also improve the political process."[12] Under this new paradigm, the heterogeneous grassland thus became a better model of policymaking than the monoculture of wheatfield, artificially kept at maximum productivity.

AGRICULTURE IN THE COLD WAR

As ecologists in North America steered their discipline away from technocratic ambitions, a related but different context emerged in Southeast Asia: to win the 'hearts and minds' of developing nations, in the 1950s and 60s, American philanthropic organisations, in particular the Ford and Rockefeller Foundations, worked with universities and governmental agencies to launch training and research programs in Asia and Latin America with the aim of increasing food productivity, a campaign often summarised as the "Green Revolution."[13]

Crucially, while social movements between 1966 and 1975 repoliticised science in North America, in Southeast Asia the ideology of apolitical science was reinforced by several geopolitical events of that decade: the anticommunist massacres under Suharto's New Order; the rise of Ferdinand Marcos's authoritarian rule; and Communist conquest in Vietnam, Laos and Cambodia. Among countries allied with the United States, science remained largely a state-led activity for national development. As a result, the technocratic origin of ecology was less a problem than a promise for the practical value of this relatively young field.

One leader of this nascent group of ecologists was Indonesian Otto Soemarwoto. Receiving his PhD from Berkeley in 1960 and director of the National Biological Institute (Lembaga Biologi Nasional) since 1964, Soemarwoto led a series of studies on *Imperata cylindrica*, a weed known locally as *alang-alang*. His team at the Institute of Ecology of Padjadjaran University not only identified factors affecting the germination of *Imperata cylindrica* including light requirements, bud color and position, shoot length and rhizome size, but also situated the data according to different control methods – cultural, mechanical and chemical – and farming variables such as labor availability, land size and degree of mechanisation.[14]

This study later caught the attention of Percy Sajise, a Filipino finishing his PhD in Cornell in 1972. For Sajise, *Imperata* was not only a weed, but "a secondary form of plant succession" created by "cultural practices such as shifting cultivation (deforestation and burning) as well as to frequent slashing." His dissertation aimed to examine *Imperata* at sites under different treatment regimes

– newly cut and burnt, deforested and abandoned, and deforested followed by a period of pruning – and devise corresponding control methods. By paying attention to those engaging in the 'slash-and-burn' agriculture that was often stigmatised by the government, in the late 1970s Sajise would launch an investigation into the gap between state policies and the reality of upland communities at the University of Philippines Los Baños (UPLB).

The Ford Foundation was arguably the most influential American institution supporting Sajise and Soemarwoto's work. In the 1970s, as the foundation created environmental assessment programs in North America such as Crawford Holling's modelling workshops, it also surveyed the environmental impacts of the Green Revolution in Southeast Asia. The Ford Foundation thereby laid the foundation for a transpacific network of ecological research. Notably, it was Gordon Conway, a British ecologist, who became the first to link the multiple institutions of the network. Conway began his career in the early 1960s at the Department of Agriculture of North Borneo, where he noticed the uneven impacts of insecticides in pest control. He then pursued a PhD on population modelling at University of California, Davis, and became associated with ecologists on the West Coast such as Holling, who brought to his attention the Ford Foundation's Southeast Asian programs.[15]

Conway's views on agriculture in developing countries resonated with Holling's idea of resilience. Based on the tradeoff "between productivity and stability" in ecosystems, he argued that projects aiming for "a shift in the natural balance to create semi-artificial ecosystems" would invariably face "serious instability."[16] If the problem with the Green Revolution was this obsession with productivity, Conway presented the multidisciplinary approach of ecology as a remedy which could expand the focus of agricultural development. Although Conway joined Imperial College London in 1969, his work still focused on the Asia-Pacific, and his vision would be implemented in the Ford-funded Multiple Cropping Project (MCP) of Chiang Mai University, Northern Thailand.

In many ways, the MCP transplanted Holling and Conway's multidisciplinary ecology to agricultural research. As a 1980 report reflected, the project analyzed the Chiang Mai Valley as a complex system that raised many questions "in basic science, in experimental methodology and in interdisciplinary interaction."[17] Since multiple cropping was an established practice in the region, the MCP did not intend to impose new production methods, but to evaluate holistically the strength and weakness of existing methods. The advantage of ecology, the report suggested, was to offer a multidisciplinary framework that brought together plant breeders, soil scientists, entomologists, economists and extension workers in the survey of land tenure, water availability, topographical layout of crops and farmers' concerns in adopting Green Revolution technology like high-yielding seeds and fertilisers.

Based on his experience in Chiang Mai, Conway proposed the approach of "agroecosystem analysis" in 1983 to further refine the multidisciplinary framework as a "genuine *interdisciplinary* interaction" which encompassed three steps: first, assembling a group of experts from different backgrounds to define "the objectives of the analysis and the relevant systems, their boundaries and hierarchic arrangement;" secondly, analyzing these system properties through "all the participating disciplines in terms of space, time, flows and decisions;" and finally, generating "a set of agreed key questions for future research or alternatively a set of tentative guidelines for development."[18] While refashioning the multidisciplinary method as interdisciplinary, in essence Conway faithfully reproduced Holling's workshop approach in agricultural development.

Even though this attempt to move beyond disciplinary boundaries was not new, Conway had undoubtedly contributed to the cross-fertilisation of agriculture and ecology in Southeast Asia by introducing "agroecosystem" as an umbrella term to cover the kaleidoscopic concepts – cropping system, farming system, agricultural system, agro-ecosystem – emerging in the aftermath of the Green Revolution. The agroecosystem served as a single, if loosely defined, subject and approach that helped ecologists justify their place in agricultural development and create a unique community. In 1982, six institutions, including Conway's MCP, Sajise's team at the UPLB and Soemarwoto's Institute of Ecology, formed the Southeast Asian Universities Agroecosystem Network (SUAN), thus marking the wider acceptance of ecologists' involvement in agricultural development.

ADAPTATION IMPERATIVE

Among the projects conducted by SUAN ecologists, Soemarwoto's examination of home gardens in rural Java was especially valued in international development circles. Significantly, as the large-scale, agrochemical-intensive monoculture promoted in Green Revolution programs came under increasing scrutiny by the 1980s, small-scale, low-input household gardens became a rising star in agricultural development.[19]

Soemarwoto's team focused on the *talun-kebun* agroecosystem in Java, which alternated between two components: household-managed forests (*talun*) composed of perennial trees providing timber, fibre and fruit; and garden plots (*kebun*) of annual vegetables and fruit created from fully or partially cleared *talun*. A well-managed *talun-kebun* thus served as a stable source of income and food between rice seasons. Apart from its subsistence and economic importance, Soemarwoto elucidated the benefits of *talun-kebun* in preserving genetic diversity and preventing soil erosion. The *talun-kebun*, he argued, was a dynamic production system grounded on farmers' ecological knowledge including the appropriate level of forest clearance, the times to plant and harvest certain garden species, the methods used to prepare and apply compost, and the skills of using bamboo to support the crops and create a multi-layer garden structure.[20]

While highlighting these ecological and economic advantages of *talun-kebun*, Soemarwoto lamented the appropriation of rural resources by plantations and hydroelectric dams promoted by urban policymakers who showed little appreciation for the "ecological wisdom of the people" and thus threatened the "stable and productive home garden system."[21] However, Soemarwoto's goal was not to reject development per se. In his view, the "exploitative relationship" between city and countryside was chiefly caused by asymmetrical information access, and the unbalanced distribution of power could be reformed by enabling villagers "to develop their capabilities in science, technology and organisation."[22] This emphasis on reform within the system was further manifested in Soemarwoto's insistence that, by offering "a stimulus to motivate people to work harder," the "gap" between the countryside and cities constituted not merely a barrier to, but also the *foundation* of, the improvement of rural livelihoods, and that a realistic policy should not aim to eliminate such a gap, but control it "within certain limits" by preventing the "collapse of the society" due to excessive exploitation.[23]

As a result, Soemarwoto's ideas echoed what Holling's collaborators called the "boundary-centered" approach, which preferred the maintenance of a dynamic, if uneven, system over the elimination of these system heterogeneities. In a constantly changing world, Soemarwoto posited ecologists' duty as steering "these changes for the better" and to "face the realities of the world."[24]

In this vision, social stability was to be achieved essentially by incorporating the knowledge of the local population.

By and large, Soemarwoto's view resonated with the strategy of combining development and ecology across the SUAN. In the introductory chapter to an edited volume published by the SUAN in 1984, Sajise praised Soemarwoto's research for elaborating how the ecological features of *talun-kebun* were "influenced by the social status, source of income, and educational background of the owner."[25] For Sajise, the study of Javanese home gardens captured a "circular causality" between the agroecosystem and social system in which "no prime mover status" could be "assigned a priori to any component or force within the total system." As a result, agriculture could not be approached through predetermined goals, but rather through dynamic flows of material, energy and information.[26] By studying the "relative balances of trade" of these systematic flows, ecologists could thus avoid the pitfalls of "many well-meaning attempts at agricultural development" in the past.[27]

Nevertheless, mirroring Soemarwoto's faith in reform within the system, Sajise argued that successful development would happen not by attacking the imbalanced "trade" itself, but by adapting governmental policies to local social and ecological peculiarities. Interestingly, he grounded his argument on an opposition between "Darwinian" and "Marxist" methods of social change: while Darwinism was seen as "probabilistic, multilineal, and continuous," Marxism was "deterministic, unilineal, and finalistic."[28] The equilibrium versus boundary approaches invoked by Holling then morphed into a choice between Marx and Darwin, and Sajise presented the Darwinian path as a better option in formulating adaptive policies.

In another chapter of the 1984 volume, Sajise recounted leading a multidisciplinary project in the Philippine uplands which included "grassland ecology, multiple cropping, reforestation, watershed management, drought tolerance, and soil fertility."[29] With the objective of understanding local farming practices, Sajise reiterated "that the position of the program is to relay the results of the study to the community where it was conducted and *not to decide for the community what must be done*."[30] While these results might or might not encourage communities to participate in local decision-making, the ecologist's job was not to facilitate such participation, but to discover the strengths and limitations of the system as a whole. Consequently, the value of multidisciplinary ecology remained its ability to bring together scientists from diverse backgrounds: whether it could bring together people and policymakers was a question that the communities involved had to figure out for themselves.

CONCLUSION: RECONTEXTUALISING MULTIDISCIPLINARY ECOLOGY

By 1990, due to diminishing funding in agricultural development in Southeast Asia following the end of the Cold War, the SUAN as a platform was replaced by a series of loose personal networks. Soemarwoto and Sajise remained influential leaders in ecology circles by rebranding their work as sustainable development, while Gordon Conway advanced his career in developmental agencies, ultimately becoming te president of Rockefeller Foundation in 1998. Since the 2010s, Conway's vision of the agroecosystem nonetheless began to be attacked by another group of ecologists from the American West Coast who identified themselves with the movement for 'agroecology.'

In his review of Conway's 2012 Book, *One Billion Hungry*, Eric Holt-Giménez criticised Conway for turning a blind eye to "the overwhelming financial power of neoliberal markets and chemical-based plantation agriculture" and attacked his "Doubly Green Revolution" that promised to reconcile peasant-led agroecological practices and industry-led biotechnology as an unrealistic proposal for "bringing an end to hunger without changing the agrarian status quo."[31] In a paper co-authored with his mentor, Miguel Altieri, Holt-Giménez suggested that the "academic and NGO-based history" of agroecology exposed the field "to financial and political cooptation from the food regime's reformist projects," and advocated for "strategic alliances with Radical food sovereignty struggles" to counter this co-optation.

Does such criticism suggest that, through its involvement in apolitical science in Southeast Asia, the democratic potential of multidisciplinary ecology ended up being co-opted into the program of multinational corporations? The picture is probably more complicated. Instead of blaming Cold War funding for neutralising the critical agenda of ecology, a constructive dialogue might be staged by contextualising the emergence, and divergence, of Conway's agroecosystem program and the agroecology of Holt-Giménez and Altieri. Importantly, when Altieri began his study of agroecology at Berkeley in the late 1970s, he also cited extensively from Conway's theory, especially on the properties of the agroecosystem.[32] If agroecology and the agroecosystem have shared roots in systems ecology, studying the ways in which different histories shaped their distinctive politics would be a valuable contribution to the debate. Further investigation is thus needed to determine how the context of Latin America during the 1980s, especially the rise of peasant-based activism to resist agribusiness, influenced the formulation of agroecology.[33]

To conclude, the promise of ecology in facilitating democratic participation is best seen as an ongoing project that, as Holt-Giménez rightly points out, is always entangled with both its history and the future it attempts to create. Apart from distinguishing the radical and reformist programs of ecology, inquiring into the politics of apolitical ecology might also help to rediscover a collective imagination for alternative social and environmental relationships.

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1. Audra Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science* (Baltimore, MD: JHU Press, 2018).

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