Unmakers of Waste

Session 18

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Objects of Desire as Agents of Change

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This paper focuses on a variety of pioneering works made within the last fifteen years that challenge the paradigms of contemporary high-end furniture design through provocative and unorthodox pieces made out of trash. Positioned as objects of desire in a high-end marketplace, they persuade away the stigma attached to their unlikely component parts, elevating waste into a whimsical signifier that triggers associations and invites thought and discussions beyond mere judgments of taste. The designers whose work is explored herein each approach an aspect of the waste problem with processes that reflect their cultural contexts and concerns, embedding human ingenuity, art, meaning, community uplift, and instruction in striking utilitarian guises.

The work of these designers seduces in the vernacular of luxury goods, delivering guiltless pleasure with subtext in venues that rely on sophisticated, far-reaching marketing techniques to generate interest in the latest trends. There is a receptive, ready-made audience for this work in avidly acquisitive cosmopolites seeking cutting edge design, novelty, and provocation—a subset of affluent consumers who, despite experiencing some discomfort at the margins of their consciousness around the crisis of sustainability, resist altering their entrenched lifestyles and habits.

In their appearances in the design media, furniture fairs, and galleries, these pieces act as visual manifestoes, modeling the viability of all manner of consumer waste as a raw material. Without exception, the examples presented in this paper have garnered attention and acclaim, winning awards, spicing up international furniture fairs, fetching high prices, and generating public and private commissions. Although these designers work autonomously in discreet contexts, in this era of hyper-connectivity their ideas have spread throughout the world, inspiring creative agency in other renegade do-it-yourselfers, makers, artists, and activist-entrepreneurs.

This design phenomenon does not presume to represent a panacea to the critical problem of waste; rather, it is an appealing contribution to the aggregate of engagement by which a shift in the ethos of consumption can be brought about and the principles of the circular economy realized.

Keywords: Furniture design, upcycling, waste, reuse, art
Objects of Desire as Agents of Change

A 2012 World Bank report on waste generation found that nearly half of the over 2.6 trillion tons of trash generated that year were produced by higher-income, urbanized sectors of the planet (Hoornweg and Bhada-Tata 2012, 8-9). This paper addresses mitigation of this problem by furniture designers—from distinct cultural contexts and working in place-specific methodologies—who see waste as an opportunity for creative intervention. Their work demonstrates the power of design as a platform to subversively change our view of trash and offer practical solutions for reuse.

High-end furniture design has traditionally derived its cachet and value not only from formal qualities that suggest the ne plus ultra of taste for a particular period, but also by dint of materials that epitomize enduring luxury. In recent years, furniture pieces that challenge this system of valuation—designs constructed from materials usually classed as “trash”—have increasingly chipped away at the circumscribed boundaries of so-called “high” design. A new generation of designers is exhibiting a renegade flair in pursuit of sophisticated formal innovation. Pragmatism and an underlying moral ethos drive experiments that untether materials from planned obsolescence and refashion them into objects of beauty and utility.

The abundance of mass-produced consumer discards activates these designers’ imaginations. They spot beauty and opportunity in materials retrieved from dumpsters, plucked up from the ground, mined from factory scraps, and ripped from defunct machines. Lamps of magazines and old cassette tapes, chairs of wire hangers and aluminum pull tabs, pendant lights of Styrofoam cups and plastic spoons: through these

Figure 1: Clockwise from top left: Aaron Kramer, A Wine Cork Chair, 2012, corks; Heath Nash, Bottleformball, 2009, waste plastic; Marcia Stuermer, Refuse Refuge Chaise, 2003, resins, found street trash, aluminum; Boris Bally, Broadway Armchairs, re-used aluminum traffic signs, champagne corks, steel hardware, 2009.
and other works, artists and designers are convincing the global marketplace that trash is a viable source of raw materials for use in furniture design.

The final products are easily read as chair, table, or lamp, engaging and amusing the mind with the identification of the “stuff” that comprises the piece, often triggering nostalgic associations and provoking conversations about art, design, politics, philosophy, and the state of the world's resources. Capitalizing on this underlying emotional charge, each designer has a personal rationale for utilizing a particular material. The famous maxim coined by the Canadian philosopher of communication theory Marshall McLuhan here applies: “the medium is the message” (McLuhan 1994, 7).

London-based Stuart Haygarth began his career as a collagist, graphic designer, and still-life photographer, organizing two-dimensional assemblages of detritus. He is a self-described “avid collector, finding materials from flea markets, charity shops, beaches and streets” whose “projects tend to start from finding or noticing a single object that interests me, both from a visual standpoint and from its narrative” (“Reused, Recycled, Resplendent”). In 2004, Haygarth began making work in three dimensions, leading to his meteoric rise to fame as a designer principally of chandeliers and installations of discarded items.
For his now iconic "Tide" chandeliers, Haygarth collected and classified, over a period of years, man-made translucent plastic debris that had washed up on a beach in Kent, England. The various pieces were then arranged and coalesced into suspended spheres, roughly 150 cm (5 feet) in diameter. "The sphere is an analogy for the moon which effects the tides which in turn wash up the debris," Haygarth explained in a 2014 interview with *Inhabitat* magazine. The initial series of ten sold briskly for around £5000 each; later chandeliers in this series were sold for £30,000 apiece.

Haygarth has gone on to create limited editions of hand-made chandeliers from caches of recuperated items including prescription eyeglass lenses ("Spectacle," 2006), eyeglass arms ("Urchin," 2009), exploded party poppers ("Millennium," 2004), PET water bottles ("Drop," 2007), and smashed car side mirrors ("Mirror Ball," 2009), delivering visual narratives through a resonant and authentic poetics now sought after and proudly displayed by purveyors of cutting-edge style.

Haygarth has been featured at many international furniture fairs, including the 2005 and 2006 Designer's Block, London, part of the London Design Festival. In 2007, *Wallpaper* magazine named him Best Breakthrough Designer. Haygarth has worked on commission for companies including Coca Cola, Habitat, Comme des Garçons, and MacMillen Cancer Support to produce custom chandeliers and installations such as two done in 2008 for Selfridge's London Wonder Room boutique, entitled "Barnacle" and "Harpoon 321" (Stuart Haygarth, email message to author, 18 February 2015).
Other artist/designers creating upscale, witty chandeliers and installations include the late Japan-based German designer and environmentalist Jurgen Lehl who combed the beaches of Okinawa for plastic and whose design work is still sold through his Tokyo boutique Babaghuri, and the Parisian Régis-R (Prince of Plastic) whose works have appeared everywhere from *Casa Vogue* to the Centre Pompidou to the trendy, Philippe Starck-designed Paris restaurant Miss Ko, which opened in 2013.

These narratives of time, waste, and consumer excess carry a visually engaging message about our world. Here, the signal values of good design—ingenuity, elegance, craftsmanship, and panache—challenge ossified notions of trash. Thus charged, these pieces perform a double rebranding which both affirms the buyer's cutting-edge vision while simultaneously elevating objects destined for the landfill into a new category of sustainable “raw” materials capable of fetching top prices. The high moral concept dissolves boundaries between design and art, disciplines traditionally thought of as mutually exclusive.
In many non-Western traditions, utility and art are fused and function and symbolism abide in the same object. In sub-Saharan Africa, furniture motifs can have sacred meanings that refer to stories and myths. A strong “presence” is valued. The work of Mozambican artist Gonçalo Mabunda is a prime example of this synthesis of form and concept. Drawing on his cultural roots, knowledge of Western art, and the significance of the chair or throne in Africa, Mabunda created a series of “thrones” constructed entirely of unearthed deactivated weapons from Mozambique’s civil war (1977-1992). Embedded in the rusted materials of these chairs is a painful yet triumphant narrative wherein agents of suffering and violence are transformed into political commentary and symbols of healing and affirmation.

Mabunda is a part of a new generation of African artist/designers who have garnered exposure and acclaim in the most rarified climes of international art and design. They include Cheick Diallo of Mali, who fashions stunning chairs from old tin cans and fishing net, and Hamed Ouattara of Burkina Faso, who builds cabinets out of discarded oil drums, celebrating their colorful patinas. These designers are redefining contemporary style in the African vernacular, demonstrating the aesthetic virtues of their time-honored traditions of adaptive reuse to an enthusiastic global elite.


Like Africa, South America is a continent with an abundance of regional expertise in fabrication techniques. Eco-designers and sisters Solange Wittman and Karin Wittman Wilsmann of Rio Grande do Sul in southern Brazil are well placed to enlist local craftspeople for creative action. Their Guetoecodesign is located near the Rio de Sinos Valley, an important industrial area known for the fabrication of footwear, which “is responsible for 34% of the Brazilian footwear production” (Licks et al 2012, 14). The manufacturing process, seasonal work with long periods of scarcity, is outsourced to small ateliers often located in private homes. In the early 2000s, levels of watershed contamination and pollution caused by byproducts of leather tanning and EVA (ethylene-vinyl acetate, more commonly known as foam rubber) led Guetoecodesign to seek a solution that would also improve the well-being and economic status of the valley’s craftspeople (Karen Wittmann Wilsmann, email message to author, 29 January 2015).
Figure 6: Guetoecodesign, Miss Gana Ottoman, EVA remnants from flip-flop factory, 2009.

With sponsorship from oil giant Petrobas and SEBRAE, a nonprofit with the mission of promoting the sustainability and competitive development of Brazil's small businesses, Guetoecodesign devised fanciful ottomans, EVA flip-flop factory remnants lashed together into firm, colorful pieces, each uniquely handcrafted by a no longer jobless member of the labor pool. Their award-winning product was soon in demand all over the world and even featured for a time in Design Within Reach, a chain of American contemporary furniture stores. Guetoecodesign has also developed methods through which rubber scraps are used to make lamps and leather remnants are fashioned into carpets, chairs, sofas, and benches.

Although innovation in upcycling is occurring in discrete locations around the world, thanks to hyper-globalized communication ideas spread and cross-fertilize at lightning speed. To Millennials British artist Alexander Groves and Japanese architect Azusa Murakami, the accessibility and reach of this moment in time is simply the norm. In their mission to identify and address problems of waste no matter where they occur, be it a far-off continent or on the open sea, Groves and Murakami are undeterred by geographic logistics. The stated purpose of their engaged design practice Studio Swine—an acronym for “Super Wide Interdisciplinary New Exploration”—is to examine “the role of design in the modern day, the power of the vernacular and the future of resources in luxury design...regarding design as a tool for place-making in a globalising world” (Groves and Murakami, “About: Bio”). Groves and Murakami ensconce themselves in a place to conduct hands-on research, working out empowering methodologies they then share through short films and open source instructions freely available on the Internet.
One Studio Swine project, “Can City,” was enacted in 2013 in São Paulo, where over 80% of recycling is done by “catadores,” independent pickers who pull handmade carts through the bustling streets (Groves and Murakami, “Can City”). After wandering the city on foot for three months, Groves explains, “We wanted to make a system that would be very cheap or ideally free to operate” (email message to author, 4 February 2015). He and Murakami designed and built a mobile furnace from free scrap metal collected from the city’s many construction sites. Using waste cooking oil from street food vendors as fuel, they melted down discarded aluminum cans to create the components of a stool decorated with imprints of palm leaves and other found objects with interesting textures. “The moulds are totally flexible and can be adapted to be used for anything so this enables the catadores to ‘cast on demand.’” says Groves (pers. comm., 4 February 2015). This modus operandi of plunging in to dissect a culture first-hand resulted in mutual inspiration, practical application, and financial benefit for all involved.

Another ingenious open source Studio Swine invention, “Sea Chair,” was born from the ever-widening gyres of ocean plastic. “Ship stools used to be made in long voyages at sea from narwhal tusks or whale bones (one was even mentioned in Moby Dick) so we decided to re-interpret the tradition with sea plastic,” Groves writes (pers. comm, 7 June 2014). Choosing the most polluted beach in England, Porthtowan, as their recuperation site, Groves and Murakami harvested plastic detritus, running bigger pieces through a garden chipper. With their friend Kieran Jones, they built a small furnace and hydraulic press from machinery found in salvage yards which used driftwood and dried seaweed as fuel. The plastic was melted in the furnace and then compressed between two metal surfaces, after which three legs made using the same procedure were screwed on to form a sturdy chair. The process has evolved since the first “Sea Chair,” and following a successful Kickstarter campaign Groves and Murakami now board fishing boats with solar ovens and 3D printers they designed and fabricated themselves (“Sea Chair: Into the Gyre”).
Operating across a wide range of disciplines, Studio Swine has worked with clients such as Veuve Clicquot, Microsoft, Heineken, and other enterprises with a desire to develop a visionary brand. London Connoisseur, brokers in luxury artisanship, whom Studio Swine joined in 2014, took notice of their film chronicling “Can City” and commissioned Groves and Murakami to design new works in Cape Town in 2015 using similar methods. “The idea is we […] leave them with the foundry, tools and skills to continue,” Groves explains (pers. comm., 4 February 2015).

With a PhD from MIT in Design Technology (Architecture), designer, architect, educator, researcher and entrepreneur, Bangkok’s Singh Intrachooto is the most famous eco innovator of whom you have never heard. He has devoted his life to enlightened material innovations, developing a plethora of improbable adaptive reuses to mitigate the escalating trash problem plaguing his native Thailand. His vocation began when as a “green” architect he keenly felt the hypocrisy of projects that produced enormous amounts of waste. Determined to find a way to turn construction debris into a resource, Intrachooto explained in an interview with CNN International, he paid workers to sort leftover materials.

This drive evolved into his design studio, OSISU, which creates elegant contemporary furniture fabricated from used sandpaper and wood scraps, shredded and compressed juice and milk cartons, button scraps from Thailand's huge fashion industry, pen fillers, lipstick cases, steel scraps, eggshells, old ventilator grills, threads, fabric, and more. Busy keeping up with orders from all over the world, OSISU's store of inventory is minimal. OSISU’s team of designers constantly mines new waste streams for upcycling opportunities and has garnered Intrachooto awards including Thailand's Emerging Designer of the Year, Elle Decor’s Designer of the Year, and Top Environmentalist 2008 from Thailand's Department of the Environment. In 2014 alone, Intrachooto won the Hong Kong Design Centre’s Design for Asia Award, Interior Design's Best of the Year Award for Use of Reclaimed or Recycled Materials, and Holcim Gold Awards for Sustainable Construction.
A professor at Katsetsart University’s faculty of Architecture since 2003, Intrachooto founded Scrap Lab there in 2007 with funding from the university and Siam Commercial Bank. The lab is a creative playground for practical student experimentation, through which Intrachooto hopes to groom future professionals who will apply sustainable principles in their architecture, design and manufacturing. He trains his students to look upon all waste streams with an unprejudiced eye, sussing out possible uses for every conceivable form of detritus from orange peels to hospital wastes as they tinker, manipulate, test, and invent viable new materials. Intrachooto encourages his students to create their own design ventures to promote the use of scraps. “Explore and play more: that's what I tell all my students,” he told *BK Magazine* of his teaching style.

Intrachooto has made significant inroads towards the establishment of trash as a viable material in contemporary applications and is currently working to develop an international standard for recycled materials with funding from the European Union. So compelling is his alchemical work that he has been enlisted by fifty world-class industries to innovate custom materials. Among his notable successes is “Javacore,” an artificial stone for counter-tops, mosaics and tiles made out of coffee waste and developed for Thai locations of the ubiquitous Starbucks chain of coffee shops. Other innovations include “Brew,” a surface made from reclaimed barley grains from the
brewing process of Thailand's largest beer producer, Singha Corporation, and with the company InnoComposite, “Metiles,” an unlikely composite material of molten aluminum pressure-infused into wood scraps.

Despite his ecumenical passion for green innovation, in many of these collaborations Intrachooto uses the standard polyester resin that is the norm in the artificial stone manufacturing industry, a pragmatic accommodation to ensure that his new materials will actually be used and commercialized in this developmental stage of industrial upcycling.

Old habits die hard and many inveterate consumers are unready to abandon their acquisitive bent. Although these designers and artists are cognizant of the fact that their exercises in recycling and bespoke design do not represent a panacea for the serious problem of global waste, their work raises awareness, disrupts entrenched notions of beauty and value, and models an appealing way forward.

Ecologically minded socially committed designers such as the ones mentioned here convince, amuse, and dazzle with detritus-derived work that inspires acceptance and participation by similar high-end brands. A sign of this shift is the appearance of ancillary reuse-themed lines and products offered by purveyors of luxury goods such as the venerable leather house of Hermes. Pascale Mussard, great-great-great granddaughter of the brand's founder, in 2010 created “Petit H,” which offers items made from Hermes leather scraps (Remsen). Here, the brand name is realigned with an ethos of sustainability while the notion of value is recalibrated in the eyes of consumers willing to pay top dollar for a green product.

But many seek more than a guilt-free indulgence in the face of growing unease over the effects of anthropogenic climate change and dwindling resources. Transmitted digitally and democratically, this burgeoning movement of sharing and instruction is driven by the psychological engine of our increasing certainty that systemic changes are required for our very survival as a species. Call this proliferation of autonomous production what you will: recycling, reuse, repurposing, upcycling, the green revolution, appropriation, DIY, “making,” or the Dada spirit. Traditional crafts in adaptive reuse are also experiencing a resurgence, with Fab Labs—small workshops with an array of digital tools—popping up in many cities, offering possibilities for more sophisticated material experimentation. Little by little, the world's ubiquitous trash is beginning to be viewed as an opportunity for meaningful self-expression, new entrepreneurship, and human solidarity with a sense of agency and purpose.

References


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Mixed up: re-thinking the sensibility of reinforced concrete

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Design and affect

It is speculated that much of the world’s reinforced concrete structures will become rubble in 50 to 120 years due to the rust-driven expansion of their internal steel structures—a form of damage known as concrete cancer. Despite recent technical improvements, the use of reinforced concrete still presents short term economic gain at the expense of long term waste, a cost that will be paid by following generations. While this future destruction is dormant, inbuilt around us in the form of reinforced concrete slabs forming walls, floors and ceilings, and elsewhere in the form of roads and other civil structures, it has little presence in the typical sensory experience of concrete.

This paper uses a theoretical framework of affect developed from Giles Deleuze and Felix Guattari to explore the sensory relations of concrete in reference to Gilbert Simondon’s work on the philosophical concept of hylomorphism. Simondon proposes hylomorphism is demonstrated in the flattening of materialities into moulds and surfaces. Such practice has implications for the understanding of production in that it diverts attention away from the “continuous variation” of matter and form (Deleuze, in Deleuze, Parnet and Pinhas 1979).

I explain the design of a reinforced concrete table which attempts to capture and convey the heterogeneous structural tendencies of concrete and the metallurgical transformative potential of rust. The use of gold leaf in the design of the table is also discussed in terms of metallurgical expression and in regard to how it can modulate the perception of broken and damaged material. The theoretical framework is used to describe the folding and compression of architectural and infrastructural affects into sensible, human-scaled perceptions.

I discuss the potential of furniture and homewares to capture and convey material affects via intimacy afforded by the domestic scale, and the capacities of such design to bring humans into closer relation with the broader socio-environmental impacts of the construction industries.

**Keywords:** concrete; furniture design; sustainability; hylomorphism; affect.
Figure 1: Concrete Low Table

Figure 2: Concrete Low Table, detail
Figure 3: Concrete Low Table, detail

Figure 4: Concrete Low Table, detail
Figure 5: Concrete Low Table, detail

Figure 6: Concrete Low Table, detail
Figure credits:

Concrete Low Table (2014) by Guy Keulemans.
Materials: concrete, rebar, plywood, caster wheels and ratchet strap clamp.
Dimensions: 330mm high x 900mm diameter.
Photography by Dean McCartney.

Introduction

Concrete, a mixture of cement, water and aggregates such as rock or sand, is one of the oldest and most common building materials. Archaeological evidence indicates its use since the 9th century BCE in the neolithic Stone Age, predating agricultural and metallurgical discoveries (Courland 2011, 38-54). The material is now the world's most used construction material and the most used substance after water (Forty 2013, 69). It is pervasive in building construction from skyscrapers to home patios, as well as in roads, dams, bridges and many other types of infrastructure. Robert Courland says it is “so ubiquitous, its almost invisible,” a comment that inspires the work of this paper (Courland and Flatow 2012). The issue I address is that the perceptive and affective presence of concrete in conventional practice is far lighter than its actual socio-ecological effects should indicate.

These social and ecological effects are significant. Concrete in production alone, prior to transport and use in construction, is the largest contributor to CO2 emission after automobiles and coal fuelled power plants (Huntzinger and Eatmon 2009, 668). The production of its key ingredient, cement, is responsible for 5 to 10 percent of all global carbon emissions (Forty 2013, 70). The majority of concrete waste ends up in landfill.

1 In this paper I draw extensively upon Courland's book Concrete Planet (2011) and Adrian Forty's Concrete and Culture (2013) for factual information. I encourage any reader looking for further information to consult their respective bibliographies. Of the two books, Courland’s book is more complementary to the Deleuzian-Guattarian project in that his straight account of concrete’s history, chemistry and use is grounded in its material capacities. Conversely, concrete’s imbrication with human design and creative practice motivates Adrian Forty to say that concrete has a “metaphysics” or an “existence in the mind” that runs alongside its existence in materiality (Forty 2013, 8). This Cartesianist dichotomy is evident in his aesthetic and metaphysical concerns (artificial/natural, real/fake, local/global) that don’t fit well to an affective analysis.
and comprises a large percentage of landfill combined. The compelling social concern is that many modern concrete structures have poor durabilities relative to other building technologies (Courland 2011, 321, 341).

The obsolescence of modern concrete is at first perplexing when considering the survival of ancient concrete structures, such as the well preserved dome of the Pantheon in Rome, dating from the 2nd century CE. This exemplary illustration of concrete's possible durabilities was constructed after many hundred years of experimental development and a culmination of techniques ultimately lost after the fall of the Western Roman empire (Courland 2011, 108). The concrete in the Pantheon is, however, primarily distinguished from modern concrete by its lack of reinforcement—reinforcement that is so ubiquitous in modern concrete structures that the Pantheon remains the world's largest use of unreinforced concrete.

Conversely, the contemporary situation is that early 20th century reinforced concrete structures are crumbling apart and later structures are in the process of decay. Repair or rebuilding of these concrete structures will result in huge amounts of waste, energy use, pollution and possible costs in the trillions of dollars, presenting a significant burden to future generations (Courland 2011, 71, 330).

How such problems can not be a concern for the people who live, work and travel day to day inside and upon concrete structures, I propose, is illuminated by an understanding of materiality and affect in design. For this purpose I will introduce concepts of affect from Giles Deleuze and Felix Guattari, followed by an introduction of the concept of hylomorphism. I will then expand this theoretical framework through a discussion of my practical work Concrete Low Table (2014) (figures 1 to 7). My purpose is to connect material affects of the table to the social, ecological and geological relations of reinforced concrete and explain the value of their compression into the sensory experience of a domestic object.

Concepts of affect

Deleuze and Guattari note affect is a process of changes to the state of affairs within the body, as affected by another body (Deleuze and Guattari 1994, 154). The meaning of bodies in this definition is not limited to the human, or to the organic. In relation to humans, affects are human/non-human hybrids—"non-human becomings of man"—because they move through both the human and non-human worlds and compose them together into a set of affective relations (Deleuze and Guattari 1994, 169.) This is a concept grounded in materiality; we are beings composed of material relations that extend through the physical world. As examples, copper and iron are metals active in our blood, calcium and fluoride are metals in our bones. As will soon be explained in detail, another confluence of the organic and inorganic world is the production of geology by animals.

Jane Bennett extends Deleuze and Guattari’s concept of affective relations to consider a vitalistic agency across all forms of matter and material—whether human, animal, plant, mineral or other—for the discovery of ecological and political interactions (Bennett 2010, x). Matter and material have their own force, a vibrancy, with unique “trajectories, propensities and tendencies”, often chemical or crystalline in basis, that manifest as affective relations at scales large and small (Bennett 2010, viii, 23). Bennett
believes that the traditional view of matter as inert may encourage the “earth destroying” practices of contemporary production and consumption and that a converse view of matter as alive and active can foster improved ecological awareness (Bennett 2010, ix).

In regard to my design practice, Deleuze and Guattari’s concepts frame design as a form of art that composes sensation via affects (Deleuze and Guattari 1994, 166). This is a capture of affects as intensive forces in material that create form, colour and other sensory qualities (Smith, 1996: 40–41). These concepts are useful in that they help interrogate the sensory expression of materials, but also propose how the relational world is folded back into material and experienced as sensation (Deleuze and Guattari, 1994: 167-9). For the practice of design, an affective analysis provides a way to explore the human and sensory experience of materiality, and its broader relations, that goes beyond conducting limited inquiries of products in terms of simply how they work or who produced them. The opportunity provided is to grasp the connection and passage between production, sensation and the ecological together, as expressive forces, rather than as separate areas of investigation.

Such concepts of affect can be contrasted to the ancient notion of hylomorphism. Deleuze and Guattari (working from the theories of technology philosopher Gilbert Simondon) discuss it as a model that distinguishes matter (hylo) from form (morphic) (Deleuze and Guattari 1987, 409). In hylomorphic practice, form is imparted over a material (Bennett 2010, 57). It can be illustrated by the practice of casting, when the vital qualities of a material like clay, such as texture, elasticity or porosity, are smoothed away by perfect formation into moulds. Such practice is exemplified in normative industrial production by processes of standardisation that limits material expressions to surfaces (Thrift, 2010: 289-308). Hylomorphic practice exerts a dual effort: it wants to produce with material, but at the same time conceal the material. In doing so, hylomorphic practice precludes what Deleuze and Guattari call a hidden middle, an area of “continuous modulation”, through which material and form interact (Deleuze, Parnet and Pinhas 1979) (Smith 1996, 43). The monolithic use of concrete, its casting into contiguous slabs and moulded forms in which floors become walls and wall becoming ceilings, is consistent with hylomorphic practice. Deleuze, Guattari, and Manuel de Landa note that hylomorphism becomes socially conditioned and dominant in production and consumption systems by way of facilitating mass reproduction—it is therefore imbricated with the environmental problems of excess production, such as pollution and waste (De Landa 1997) (Deleuze and Guattari 1987, 369) (Protevi 2004, 8).

Concrete

The first thing that may be observed in the Concrete Low Table is that the table has a rough, irregular surface with thin cracks, cavities and voids. The edges are rough and rubbly. These qualities resulted from a non-industrial mixing of the cement and its aggregates. That is, I mixed them in a garbage bin with a stick.

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3 Deleuze and Guattari use the example of casting in particular to explain the hylomorphic model because its materials and techniques, such as clay and mould, have a procedural logic that illustrates the construction of thresholds that limit material complexity and expression to surface. In this illustration, the clay material is prepared and flows into the mould, meeting a threshold in which the clay is subject to the form of the mould (Deleuze and Guattari 1987, 410–411). Or more precisely, the potential of clay as a metamorphic material means it can exceed or recede to any number of thresholds, dependent on qualities such as viscosity, but in hylomorphic production these potentials are singularly constrained.
During casting, watery cement in the concrete mix forms a skin against the surface of the mould. Without compacting or tamping, this watery cement is liable to be weak and contain air bubbles, but in industrial practice can be ground back to remove such features and reveal aggregate. Likewise, the surface of the Concrete Low Table was abraded with a hand held grinder, but only partially. In the photos of the table, the same process is evident in the appearance of concrete floor upon which the table sits (and in fact the table and floor share some surface qualities). However the table retains some casting imperfections.

My intention through this design is to affectively potentialise a perception of the expanded relations of concrete. These expanded relations include its production from geological products, its use in construction variably mixed from heterogenous substances (water, cement and rock), and the industrial practices of moulding and finishing used to control and tame its materialities.

It can be observed that the table is made from geological products. The table surface is patterned with rocks and sand in various shades of brown, black and grey. The rubbly material at edges is also rock-like. While concrete is often perceived as monolithic and stone-like, concrete is not materially homogenous like stone. It is not produced from one thing, but mixed from many things, a process both standardised and differentiated in global industry to suit local conditions, conventions and resources (Forty 2013, 76, 103) (Courland 2011, 211–6). This description of how concrete is made serves to introduce two aspects of concrete that are contrary to conventional perception, but which are predicted by Deleuze and Guattari’s concepts of vital materiality.

Firstly, it is a very heterogenous material. The process of making cement can be done, and has been done through history, in many different ways, and furthermore its transformation into concrete on the building site facilitates further differentiation. The aggregates vary; all sorts of local or non-local rocks and sand are used for functional or aesthetic purposes. Concrete gives every architect the chance to be their own “alchemist”, though its use does not require specialised training, and this makes it appealing to outsiders (Forty 2013, 32, 40). The conceivable recipes for concrete are broad and the effects of their differences complex. This leads to certain problems. For example, it makes the chemistry and economy of recycling difficult (Forty 2013, 76–7). In structural use, unexpected chemical reactions between aggregates and cement can cause cracking and decay. This is one form of what is known as ‘concrete cancer’. 4

Secondly, concrete has relations that extend across the organic and inorganic worlds. Part of the problem of cement's chemical complexity is because its key ingredient, limestone, a sedimentary rock, is composed of ancient sea animals, mainly shells and coral, deposited together over millions of years. Limestones vary widely around the world because the growth of sea animal shells and coral and their subsequent metamorphosis into rock is modulated by an array of biological, geological, ecological and climatological factors. Recently, the addition of large amounts of fly ash to cement is growing in popularity because it improves concrete's durability and sustainability (Courland 2011, 332) (Forty 2013, 71). Fly ash comes from coal, the product of dead plant matter slowly transformed into metamorphic rock from heat and pressure—another example of concrete's organic composition.

Such problems are typically isolated to localised, historical instances, but can become institutionalised by naive industrial chemistry. For example, Courland documents a high strength cement that became popular in the 1930s and was used until nearly the end of the 20th century, but which has been found to be brittle and highly obsolescent (Courland 2011, 328-9).
Concrete structures, for all their inert, monolithic and stone like superficial qualities, are actually the variably recomposed bodies of animals and plants, ground up with rock.\(^5\)

**Gold**

Within industry, the effects of a rough concrete mix can be abraded away, but in the *Concrete Low Table* these details are highlighted with pure gold leaf.

Like other shiny metals, gold works on the body. It captures and reflects light brilliantly in flashes that can appear and disappear quickly as the eye changes its position of view. Attention is drawn in a very immediate way. Furthermore, pure gold is perpetually shiny and doesn't tarnish or corrode. This trait and its historical significance are culturally ingrained. Obviously the cracked and rubbly table may provoke perceptions of decay, failure and obsolescence, but these affects are in contrast to the affective relations of gold, that potentialise perceptions of preciousness, permanence and value.

The use of gold and shiny materials as surface decoration is a technique of what Nigel Thrift terms "*sprezzatura*", the design of material affects that produce an effortless-looking, seductive glamour (Thrift 2010, 299). This style of design is particular concerned with surface presentations, in that they draw attention away from production concerns and the material complexities of products. In industrially designed consumer products, *sprezzatura* can be seen in the trend of smooth and glossy mouldings, the removal or obfuscation of part lines and in the marketing of box-fresh, scratch free surfaces. Such features conceal, physically and affectively, their complex inner workings, liable to break or obsolesce, and obfuscate their complex manufacturing relations, such as problems of pollution, waste or wage slavery.\(^6\) At the time of purchase, this concealment presents "a world without troubles" for the consumer (Thrift 2010, 298).

However, the use of gold in *Concrete Low Table* can be understood as an inversion, or even subversion, of Thrifts' characterisation of *sprezzatura*. The table is not draped or wrapped in gold, but incompletely dabbed with it. Instead of drawing attention away from the complex materiality of concrete, the gold locates the table's defects, voids and pits to the eye. I propose that bringing the table's materialities into sensation in this way first potentialises the perception that all concrete has similar tendencies and traits, but that the gold scrambles the affective response to these material conditions. This is of consequence because there exists an urge to ignore or reject that which has poor affective potentials. We push away from broken and damaged materials because they are perceived as being unhelpful and a burden. Broken materials exemplify an issue at the Spinozist heart of Deleuze and Guattari's concepts of affect. Determining the value of an affective relationship is a matter of evaluating the capacities and activities produced by an encounter. The point is openness—a body should strive to become open to the "greatest number of things", rather than closed to new affective relations and their possibilities (Deleuze 1988, 71). While broken objects or material typically close down affective potentials, the use of gold in this work elevates the status of the

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\(^5\) For this reason I would like to propose that while the normative monolithic use of concrete today is hylomorphic, the materiality of concrete could be better described as 'chylomorphic', using the Greek prefix *chylo*, meaning a juice or gruel (from Ancient Greek, meaning the juice of an animal). It is the basis of the world *chyle*, a digestive fluid known for its milky appearance, which may also describe the appearance of water mixed limestone products such as mortar and cements. While Adrian Forty contends that concrete's animal and geological qualities are primitive features—he refers to their "telluric backwardness"—I would like to propose that, primitive or not, concrete's animality may be the basis for its material capacities to transform (Forty 2013, 15).

\(^6\) Distancing the consumer from knowledge of interior components has repercussions for issues of obsolescence, disposal and repair. This also concerns concrete structures; hidden material relations have been termed infrastitial relations by Mike Anusas and Tim Ingold—a "logic of form" paradigmatic to industrial practice that extends to architecture and urban design such as, for example, the hiding of electrical and plumbing infrastructure within monolithic concrete buildings (Anusas and Ingold 2013, 58–9).
table and, like a kind of glamour, in the archaic sense of charm or enchantment, reconfigures the perception of value. The result of which is, I propose, the perception of caring for, or taking an interest in, a damaged object, an opening of affective potentials.

**Rebar**

The last feature of the *Concrete Low Table* for discussion is its use of reinforcement, as per virtually all modern and contemporary concrete structures. The pairing of steel with concrete as a composite material was a dramatic development in the late 19th century. It adds strength, allows long, cantilevered structures and thinner, less supported slabs. It speeds up construction times. These qualities led to the rapid popularity of reinforced concrete as a building material in the 20th century. It was assertively and sometimes duplicitously promoted by building industries, successfully competing against traditional building techniques (Courland 2011, 306-11). In many parts of the world, concrete quickly replaced environmentally sensitive practices such as mud brick and rammed earth building (Forty 2013, 72-74, 79). What was missed, however, was a concern for its eventual and unavoidable decay. Early 20th century engineers thought their reinforced structures would last a very long time—a 1000 years was speculated by some (Courland 2011, 319). In actuality, reinforcement is the single biggest cause of concrete cancer and results in structural lifespans of around 50 to 120 years, and sometimes less—and far less than the capacities of unreinforced concrete or traditional brick and stone masonry (Courland 2011, 321, 341).

In the *Concrete Low Table*, the use of reinforced concrete is designed for affective rather than structural purposes. Within the central circular void of the table is a triangular arrangement of rusted rebar. Fine cracks run extend across the table's surface from where the rebar penetrates the concrete. This effect was achieved by heating up the rebar with a oxy-acetylene blow torch after casting, melting its protective zinc coating and temporarily expanding the metal in simulation of the protracted rusting process. The rebar, already a little rusty after this treatment, will continue to rust. The intent of this design is to potentialise a perception of the metal rebar as an active and vibratory agent within the concrete, in contrast to conventional perceptions of it as dormant, or not there at all.

Within a Deleuzian-Guattarian framework of affect, an alloy like steel rebar can be understood as a hybridisation of human-metallic operations. In nature, metal is found in the form of ore, bonded chemically to oxides, sulphides and silicates—a product of geological forces. To be extracted, purified and then alloyed is an event that binds emergent tendencies of metal with the desires and capacities of human agency, a binding of the organic and inorganic worlds. The binding is only ever temporary, however, because in the presence of oxygen iron will transform again, to iron oxide, or rust. The construction of an alloy, its shaping into a product like steel rebar and its practical application within concrete is a hylomorphic practice in that this inherent tendency of steel is affectively constrained. While a naked piece of rebar can show its nascent potential via a light coating of rust, embedding it within a monolithic concrete construction hides it potential from human sensation—for a while. The design and use of rebar illustrates Simondon’s claim that hylomorphic thinking perceives a formation that is isolated from material—it can grasp formation, but not information. This is a reality Simondon calls “impoverished” (Simondon 1992, 315).

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7 The perception of rust and the potential for destruction it signifies can be misinterpreted however; Courland notes that in the mid-to-late 20th century some builders thought rust on steel helped it to adhere to the concrete.
Concepts of affect can, however, be used to illuminate material information by shifting the focus from material-form relationships to material-force relationships (Deleuze and Guattari 1987, 335, 395, 407–11) (Smith 1996, 42–43). This concerns the connections of matter, force and the "mechanisms" between objects that manifest as intensities and traits (Deleuze and Guattari 1987, 73). Cracks are an example of such traits; Deleuze and Guattari identify them as energetic bearers of "glimpsed forces" (Deleuze and Guattari 1994, 181). The cracks of concrete cancer bring into sensation internal forces and mechanisms, the most important of which is the electrochemical interaction between concrete and its internal reinforcement: rust, a corrosion in which the concrete, having taken on moisture through its proliferation of tiny cracks, conducts electrical currents along the rebar. One end of the rebar becomes an anode, the other the cathode, forming a battery that powers the transformation of iron into iron oxide (Courland 2011, 319-20, 333). As rust forms, the bar expands in size, up to four times its original size, the cracks expand and force the concrete outwards. Often the first visible sign of concrete cancer may be in the form of a large crack weeping a brown stain, an indication the internal steel is already well rusted (Courland 2011, 321). Otherwise, the process continues unnoticed or untreated until chunks of concrete begin to spall, or fall off the structure (Forty 2013, 58–9) (Courland 2011, 319–20).

This process has begun and will continue within the Concrete Low Table over the coming decades. In the building trade there is little that can be done to arrest the process, and repair techniques are costly and extensive. However, in the Concrete Low Table, a woven polymer strap and ratchet clamp is wrapped around the table that can be periodically retightened to maintain its shape. The table will last a long time relative to much industrially produced furniture, but nonetheless has a future point of obsolescence that is drawn to mind at each re-tightening of the strap. Such action, performed domesticaly, offers a course of action through which an urge to care for the table can actualise, binding the affective qualities of concrete in industry and construction—a sense of concrete in its broad use and failure in building and infrastructure—to the more intimate, affective qualities of furniture.

The transfer of material expression into the medium of furniture, a different scale to that of the architectural or infrastructural ruin, is where the affective play potentialises a shift in perception. Concrete is typically perceived as an outer material, a utilitarian and even ugly material that shelters and constructs, but its failure modes are not domestically familiar because failed buildings are abandoned. By compressing this problematic materiality into the design of a domestic object, modulated by the glamour of gold leaf, I am attempting to re-situate the thinking of concrete's materiality and draw attention to its social and ecological contingencies.

References


Though I propose here that rebar's transmission of structural force inside concrete is not generally apparent, it nonetheless the case that cracks must however be present. For steel reinforcement to work, concrete has to crack, even if just microscopically (Forty 2013, 45, 52). It is therefore difficult to protect rebar from water ingress. Builders have been said to say 'if it ain't cracked, it ain’t concrete” (Courland 2011, 320).

One such process is to chip off the concrete until the rebar is exposed, abrade the and threat the rust and then cover with a new layer of concrete. Such repair can cost more than building a new structure and tends to be only used for historically significant buildings (Courland 2011, 325-7).


Weaving, worldviews and waste: GhostNets art personalizing environmental ethics

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‘How much of the planet’s biodiversity is conserved will be determined by how many and how much people are motivated (morally and otherwise) to participate in conservation reform, as social and political activists – working to reform laws and policies, social norms, and business practices – and in their lifestyles, by reducing their own ecological footprints’ (Booth 2009: 55).

‘Unmaking’ problems like waste begins by inspiring people with a sense of personal agency in changing the world for the better and in providing opportunities to participate in that change. This ‘grassroots’ approach to unmaking waste has occurred with the Australian phenomenon of GhostNets art, in which making art is about ‘unmaking’ marine debris. GhostNets art developed principally as an initiative in Indigenous communities to recycle marine debris fishing nets found in northern Australia’s Arafura Sea. These nets form into an ecologically harmful mass that can range up to several thousand tonnes in weight and drift with the currents similarly to un-navigated ‘ghost ships’ – hence the name GhostNets. Making art out of retrieved nets originated as a recycling initiative but quickly developed into a nation-wide collaborative campaign in marine debris awareness. GhostNets art is now well known across Australia however scholarship is yet to examine the efficacy of the participatory basis of this artform and the inspirational role of Indigenous Australians in applying customary practices of ‘caring for country’ to art about marine debris eradication. This essay considers how the participatory network of the GhostNets Art program and its subsequent manifestation as the Ghost Net Art Project (GNAP) provides an iconic structure where individuals can shape their values about caring for the environment, and where an environmental ethic about the biological imperative of marine rehabilitation is personalized through the sensory language of art.

Keywords: Marine debris; art; ethics; environmentalism; agency
Introduction

‘How much of the planet’s biodiversity is conserved will be determined by how many and how much people are motivated (morally and otherwise) to participate in conservation reform, as social and political activists – working to reform laws and policies, social norms, and business practices – and in their lifestyles, by reducing their own ecological footprints’ (Booth 2009: 55).

‘Unmaking’ problems like waste begins by inspiring people with a sense of personal agency in changing the world for the better and in providing opportunities to participate in that change. This grassroots approach to unmaking waste has occurred with the Australian phenomenon of GhostNets art where making art is about ‘unmaking’ marine debris. GhostNets art developed principally as an initiative in Indigenous communities to recycle marine debris fishing nets found in northern Australia’s Arafura Sea (Gunn et.al. 2010; Butler et. al. 2013; GhostNets Australia 2014). These nets form into an ecologically harmful mass that can range up to several thousand tonnes in weight and drift with currents similarly to un-navigated ‘ghost ships’ – hence the name GhostNets. Making art out of retrieved nets originated as a recycling initiative but quickly developed into a nation-wide collaborative campaign in marine debris awareness. GhostNets art is now well known across Australia however scholarship is yet to examine the efficacy of the participatory basis of this artform and the inspirational role of Indigenous Australians in applying customary practices of ‘caring for country’ to art about marine debris eradication. This essay considers how the participatory network of the GhostNets Art program and its subsequent manifestation as the Ghost Net Art Project (GNAP) provides an iconic structure where individuals can shape their values about caring for the environment. GhostNets art encourages a sense of individual agency in tackling an apparently insurmountable global problem. It is an instance where an environmental ethic about the biological imperative of marine rehabilitation is personalized through the sensory language of art.

1. GhostNets’ participatory ‘unmaking’

The broad participatory structure of the GhostNets program and its GhostNets art offshoot generated a dynamic network across the arts and sciences in Australia, and internationally. A value-chain analysis of ghost nets in the Arafura sea conducted in 2013 identified the GhostNets program as an ‘adaptive co-management’ model that provides a diverse range of stakeholders with a sense of ownership regarding their particular contributions to marine rehabilitation (Butler et al. 2013). The creative act of recycling the nets into art endows this sense of ownership with a more personal dimension and a method of internalizing a global environmental problem into the kind of motivation Carol Booth refers to in the opening quotation. The GhostNets value chain worked on two levels offering opportunities for individuals, social groups, and organisations to feel effective in marine rehabilitation whilst art helped shape individual moral commitment to a sustainable marine ecology. Successful environmental activism depends on this essential duality of arts and sciences, where the arts attend to motivations, perceptions, and perspectives, and the more precise language of science attends to what needs to be done. As Booth argues, motivation to act is as important as methods of action, and motivation begins by providing a focus for our scattered array of conscious and subconscious sensitivities. We can see this unfold in the evolution of the GhostNets network and associated art initiatives.
Indigenous perspectives of ‘caring for country’ provided inspiration for the GhostNets program from the onset. ‘Country’ is an Australian Indigenous ontological concept where the natural world is regarded as a sentient being, and intrinsic to one’s kinship identity (Berndt 1983; Rose 1996; Langton 2002; Gammage 2011). ‘Country’ thus constitutes a worldview, a worldview that is experienced through the contemporary expression of mediums such as GhostNets art. In environmental vocabulary, ‘caring for country’ derives from a more eco-centric and less anthropocentric worldview.

In the mid-1990s three Indigenous communities in Arnhem Land became involved in sporadic beach cleanups as part of a Northern Land Council Caring for Country initiative (Gunn et.al. 2010). Indigenous communities were instrumental in addressing this environmental problem because of the dramatic impact on their traditional homelands. Fishing net debris is particularly problematic in the Gulf of Carpentaria and across northern Australia where ocean currents carry the nets from across the Indian Ocean, forming a clockwise gyre current northwest of Groote Eylandt. Debris is virtually trapped in a current-generated spiral where knots continually grow in size and in scale of destruction. Individual nets have been recorded weighing up to 30 tonnes and can amass to the size of a small house, ensnaring and killing turtles, dugong, sharks and a great variety of other marine species. Between 73-90% of marine debris in the Gulf of Carpentaria is ghost net material and threatens local marine life that includes 6 of the world’s seven marine turtle species and 4 sawfish species unique to the area (Butler et.al. 2013).

These debris eradication activities became more formalized following a 2002 report by the National Oceans Office entitled Finding Solutions: Derelict Fishing Gear and other Marine Debris in Northern Australia. Outcomes included a Ranger Program involving 15 Indigenous communities spread along 3,000 kilometres of northern Australian coastline (Gunn et.al. 2010). Rangers received training in using tracking and data-collection technology to support their activities in locating and retrieving the nets. They documented the type of nets, ensnared marine life, and tidal and climactic conditions at the time of sighting. A flexible network of Indigenous rangers, council workers, community members and volunteers collaborated in the surveillance and retrieval activities. Collaborations subsequently extended to webbing manufacturers, net makers, and fishing vessel crews as far afield as Indonesia. In the first two years of operation Indigenous communities retrieved in excess of 64,000 metres of net. A more formal collaborative network commenced in 2004 when 18 Indigenous communities
and 3 non-government organizations came together for a 2 day workshop organized by Northern Gulf Resources Management Group. The workshop resulted in the 2005 formation of the Carpentaria Ghost Nets Program, subsequently known as GhostNets Australia.

2. GhostNets art unmaking waste

The significant problem of disposing the retrieved nets in these remote locations led the organization to initiate a Design for Sea Change competition at the 2006 Garma Festival in Arnhem Land, a cultural festival organized by local Yolngu communities (Ryan 2012). This competition canvassed innovative methods for reuse of the nets and also created awareness of the environmental problem. Competitors were encouraged to design items that could be manufactured easily at remote community locations and offer much-needed economic opportunities. Darwin-based artist, Chantal Cordey, won the competition with a design for a guitar strap while other competitors submitted examples of seats, hammocks and shopping bags. Aly de Groot, another Darwin artist, also set up a tent at Garma to demonstrate basket making techniques that could be applied to GhostNets material. Several Arnhem Land communities took up the concept of weaving GhostNets baskets at that time, with GhostNets Art focusing on fine arts and crafts and GhostNets Gear attending to utilitarian or promotional products.

GhostNets art momentum moved to Cape York Peninsula in 2008 when GhostNets Australia and Arts Queensland funded a scoping study (under the auspice of Southern Gulf Catchments) to gauge interest in GhostNets weaving in Western Cape York and the Torres Strait Islands. The enthusiastic response led to Sue Ryan (who conducted the study) being appointed as Art Director of GhostNets Australia and implementation of workshops in the Cape York communities of Aurukun and Pormpuraaw in 2009. Scientific, cultural and educational organisations came on board in the first year of operation with CSIRO and James Cook University funding workshops at Aurukun. At the same time the State Library of Queensland’s Ideas Festival and Cairns Indigenous Art Fair funded public GhostNets weaving workshops (Ryan 2015). The University of Queensland and the National Gallery of Australia both acquired GhostNets art for their collections during 2009. Collaborative projects featured in these early workshops, particularly when artists from Central Australia’s Tjanpi Weavers organisation came to Aurukun to demonstrate figurative weaving (animals, people, birds etc.). A commercial exhibition of GhostNets art also took place in 2009 in Sydney’s Cooee Gallery and Aurukun’s Wik Media produced the first of several documentary films about GhostNets art.
Figure 2: Example of GhostNets art produced at Moa Island (Photography: Sally Butler)

Figure 3: Collaborative GhostNets art produced at Floating Land: Water Culture Festival at Noosa, Queensland (Photography: Sally Butler)
This network of participation and awareness spread to workshops in the Torres Strait’s Saibai, Moa, and Damley Islands in 2010. Twenty other remote Australian communities subsequently came on board before government funding for GhostNets art ceased in June 2013. Government funding for GhostNets Australia principally supported the Ranger programs in removal of the nets and the only government funding specifically for Ghostnets art was from Arts Queensland for the 2008 scoping study. GhostNets Australia initiated the art program to help generate public awareness and private sponsorship. Since 2013 GhostNets Art became a fee-for-service organisation and continues to operate within an arts and sciences network promoting marine environmentalism. This means that funding occurs on a project rather than program basis. For instance, the 2014 GhostNets art event at the Australian National Maritime Museum’s Voyage to the Deep exhibition was sponsored by the Blackmores organization through the World Wildlife Fund.

During a short period of four years GhostNets art achieved an extraordinary breadth and depth in public awareness and participatory opportunities. Marine waste gained exposure as a global problem through GhostNets art exhibitions in more than 30 metropolitan and regional galleries. Beyond the fine arts sector, GhostNets art helped promote the idea that marine conservation needs to be an intrinsic aspect of our culture. This occurred with displays and workshops at cultural and environmental festivals such as Noosa’s 2011 Floating Land: Water Culture Festival (http://www.ghostnets.com.au/ghostnet-art/public-events/floating-land/). The latter involved public and school participation programs on the banks of Noosa’s Lake Cotharaba. In diverse locations such as Noosa, further south at Stradbroke Island, and Ceduna in South Australia, GhostNets art spread a more general message about marine debris and the kinds of local marine species under threat in these locations. Environmental and human wellbeing converged with the GhostNets art display at the 2010 Mental Health Conference in Cairns. International exposure included the British Museum’s 2011 Baskets & Belongings exhibition (http://www.britishmuseum.org/whats_on/future_exhibitions/baskets_and_belonging.aspx), Beyond the Papunya Dot at the Museum of Montparnasse Paris in 2012, and representation in the Gyre: A Plastic Ocean exhibition at the Anchorage Museum in Canada and touring to Atlanta and Los Angeles. GhostNets art achieved a great deal more in terms of exhibitions, participations in festivals, and innovative arts and sciences collaborations, in its first four years of duration.

Formal acknowledgment of the success of the GhostNets art program came through winning the 2012 Sustainable Ocean Innovation Award, the 2012 World Wildlife Fund Earth Hour Creative Arts Award, and the 2012 Annual Queensland Multimedia Award: Best Environmental Story for one of the GhostNets art documentaries.

3. The ‘Caring for Country’ worldview

Carol Booth’s article on ‘The Motivational Turn for Environmental Ethics’, previously quoted, argues that the degree to which one can personalize and internalize environmental problems has a critical impact on motivations to think and act ethically about the environment. It is interesting that this motivational turn for environmental ethics coincides with increased interest in environmental aesthetics because there are few mechanisms for internalising human experience that can compete with art. The artist/environmentalist Sally Schumann approaches the significance of internalisation this way:
‘Unless one personally grounds and calibrates what one learns about the environment, unless one has an opportunity to understand the meaning of one’s own landscape or nature experiences, unless one understands how the dominant culture may have limited or shaped one’s experiences and ethical viewpoint, the moral rules of philosophy or the biological truths of natural science risk remaining idealistic notions, not daily guides for living’ (Schuman 2001, 264).

Methods for motivation to think and act ethically about the environment are also the focus of Veronica Strang’s comparative study of cultural values underpinning human-environmental relationships in Aboriginal communities and pastoralists in north Queensland (Strang 1997). Strang articulates a framework of ‘cultural landscapes’ that helps define environmental values and ethics, and asks “what is the use of finding technological answers, if we don’t know what makes people care enough to act, to change their life-styles and shift towards a sustainable interaction with their environment?” (Strang 1997, 5). The motivation to care about the environment is what keeps coming through in the work of environmental philosophers, and what makes environmental discussion personal. Indigenous concepts of ‘caring for country’ are cultural landscapes that personalise human-environmental relationships because ‘country’ is kin - the natural environment is one’s mother and father, grandfather and grandmother, and is part of a holistic worldview where all elements work together and “each living thing is a participant in a living system” (Rose 1996, 10-11). The cultural landscape is internalized to the degree that personal health and illness are intrinsically linked to environmental wellbeing and degradation. Scientific analysis supports this link as evidenced in a study published in the Medical Journal of Australia titled “Healthy country, healthy people: the relationship between indigenous health status and ‘caring for country” (Burgess et al 2009). The study dealt with a psychological identification with place that deeply influences emotional and physical wellbeing and exemplifies that these ‘internalizations’ of people and place are real from a scientific viewpoint.

GhostNets art contributed to the personalization of environmental ethics particularly through the metaphor of ‘sickness’ and the manner in which ideas of healing country filtered through the GhostNets program. In an interview about GhostNets workshops in Aurukun Stanley Kalkkeeyorta, one of Aurukun’s cultural leaders, described GhostNets art as “a new way in the tradition of healing country – taking something toxic out of country and transforming it into something useful and beautiful” (Butler 2010, 37). There is an obvious sense of personal agency in this act of transforming the toxic into the beautiful. It is an example of what the environmental philosopher Arnold Berleant refers to as an aesthetics of engagement based on a unified perceptual situation (Berleant, 1992). GhostNets art’s capacity as a worldview conduit is an example of this unified perceptual situation. The sickness metaphor also served as a method for internalizing environmental degradation when the environmental philosopher, Glenn Albrecht, created a theme of Solastalgia for the aforementioned Lake Macquarie touring exhibition that included a documentary film about GhostNets puppet theatre on St. Pauls Island in the Torres Strait. Solastalgia was a term Albrecht created to account for a condition of the “homesickness you have when you are still at home” (White 2012, 6). In other words, it is a condition of feeling alienated from your home environment because of negative (or toxic) transformations. These feelings of alienation and discomfort often reside within subconscious levels of thought, but art provides a method
of giving this ill-defined psychological sickness a framework of expression and a stimulus for preparing to heal.

Another way of thinking about Strang’s cultural landscapes is with the previously mentioned notion of worldviews. Worldviews are a somewhat outdated notion, but are also the kind of propositional thinking in which art excels. Gilbert LaFreniere has argued that worldviews remain essential in developing a new philosophy and ethics of nature and he also invokes the ‘sickness’ metaphor in his claim that, “The study of world views indicates that an ailing civilization should consider the causes of cultural illness rather than simply treat the environmental problems which are its symptoms” (LaFreniere 1985, 308). GhostNets art is a worldview conduit that can make connections between a Marine Reef workshop and a Mental Health Conference, and between an Ideas Festival in Brisbane and a Plastic Oceans exhibition touring across the United States. It facilitates a view of a world in need of care.

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