

Ecology, Alterity—Art

Lisa McDonald, University of Southern Queensland, Australia

Abstract: It is thought that matter can be invoked through ineffable means, through forces of intuition, inspiration or reflection. From what fragile testimonies and bodily influences arouse. This paper is concerned with the interplay between encounter and insistence in the experimental philosophies of contemporary "emergent" science. It considers how the biological can persuade variations of life that generate natural, social and cultural existence. Through architectural and aesthetic tropes, the writing gestures towards an esoteric materiality as it considers the transformative momentum of bodies offered by advances in fertility science and in regenerative skin technologies, and explores the performative yet quiescent spaces of their lived negotiations. What was once thought the culturally artificial body now grants artful access to scientific knowledge creation through its inherently unsettled nature and the attendance of alteration. Experimentally, this paper wonders if questions of corporeal ecology can be sustained in an era of scientific knowing (still) imbued with vulnerability.

Keywords: Nature, Culture, Regeneration

Every Which Way and a Singular Thinking

With the human body in mind I've been thinking again about the architectural collaborations of the artist-architects Shusaku Arakawa and Madeline Gins whose works in procedural architecture, or architecture which combines "precision and unending invention,"¹ offer strategies for making wild the actions of bodies in the built world. Begun in the early 1970s, I refer to the project *Reversible Destiny: We Have Decided Not to Die*, a project which gives form to revised concepts for living the material effects of design, and has the serious intention of eliminating death; stasis. Yet rather than metaphorise, this philosophy proposes an ethics for living intensely the body made actual through an acceleration of human evolution, an intensity which goes on to produce in "record time the desired result: life without end."² The artists seek out bodily engagement with built form from what remains once all known actions of the body are spent; a type of material alchemy bound up with hope, or a sensory practice whose attempt ignores claims of eternity, but courts the learning of how not to die, the drawing in to the living of life.³

To affect this attempt the work *Architectural Body* asks of spatial logic the questions, "How are transitions from one scale of action to another effected?" "How are transitions from one scale of articulation to another effected?" and "What flows between one part of the atmosphere and another to instigate articulation?"⁴ Echoed here are concerns about the workings of substance and to whom, or to what, such workings are attributed which are concerns also raised in the metaphysics of invention.⁵ The significance of these is effected, to suggest one example, in the nine-unit built residential work *Reversible Destiny Lofts - Mitaka (In Memory of Helen Keller)*. From this work emerges the artists' proposition that

[t]he living body is in desperate need of an architectural context within which to demonstrate right on the spot its capabilities as a whole, ones already included in its repertoire as well as those still to be discovered or invented. These lofts make vivid to their residents the operative tendencies and coordinating skills essential to and determinative of human thought and behavior; which means to say, they manage, by virtue of how they are constructed, to reveal to their residents the ins and outs of what makes a person tick.⁶

Placing into relief the notion of space as impassive, such a proposition seeks incentive from the detail of bodily complexity, the machinations of bodies adrift amid what is intricate and arcane about ordinary life. The "architectural context" these artists pursue involves the body in a conversation about its material potential and what materiality involves. In previous writing, for

example, I have focused on what I understand as the volatile interrelationship between the biological sciences and cultural life—a problematic hinged on logics of disturbance that can also persuade “adventure[s] of hope,” or ways to productively explore the inherently experimental nature of science through the conceptual spaces of disorder, unrest, and anticipation.⁷ In a recent text, for instance, I have explored the emergence of new forms of embodiment and sociality through human interactions with New Reproductive Technologies (NRTs) such as In Vitro Fertilisation (IVF), and non-medicalised interventions into pregnancy and parenting, such as private sperm donor arrangements.⁸ In that text I argued that “representations were often troubled by the inherently ineffable qualities of the absences they stood for,” and that “diverse positions within feminist inquiry were unresolved about reproduction and sexual identity,” the text being primarily concerned with human reproduction in queer lives.⁹

To the extent that representation will usually fail, the search for material (bodily) potentialities in the works of Arakawa and Gins moves away from proposals of cultural inscription in feminist philosophy, from understanding the biological body as cultural artefact,¹⁰ because it calls for a method of engagement between bodies and the discourses which frame them that “follows not natural lines of demarcation visible on the surface but subterranean sources revealed only by a divinatory art.”¹¹ I propose, therefore, a similarly genealogical method, one of conjuring, or divination, with which to unearth what can ordinarily be termed the body in pure sensation, or the body beyond representative frames. In the instances that follow, such a body emerges as pervasive, as inundated by registers of productive “chaos.”¹²

Method

This divinatory method has antecedent qualities, which have, on occasion, been referred to as “water witching,”¹³ and according to apparently known sources, it is thought that divinatory methods can “illuminate the manner in which abstract concepts ... are understood.”¹⁴ In this way, these methods offer the interrogation of cultural life a form of encounter with suggestibility and its cultural significance. The divinatory endeavour in this paper also inflects a Galilean wariness, “And yet it does move,”¹⁵ but proposes a complex logic of incredulity with which to surround the ineffable qualities of matter with an array of possible effects.

To continue, “dowsing,” the other term for divining, has, in itself, been thought an extremely simple method which requires a responsive body, a branch of wood, or other conductor such as a pendulum or a pair of metal or copper rods, a subterranean font, and an ability to engage an exactitude which is effective yet indistinct. Such an indistinct exactitude can nevertheless be a “locus for social, cultural and natural transformations: it is not simply a convenient space for movements and realignments but in fact is the only place ... where becoming [and] openness to futurity, outstrips the conservational impetus to retain cohesion and unity.”¹⁶ This method invariably involves risk, and can be said to inform the radical architecture of Arakawa and Gins as well as give form to the material potential they seek, like a nod toward futurity through transformation.¹⁷

But despite the mischievous nature of this proposal, as noted above, the qualities of divining drew significant attention back in the mid-1950s when dowsing investigators proposed a physical theory for the intricate interaction between dowsing phenomena and the body. One writer suggested that through “unconscious motor activity on the diviner’s part,” the dowsing body takes up “physical forces such as rays or fields that act directly upon the muscles of the forearm to produce the ‘dowsing reflex,’ and [that] this muscular reflex, in turn, manifests itself in the rod’s movement.”¹⁸ While this attempt situated divining within taxonomic thinking, the question of the origin of such physical forces remained unresolved.

Another earlier inquiry in 1926 put forward a cognitive theory which asserted that a

dowser...[was] a person endowed with a subconscious supernormal cognitive faculty, which, its nature being unknown, we call...cryptesthesia. By means of this

cryptesthesia, knowledge of whatever object is searched for enters the dowser's subconscious and is revealed by means of an unconscious muscular reaction.¹⁹

The framing of the dowsing body through this quasi-paranormal notion held its possible zones of production within psychological concepts, within modes of thought still concerned with intentionality at the level of the subject.²⁰ While support still exists for the notion of a material manifestation of the subconscious,²¹ the proposal of a mechanised movement of conjuring situates dowsing amid a material momentum set within a play of irregular forces. Divination, in that understanding, not only depended on modes of invocation, but on the type of instrument used in correlation with the diviner's grip,²² a correspondence, or relay, between the sentient and the still, the animate and the calm—tighten your grip and you suspend the sensation. Relax it, and possible zones of conveyance are stirred. The exclamation, “And yet it does move,”²³ is, then, a call from beyond the sign, a cry towards force side lit by surprise.²⁴

Speculations

The import of a divinatory method as good to think with “outstrips the conservational impetus to retain cohesion and unity”²⁵ for its own sake, and can, albeit on a partial basis, return experimental science to its “transformative theatres of origin” which gave it a structure for empirical credibility.²⁶ This deliberative structure is thought to underpin the greatness of “good science,” that is, science that remains vulnerable, experimental and interpretive.²⁷ It is this volatile structure which can also be evidenced in more recent experimental ventures in the life sciences that attend to the generative potential of the human body but which don't, for the most part, attempt to resolve it. The research informing this paper rests on conversations with a fertility scientist and a burns specialist²⁸ and reveals concepts which sit on the edge of knowledge creation about both somatic generation and regeneration. The research is part of an ongoing project concerned, as I have mentioned above, with exploring the volatile interrelationship between the biological sciences and cultural life.²⁹ At its heart, it is therefore also concerned with broader debates about coexistence between the life sciences and the humanities.³⁰

If it is true, as one writer has proposed, that it is a biological perspective of the body “as truly corporeal, that will lead us into new understandings of how we inhabit society and what it means to embody the social,”³¹ then finding an ontological structure for what is “truly corporeal” presents certain risks from within humanities thought. Even though the effect of the apparent “two cultures” conflict between science and non-science has been made less complex over time than its initial concerns proposed,³² this thought continues to inform arts and humanities inquiry, at least in what can be persuasively described as “Western thought.”³³

But in proposing that the body is not only the object of biological science, an expansion on the hold that biological determinism, as a point of departure for thought about the body, takes place. Such a departure is mobile in these revised philosophies for the body and suggests that we more closely examine previously held propositions in seminal feminist thought which had argued that bodies were artefactual, or socially inscribed, that bodies were “produced as cultural objects and as experiencing subjects through the active rewriting, and thus cultural unhinging, of biological materials.”³⁴ The reappearance of biology as a generative trope through which feminism might gain ontological traction opens out possibilities for thinking the body. Following Grosz, these possibilities are based on the composite and generative effects of scientific deliberation, cultural knowledge, and dialogic engagements, their import often unnoticed by the edifying optics of less speculative quests in empirical reason.³⁵

Divining “beyond the sign,” then, helps to sidestep common concepts of textual production to reveal a proposal for text as a transmission of matter, a material relay which “signs last [as well as] first,”³⁶ effecting a “philosophy of taking on ... tradition[s] ... in view of [the] countersignature[s] that [are otherwise written].”³⁷ Through a transmissive exchange we can further ask if the text will remain a “textile ... [an] interweaving [of already] ... intense

overcodings, a fully semiotized model of textuality”³⁸ Or, if the text will explode in the manner of a tiny bomb, “scatter[ing] thoughts and images into different linkages or new alignments without necessarily destroying them”³⁹

Enigmatica

In the company of Elizabeth Grosz we can glance at the limits of textual production while scrutinising its ineffability. In the excerpt below, tiny explosions are set, if not yet detonated, in words derived from those of the Austrian physicist Erwin Schroedinger. The concern here is the taming of bodily chaos, which strains towards an ecological view of the body, yet retains a volatile reticence, one which nonetheless offers a workable spatiality for chaotic force. Here are the words:

A body is produced from other bodies, and its cohesion and continuing existence and integrity is contingent upon its ability to glean energy from other bodies, the bodies it ingests and from which it gains energy to continue its existence and proliferate itself in its products, including its offspring. This was...Schroedinger’s response to the biological dilemma that physics posed to the study of life. If all physical systems tend towards disorganisation and disorder, maximum entropy or thermodynamic equilibrium, then how does the living organism avoid decay?⁴⁰

For Schroedinger, a logic aligned with integration explained the problem: “The obvious answer,” he said, “is by eating, drinking, breathing and (in the case of plants) assimilating.”⁴¹ Grosz explains further that “[w]e prevent ourselves from plunging into atomic simplicity ... through the assimilation, in effect, the annihilation, of other organic existences ... Bodies thus live in debt to the life that they destroy. They must give back something of themselves, of their own bodily cohesion, for anything more than mere existence to be possible.”⁴² Schroedinger’s awkward encounter senses something about what constitutes corporeal relations in the contemporary life sciences, yet carries with it a weighty hesitation towards questions of bodily making—what are the characteristics, if you like, of a logic of alteration that we so preparedly avoid? And in our avoidance, what are the wagers bodies make towards their own intensification which might otherwise resolve through coherence?

Appearance

Beneath the structure of sensation exists a zone of vertigo—what is not quite regular, but what creates intently a sense of material in/cohesion, where “sense” involves not only what is based on perception, but on the notion of material acts which reverberate against known modes of reception—a material thinking of oscillations and eddies.⁴³ For Deleuze, for example, this is a relay of middles which are alert to coalition, but which avoid merger. It is “in the disjunction ... that the outside is active in the production of an inside...[T]he middle is always the privileged point to begin.”⁴⁴ It is from this middling gesture that a conversation about the science of treating clinical burns, specifically, the science of skin tissue engineering, began.

Well known in Australia for her work during a time of national trauma, my participant’s research has contributed to the broader medical interest in generativity manifest in the technology of regenerative skin, colloquially termed “spray on skin.” Such a process is based on producing new skin from existing somatic cells that have been harvested from a productive area of a burns patient’s body. The cells are clinically treated then reintroduced to the site of injury, a practice which enhances the body’s own capacity for cellular repair.⁴⁵

The technology has been developed through the question of why the body heals by scar, and the process continues to raise further questions about the origin of life. In this instance, these questions ask what “tips the scales” towards scarless healing when a body repairs unaided, and what pushes intracellular life entirely off the plane of a body’s self-organising differential when

it doesn't? If a body can be overwhelmed with injury, if it can rest on the limits of its endurance, how is the arrest of its dying, the pull towards life, established at the level of cellular recovery?⁴⁶

This is a weighty series of questions which is not often given the time, or indeed the speculation, it deserves. From within a project of discourse analysis, for instance, such a puzzle would take shape through illuminating the narratives of scientific discovery, of what are otherwise thought to be the indeterminate meanderings of scientific exploration.⁴⁷ While the language of science does tend towards opacity, is less inclined towards the volatile, relaxing the demands of discourse thinking, as well as the persistence of cultural mediation as good to think with,⁴⁸ opens out the trope of intensification inherent in the histories and negotiations of technoscientific endeavour.⁴⁹ Through a comprehensive study of both technoscience and its cultural and political life, Donna Haraway draws attention to this very point:

The technical, textual, organic, historical, formal, mythic, economic, and political dimensions of entities, actions, and worlds implode in the gravity well of technoscience—or perhaps of any world massive enough to bend our attention, warp our certainties, and sustain our lives. Potent categories collapse into each other. [...] Determining what constitutes each dimension takes boundary-making and maintenance work. In addition, many empirical studies of technoscience have disabled the notion that the word technical designates a clean and orderly practical or epistemological space. Nothing so productive could be so simple.⁵⁰

Such attention allays majestic overtures and the pursuit of logical resolution and allows what is surprising and unruly to coexist with the grit and granularity of scientific practice through antecedent, but not separable, epistemologies. In the science of clinical burns, this coexistence is articulated in a curiosity with the detail of cellular interdependence. Here, interdependence does not signify a cell's cohesive relationship with another cell. Rather, it signals only the potential for cohesion beyond an initial structure. The term for this interdependence is "self-organization," which, according to cell biologist Tom Misteli, refers to

the physical interaction of molecules in a steady-state structure. [...] Self-organization in the context of cell biology can be defined as the capacity of a macromolecular complex or organelle to determine its own structure based on the functional interactions of its components. In a self-organizing system, the interactions of its molecular parts determine its architectural and functional features. The processes that occur within a self-organized structure are not underpinned by a rigid architectural framework; rather, they determine its organization.⁵¹

In broaching the question of such a capricious alliance with my interviewee, I explained that my recent line of inquiry into relations between the humanities and life sciences seemed equally volatile, often forcing me into feelings of theoretical trespass. I asked how someone working in the area of clinical burns would speak about self-organization to a researcher on the outside of scientific practice. These were the words:

I was brought up with ... medical training that was very mechanistic; the heart's a pump, the brain and the nervous system are electric cables, so that we could ground our understanding, and our experimentation ... and, therefore, our future understanding of the body in terms that we were well educated in [such as basic physics]. So I can see why that was sort of the anchor to the hot air balloon, if you like. But I think that's been well and truly cut because [now we see that] the body is a self-organizing system and when you start to look at the mathematics of self-organization ... in that spectrum, it's fascinating to understand that every body is unique. So sure, we can try and put people in pigeon holes or boxes, but in burns injury that is really hard because the number of

responses are so different ... [T]his mechanistic thing, it's long gone because we understand the element of the unique[.]⁵²

The conversation then turned to the range of influences in surgical training which were, it appeared, often outside of the usual zones of sense-making in the field. Referring, in particular, to the biological arts collaborative *SymbioticA*, thoughts were conveyed which served to demonstrate the epistemological stretch toward speculative inquiry in the science of regenerative skin, this time through creative endeavour:

[G]oing beyond surgery and beyond science and...looking at the [work] at UWA...you're looking at the system that they look at for [making] real time art. Real time investigation of cell systems is hugely interesting...What regulates that system of cells? How does it know when to stop? When [does] this self-organization stop? How do we know that that's enough skin and...don't keep producing it [and so on]...⁵³

Referred to here is a video artwork produced from a cluster of cells intent on doing something reparative to the broken spinal cord of a goldfish, but no one is really sure what that is. The nearest word is probably regeneration, probably a rhetoric which collides with "sense," yet one which figures the encounter as outside of itself; the exterior to "the intentional object of a subject," and thus its domination in thought.⁵⁴ Poetically inclined, I can speculate here that while "acts [do] have their effects even if no one receives them,"⁵⁵ the reception is less about these acts than the disjunction they intensify, about what the collision with sense ignites as impossible array. What would such an arrest, an encounter with "the unique" at the level of cellular suspension, involve?

It may be possible to follow here with a notion of art that puts into relief questions of capability but facilitates thought towards actions that work underground. "Below the level of the subject ..." as Nietzsche reflected, may be a type of cytoplasmic simplicity that likes a good view and is focused at "the level ... of cells themselves."⁵⁶

If we expand from Deleuze his interest in montage, the term "art" is, here, the art of "affect more than [of] representation[.] [A] system," as Grosz conveys, "of dynamised and impacting forces rather than a system of unique images."⁵⁷ This manoeuvres the notion of singularity closer to that of distinction, and offers an approach to the generative which extracts momentary, perhaps strategic, alliances from coexistence. This tactic is not news to artists whose purpose is to "draw on and over chaos," to proffer questions of representation as already out of time.⁵⁸ But in performing the science of generativity, the problem of chaotic encounter is elaborated along particular lines of distinction, those which also invite a "refrain," a "[resonance returned] to form, ... a delimited space, [but] a space nonetheless always open to the chaos from which it draws its force."⁵⁹ This is the hope for a language which responds equally to sensation and conviction, and is evident in this reflection:

...the more I look at [scientific evidence] the more I'm thinking, 'How solid is this evidence?' ...I was at a function...with...one of the Nobel Prize winners in Chemistry [who helped discover the Carbon 60 fullerene, or 'buckyball']...and he said that objectivity is merely infinite subjectivity...and I'm thinking, 'Yes...he's got it there.' [In my area] the whole idea that you can...experiment and change one parameter [and] get a result, and everybody's happy...put that into the clinical situation where you've got [a] whole raft of things influencing...that self-organising system...you can't do a prospective randomised trial and hold everything still and measure one variable. It just doesn't happen...[T]hat level of slippage, if you like, is very uncomfortable for a lot of people.⁶⁰

How does one touch what renders here as a starting in the middle of the already variable? What would such an intellectual sensation allow?

Glint/Glance

From a conversation with a reproductive biologist about the production of sperm from somatic cells, a technology originally intended to enable fertility outcomes for infertile men, comes reflection about the interface between nature and culture. In recent years the experimentation has shifted to a focus on the production of cells in the male of the species which resemble the ovum found in females. Originally practised at the level of the rodent, the project sparked a “public outcry” and induced a fear that “... men will be able to produce egg [cells]” and in their wake, a reversal of the much mythologised parthenogenesis that reproductive technologies have inspired.⁶¹ But the experimentation can also consolidate what occurs in nature even though it provokes conjecture about much that is unknown:

[W]e have no idea whether [the cells] will be able to complete their maturation and fertilise in the dish...The idea was grandiose because you use a male stem cell and...[create] eggs from [that]. [But] if you think about it, it's a natural event. When you remove all the things that affect a male phenotype⁶² then by default it will [become] a female phenotype. So it's not a strange thing...That's how it happens.⁶³

The results of this work were also based on error, where “[t]he thing that I...really...wanted [was] to...replace sperm...[So this] was...a great development...I can't actually say a lot about it because I don't know a lot about it at the moment.”⁶⁴ These reflections as well search for a language that will do the work of intensification beyond the limits of evidence-based research, but the attempt fails when sense-making finds no object, an event which draws our attention to the limits of relational equivalence that have characterised the semiotic model and informed both the social and hard sciences.⁶⁵

But objectlessness here is also productive, showing equally the trauma and the enlightenment of post-taxonomic moments. It calls us toward irregular topographies of force which redefine questions of influence and tendency in the languages of alteration. What appears as the “material thinking” of the ineffable nature of production, its chaotic generativity, is also the effect of intensification as immediate, immersive, and strangely unequivocal—the “middle,” but not necessarily the centre, of the vortex.⁶⁶

Alt...

In writing by Elizabeth Grosz which focuses on the “ontology, the materiality and logical structure of art,”⁶⁷ is found the proposal that

[a]rt ... does not produce concepts, though it does address problems and provocations. It produces sensations, affects, intensities, as its mode of addressing problems, which sometimes align with and link to concepts, the object of philosophical production, the way philosophy deals with problems.⁶⁸

This form of alignment tempts representative logics away from purely arbitrate functions and conveys “a certain residue of activity from [their] former role...[a] rhythm without regularity, or a readiness to arrive and relay in certain ways.”⁶⁹ It is in this “certain residue of activity,”⁷⁰ that the effect of a subjective stratification can be grasped momentarily, buoyantly, and productively in action.⁷¹ Thus “chasing nature,” “divining,” or in scientific terms “enhancing the capacity of the human body,” involves questions of time—the rate at which a hoped for advance can be achieved within a hybrid array of co-existent possibilities. Why else would the notion of self-organization entice logics of emergence if not to appeal to “an alterity that is itself subjective,” that is already opposed to self-referentiality and the promise of its own guarantee?⁷² The work of alteration is also a defiance of what is thought useful, of what grapples for utility, in

an (intellectual) era intent on displacing what we already know is the “chaotic indeterminacy of the real, its impulses to ceaseless variation[.]”⁷³

This writing, then, has gestured toward the contemplation of the transformative, yet has equally tempted an ecology of secrets intent on placing recent propositions of ecology at stake. An “ecological thinking” is thus a material thinking *with* the body which may make no sense at all but which may make it in precariously exacting ways.

Acknowledgements

The research informing this paper was supported by the Faculty of Humanities and Social Sciences Strategic Initiatives Grants Scheme at the University of Adelaide and the Australian Government, Department of Education through the *Digital Futures-Collaborative Research Network* at the University of Southern Queensland.

NOTES

¹ Shusaku Arakawa and Madeline Gins, “Reversible Destiny Lofts – Mitaka (In Memory of Helen Keller),” accessed May 18, 2014, <http://www.reversibledestiny.org/reversible-destiny-lofts-mitaka-%E2%96%91%E2%96%91-in-memory-of-helen-keller/>

² Shusaku Arakawa and Madeline Gins, “Hotel Reversible Destiny,” *Europaconcorsi: For Architects Only*, accessed May 18, 2014, <http://europaconcorsi.com/projects/17743-Arakawa-Madeline-Gins-Hotel-Reversible-Destiny>

³ Arakawa and Gins, “Reversible Destiny Lofts.”

⁴ Shusaku Arakawa and Madeline Gins, “Architectural Body,” in *Reversible Destiny: We Have Decided Not to Die* (New York: The Solomon R. Guggenheim Foundation, 1997), 171-175.

⁵ See Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (London: Macmillan and Co, 1960).

⁶ Shusaku Arakawa and Madeline Gins, “Reversible Destiny Lofts.”

⁷ Mary Zournazi, “A ‘Cosmo-Politics’ – Risk, Hope, Change: A Conversation with Isabelle Stengers,” in *Hope: New Philosophies for Change* (Annandale, NSW: Pluto Press Australia, 2002), 245.

⁸ Lisa McDonald, *Figuring Fertility: Poetics in the Cultural Practices of Reproductive Science* (Mt Gravatt, QLD: Post Pressed, 2011).

⁹ McDonald, *Figuring Fertility*, 10.

¹⁰ See Elizabeth Grosz, *Volatile Bodies: Toward a Corporeal Feminism* (St Leonards, NSW: Allen & Unwin, 1994).

¹¹ Michael Naas, *Taking On The Tradition: Jacques Derrida and the Legacies of Deconstruction* (Stanford, CA: Stanford University Press, 2003), 78.

¹² See Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham and London: Duke University Press, 2002) and Elizabeth Grosz, *Architecture from the Outside: Essays on Virtual and Real Space* (Massachusetts: Massachusetts Institute of Technology, 2001).

¹³ Evon Z. Vogt and Ray Hyman, *Water Witching U.S.A.* (Chicago: University of Chicago Press, 1959).

¹⁴ Sarah Iles Johnston, “Introduction,” in *Mantikê: Studies in Ancient Divination*, eds. Sarah Iles Johnston and Peter T. Struck (Boston: Brill, 2005), 4.

¹⁵ Vogt and Hyman, “Why does the rod move?” in *Water Witching*, 121.

¹⁶ Elizabeth Grosz, *Architecture from the Outside*, 92.

¹⁷ Arakawa and Gins, “Architectural Body.”

¹⁸ Vogt and Hyman, “Why does the rod move?” in *Water Witching*, 127.

¹⁹ Barrett and Besterman, in Vogt and Hyman, *Water Witching*, 127.

²⁰ Harvey J. Irwin, *The Psychology of Paranormal Belief: A Researcher’s Handbook* (Hertfordshire, UK: University of Hertfordshire Press, 2009).

²¹ Jesse Hong Xiong, *The Outline of Parapsychology* (Lanham, MD: University Press of America, 2009).

²² Vogt and Hyman, *Water Witching*, 127-132.

²³ See again Vogt and Hyman, “Why does the rod move?” in *Water Witching*, 121.

²⁴ Massumi, *Parables for the Virtual*.

²⁵ Grosz, *Architecture from the Outside*, 92.

²⁶ Donna J. Haraway, *Modest_Witness@Second_Millennium. FemaleMan©_Meets_OncoMouse™: Feminism and Technoscience* (New York and London: Routledge, 1997), 179.

²⁷ Haraway, *Modest_Witness@Second_Millennium*.

²⁸ Pseudonyms are used for reasons of confidentiality in an ongoing research project.

²⁹ See Elizabeth Grosz, *The Nick of Time: Politics, Evolution and the Untimely* (Crowds Nest, NSW: Allen and Unwin, 2004).

³⁰ See Lisa McDonald, “A Possible Science: Topologies of Interest in Corporeal Cultural Flows,” *The International Journal of Science in Society* 1(1) (2009): 69-77.

³¹ Elspeth Probyn, *Blush: Faces of Shame* (Sydney, NSW: University of New South Wales, 2005).

- ³² Paul Grobstein and Eleanor A. Bliss, "Two Cultures or One?" *Serendip*, accessed 12 December, 2014, http://serendip.brynmawr.edu/sci_cult/TwoCultures.html
- ³³ Stefan Collini, "Introduction" in C.P. Snow and Stefan Collini, *The Two Cultures* (Cambridge, UK: Cambridge University Press, 2003), vii–xxi. See also Lisa McDonald, "Writing, with, t/error. And calling on the body of an artist," *Cultural Studies Review* 13(2) (2007): 72.
- ³⁴ Elizabeth Grosz, *Time Travels: Feminism, Nature, Power* (Crows Nest, NSW: Allen and Unwin, 2005), 3.
- ³⁵ Grosz, *The Nick of Time*.
- ³⁶ Naas, "Lacunae," in *Taking On The Tradition*, 76–77.
- ³⁷ Naas, "Lacunae," in *Taking On The Tradition*, xviii.
- ³⁸ Grosz, *Architecture from the Outside*, 58.
- ³⁹ Grosz, *Architecture from the Outside*, 58.
- ⁴⁰ Elizabeth Grosz, "Naked," in *Impossible Presence: Surface and Screen in the Photogenic Era*, ed. Terry Smith (Sydney, NSW: Power Publications, 2001), 213.
- ⁴¹ Erwin Schroedinger, in Grosz, "Naked," 213.
- ⁴² Grosz, "Naked," 213.
- ⁴³ See the reflections on Judith Butler and Gilles Deleuze in Ausch, Robert, Doane, Randal and Perez, Laura, "Interview with Elizabeth Grosz," *Found Object 9*, accessed June 3, 2010, <http://csetw.commons.gc.cuny.edu/> See also the writing of Paul Carter, *Material Thinking: The Theory and Practice of Creative Research* (Melbourne: Melbourne University Press, 2004).
- ⁴⁴ Grosz, *Architecture from the Outside*, 69.
- ⁴⁵ *Transcript of Taped Interview with Dr Claire Mackey* [pseud], (Perth, Western Australia, 3 July, 2006), 1.
- ⁴⁶ *Transcript of Taped Interview with Dr Claire Mackey* [pseud], (Perth, Western Australia, 3 July, 2006), 1.
- ⁴⁷ See, for example, the seminal text written by Bruno Latour, Steve Woolgar and Jonas Salk, *Laboratory Life: The Construction of Scientific Facts* (Princeton University Press, 1986). While this does more than acquiesce to the paradigms of discourse thinking, it lamentably returns the study of the institutional practices of scientists to the question of irony in discourse analysis. It is the case in this paper, however, that attention is turned more to questions of readability; of whether a text is identifiable and readable, than to the way it represents, or prefigures, a particular action or event as institutional practice.
- ⁴⁸ See for instance Scott Lash and Celia Lury, *Global Culture Industry: The Mediation of Things* (Malden, MA: Polity, 2007).
- ⁴⁹ See again Haraway, *Modest_Witness@Second_Millennium*.
- ⁵⁰ Haraway, *Modest_Witness@Second_Millennium*, 68.
- ⁵¹ Tom Misteli, "The concept of self-organization in cellular architecture," *The Journal of Cell Biology* 155(2) (2001): 181–185, accessed December 16, 2014, <http://www.jcb.org/cgi/doi/10.1083/jcb.200108110>
- ⁵² *Transcript of Taped Interview with Dr Claire Mackey* [pseud], 2.
- ⁵³ *Transcript of Taped Interview with Dr Claire Mackey* [pseud], 3, my emphasis. *SymbioticA* is based in the School of Anatomy and Human Biology at the University of Western Australia. See also the website *SymbioticA Biological Arts*, accessed April 29, 2014, <http://www.symbiotica.uwa.edu.au>
- ⁵⁴ Ausch, Robert, Doane, Randal and Perez, Laura, "Interview with Elizabeth Grosz," *Found Object 9*.
- ⁵⁵ Ausch, Robert, Doane, Randal and Perez, Laura, "Interview with Elizabeth Grosz," *Found Object 9*.
- ⁵⁶ Ausch, Robert, Doane, Randal and Perez, Laura, "Interview with Elizabeth Grosz," *Found Object 9*.
- ⁵⁷ Elizabeth Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," *IDEA Journal*, 2005, 15.
- ⁵⁸ Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," 17.
- ⁵⁹ Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," 23.
- ⁶⁰ *Transcript of Taped Interview with Dr Claire Mackey* [pseud], 3–4, my emphasis. "Buckyball" is the abbreviated term for buckminsterfullerene, a word derived from the name of the American architect, thinker and inventor Richard Buckminster Fuller who developed the geodesic dome. The Carbon 60 fullerene resembles the shape of the dome, hence the emergence of the term "buckyball." See also "The Nobel Prize in Chemistry 1996," *Nobelprize.org*, accessed October 25, 2007, http://nobelprize.org/nobel_prizes/chemistry/laureates/1996/press.html
- ⁶¹ *Transcript of Taped Interview with Dr Alexandria Richmond* [pseud], (Melbourne, Victoria, 29 November, 2005), 2. See also Lisa McDonald, *Figuring Fertility*.
- ⁶² The term "phenotype" refers to a visible characteristic of an organism resulting from the interaction between its genetic makeup and the environment, *Biology Online*, accessed May 19, 2014, <http://www.biology-online.org/dictionary/Phenotype>
- ⁶³ *Transcript of Taped Interview with Dr Alexandria Richmond* [pseud], 2.
- ⁶⁴ *Transcript of Taped Interview with Dr Alexandria Richmond* [pseud], 2–3.
- ⁶⁵ See again McDonald, "Writing, with, t/error," 72.
- ⁶⁶ See also Elaine Scarry, *The Body in Pain: The Making and Unmaking of the World* (New York and Oxford: Oxford University Press, 1985), and Donna J. Haraway, *When Species Meet* (Minneapolis: University of Minnesota Press, 2008).
- ⁶⁷ Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," 15.
- ⁶⁸ Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," 15.
- ⁶⁹ Massumi, *Parables*, 20.
- ⁷⁰ Massumi, *Parables*, 20.
- ⁷¹ See for instance Paul Bains, "Subjectless Subjectivities," in Brian Massumi, ed., *A Shock to Thought: Expression after Deleuze and Guattari* (London and New York: Routledge, 2002), 101–116.

⁷² See again Bains, "Subjectless Subjectivities."

⁷³ Grosz, "Chaos, Territory, Art. Deleuze and the Framing of the Earth," 17.

REFERENCES

- Arakawa, Shusaku, and Madeline Gins. "Hotel Reversible Destiny." *Europaconcorsi: For Architects Only*. Accessed May 18, 2014. <http://europaconcorsi.com/projects/17743-Arakawa-Madeline-Gins-Hotel-Reversible-Destiny>
- . "Reversible Destiny Lofts – Mitaka (In Memory of Helen Keller)." Accessed May 18, 2014. <http://www.reversibledestiny.org/reversible-destiny-lofts-mitaka-%E2%96%91%E2%96%91-in-memory-of-helen-keller/>
- . Arakawa, Shusaku, and Madeline Gins. *Reversible Destiny: We Have Decided Not to Die*. New York: The Solomon R. Guggenheim Foundation, 1997.
- Ausch, Robert, Doane, Randal, and Perez, Laura. "Interview with Elizabeth Grosz." *Found Object 9*. Accessed June 3, 2010. <http://csctw.commons.gc.cuny.edu/>
- Bains, Paul. "Subjectless Subjectivities." In *A Shock to Thought: Expression after Deleuze and Guattari*, edited by Brian Massumi. London and New York: Routledge, 2002, 101-116.
- Bergson, Henri. *Creative Evolution*. Translated by Arthur Mitchell. London: Macmillan and Co, 1960.
- Biology Online*. "Phenotype." Accessed May 19, 2014. <http://www.biology-online.org/dictionary/Phenotype>
- Carter, Paul. *Material Thinking: The Theory and Practice of Creative Research*. Melbourne: Melbourne University Press, 2004.
- Grosz, Elizabeth. "Chaos, Territory, Art. Deleuze and the Framing of the Earth." *IDEA Journal*, 2005, 15-28.
- . *The Nick of Time: Politics, Evolution and the Untimely*. Crows Nest, NSW: Allen and Unwin, 2004.
- . *Architecture from the Outside: Essays on Virtual and Real Space*. Massachusetts: Massachusetts Institute of Technology, 2001.
- . "Naked." In *Impossible Presence: Surface and Screen in the Photogenic Era*. Edited by Terry Smith. Sydney, NSW: Power Publications, 2001, 209-221.
- . *Volatile Bodies: Toward a Corporeal Feminism*. St Leonards, NSW: Allen & Unwin, 1994.
- Haraway, Donna J. *When Species Meet*. Minneapolis: University of Minnesota Press, 2008.
- . *Modest_Witness@Second_Millennium. FemaleMan©_Meets_OncoMouse™: Feminism and Technoscience*. New York and London: Routledge, 1997.
- Irwin, Harvey J. *The Psychology of Paranormal Belief: A Researcher's Handbook*. Hertfordshire, UK: University of Hertfordshire Press, 2009.
- Johnston, Sarah Iles. "Introduction: Divining Divination." In *Mantikê: Studies in Ancient Divination*. Edited by Sarah Iles Johnston and Peter T. Struck. Boston: Brill, 2005, 1-28.
- Lash, Scott and Celia Lury. *Global Culture Industry: The Mediation of Things*: Malden, MA: Polity, 2007.
- Latour, Bruno, Steve Woolgar, and Jonas Salk. *Laboratory Life: The Construction of Scientific Facts*. Princeton University Press, 1986.
- McDonald, Lisa. *Figuring Fertility: Poetics in the Cultural Practices of Reproductive Science*. Mt Gravatt, QLD: Post Pressed, 2011.
- . "Writing, with, t/error. And calling on the body of an artist." *Cultural Studies Review* 13(2) (2007): 66-76.
- Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham & London: Duke University Press, 2002.

- Misteli, Tom. "The concept of self-organization in cellular architecture." *The Journal of Cell Biology* 155(2) (2001): 181–185. Accessed December 16, 2014, <http://www.jcb.org/cgi/doi/10.1083/jcb.200108110>
- Naas, Michael. *Taking On The Tradition: Jacques Derrida and the Legacies of Deconstruction*. Stanford, CA: Stanford University Press, 2003.
- Nobelprize.org*. "The Nobel Prize in Chemistry 1996." Accessed October 25, 2007. http://nobelprize.org/nobel_prizes/chemistry/laureates/1996/press.html
- Scarry, Elaine. *The Body in Pain: The Making and Unmaking of the World*. New York and Oxford: Oxford University Press, 1985. *SymbioticA Biological Arts*. Accessed April 29, 2014. <http://www.symbiotica.uwa.edu.au>
- Vogt, Evon Z., and Ray Hyman. *Water Witching U.S.A.* Chicago: University of Chicago Press, 1959.
- Xiong, Jesse Hong, *The Outline of Parapsychology*. Lanham, MD: University Press of America, 2009.
- Zournazi, Mary. "A 'Cosmo-Politics' – Risk, Hope, Change: A Conversation with Isabelle Stengers." In *Hope: New Philosophies for Change*. Annandale, NSW: Pluto Press Australia, 2002.

Interview Transcripts

- Transcript of Taped Interview with Dr Claire Mackey* [pseud]. Perth, Western Australia, July 3, 2006.
- Transcript of Taped Interview with Dr Alexandria Richmond* [pseud]. Melbourne, Victoria, November 29, 2005.

ABOUT THE AUTHOR

Dr. Lisa McDonald: Mid-Career Research Fellow, Digital Futures-Collaborative Research Network, University of Southern Queensland, Toowoomba, Queensland, Australia

A typeset version of this paper is available from Common Ground Publishing:

McDonald, L. 'Ecology, Alterity—Art,' *The International Journal of Science in Society*, February 2015, vol. 6. no. 2, pp. 13-23. ISSN: 1836-6236 Available at:
<http://ijy.cgpublisher.com/product/pub.187/prod.311>