

Reader

Sustainability in the Global South

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Sustainability in the Global South

Waste is a visible commodity on the streets in many parts of Asia. Municipalities struggle to keep the cities clean. The waste that is collected may end up in large toxic dump-sites adjoining the city, like Smokey Mountain in Manila, where a community of the poor will scavenge the waste for slim pickings to sell for a livelihood. For designers and design students "solving the waste problem" is a recurring theme in their practice and education. Environmental NGOs and activists run projects to change people's behavior, improve services or work with rag pickers to improve their living conditions. International donor agencies engage with state agencies and NGOs to focus upon their current priorities, which may be projects such as a focus upon improving the "end-of-life" of e-waste. International corporations and technology sellers lobby the state to invest in centralized waste processing infrastructure such as incinerators and composting plants. Garbage in the street is also the subject of sociological inquiry as in the work of Chakravarty who invites a debate on "the space that collects garbage is the one that is not subject to a single set of communal rules"ⁱ (Chakravarty). The polluter is the problem in one perspective, as in this text by Gandhi, despairing at the civic consciousness of the Indian: "We do not hesitate to throw refuse out of our courtyard on to the street; standing on the balcony, we throw out refuse or spit, without pausing to consider whether we are not inconveniencing the passer-by."ⁱⁱ (Chakravarty)

In the space of waste, as in other themes of sustainability, we witness a cluster of narratives deployed by diverse actors each constructing a specific area of discourse. These discourses often transgress into each other's territories as antagonisms producing their own tensions articulated as dichotomies that draw upon preexisting tropes in developing societies. Waste in the public space is a ubiquitous presence visible in Asia and will remain visible pending effective actions by the state and their agendas of public health and good civic governance. For now therefore waste will serve in Asia as a locale and a site for design and creative practice, where designers can pursue the literature on waste as a cultural artifact or opportunity for innovation in the technical or social sphere. Aspects of sustainability therefore, using waste as an example, contain multiple narratives and are also situated within multiple discourses in Asian cultures.

The Asian perspective on sustainability is best presented as a densely textured tapestry in which new initiatives are woven into a maze of preexisting cultural narratives. Within the isolated contexts of large industry, such as in practices of eco-design or use of natural dyes, sustainability delivers benefit and the practice in Asia mirrors what is to be seen in the studios in the developed world. Outside of the corporate world the projects that the studios of the designers deal with can be challenging yet unfailingly captivating in drawing the designers into the lives of the people. Asia thus offers a rich narrative that resets the utilitarian or techno-scientific discourse of sustainability by inserting people and power into the equations and formulae of sustainable futures. (Guha) **In the words of Guha: Guha Quote?**

In writing this account of Asian Perspectives of Sustainability I have combined the empirical, drawing on experiences of projects I have witnessed and worked on, and the theoretical, drawing on the literature of the environmental movement in Asia. I have attempted a balance of the techno-scientific discourse, of the urban or western elite, with

the indigenous knowledge discourse to get a picture where the Asian narrative of sustainability is not just abstract and theoretically modeled but is like Asia itself, a palimpsest of old and new ways.

I am an industrial designer, university academic and a graduate of a design school in India. I have been teaching sustainable design, doing projects in sustainability, and engaging with the local community of academics and design practitioners who work in the space of sustainability in India, China and Australia. When I set out to write about Asian perspectives on sustainability I looked at the dual discourses within my head; one relating to a developed country, the Australian narrative of sustainability, and the other a push back on criticism of all the things that are wrong with Asia in the space of global-warming, climate-change and sustainability. I am aware of some amazing work happening in Asia that, has been going on for decades and, continues to produce new innovations and startlingly new ways of dealing with problems. I know that there are institutions, governments, bureaucrats, designers, activists, academic theorists and many others within Asia who have some very creative ideas. To write then about Asian perspectives in sustainability is a journey into a territory that contains some startling success stories. It is also a journey into setting up categories for exemplars that motivate and inspire creative people both in Asia and the world over. This text then is an account that is part narrative, part anecdotal and to some extent sets out some categories of sustainable practice that could inform an understanding of the scope, depth and innovativeness of sustainability in Asia.

Aspects of the Environment in Asia

Asia extends from Israel to Japan. The geography of Asia contains a diverse range of environments, peoples, populations and histories. Many of the political entities to be seen today contain evidence of great civilizations and demonstrate a continuity of traditions and practices from the past. Archaeological evidence, as well as peoples' surviving traditional practices, offers clues revealing how people have adapted to their environments and how they have in turn molded the environment to suit human habitation. Asia through the environmental lens appears as a palimpsest, an archive, an archaeological dig, a time capsule and a heterogeneous mélange that can be read to uncover the past that was. Taking a position that the Asia of today is an evolved ecosystem produced by the interactions between people and their natural habitat affords us a unique perspective on sustainability that is inclusive of the narratives of the peoples of Asia.

The designer aligned to an environmental movement in Asia encounters the proposition that traditional notions or systems of thought contain a sophisticated understanding of how nature works. As a designer working in sustainability I have often agreed with the benefits of traditional knowledge systems and marveled at the cosmologies of the seasons and nature phenomena. The wisdom surrounding traditional agriculture and the understanding of natural phenomena is often beautifully and evocatively articulated in indigenous narratives. Environmental activists in Asia often dip in and out of both traditional and modern notions of how ecosystems behave. Eastern narratives are quite popular in the discourses of the more spiritually inclined environmentalists, such as Datchevsky who writes, "many non-Buddhists adopt the Eightfold path as a good way to live anyway. It can provide a good model for an environmentalist as well."ⁱⁱⁱ (Datchevsky)

While the recourse of the environmentalist to the spiritual trope, and the sacred, is common the occurrence and persistence of past and present conflicts in the modern period is seldom considered an important narrative in the global environmental discourse. An account of sustainability from an Asian perspective, therefore, is incomplete without an acknowledgement of the two contextual narratives that Asia contributes to global sustainability thinking, namely the need to account for the spiritual and for the persistence of conflict. Though these discourses often serve to simultaneously elevate and confound utilitarian thinking surrounding sustainability, designers in Asia have a record of engaging with these issues. In the following section I locate these discourses in context at the same time teasing out instances of design engagements.

Navigating the sacred in traditional societies

On 25th July 2001 in a small town in Kerala, in the south of India, it rained blood. This *blood-rain*, as it is now referred to, received wide media coverage and the speculation about the meaning of this event threw up diverse narratives; the scientists, according to newspaper reports, speculated that a meteor may have exploded into a cloud of dust that hovered till the rain brought it down; a religious oracle somewhere read this as a sign of the Gods being angry, while the environmentalists contested the scientists' guesswork but claimed it is was the portent of things to come on this already polluted planet, even as the wait for the chemical analysis of the rain samples continued. In this instance the scientist, the religious Guru and the environmentalist each had a way of constructing knowledge by commenting on a natural phenomenon. Too often the religious or the indigenous narrative is dismissed outright as not focusing upon the facts of the event. Seen from another perspective the indigenous narrative is a useful way, and significantly acceptable way in Asia, to connect and trigger a change in peoples ways of thinking potentially more effectively than the scientific explanation. The benefit in the indigenous narrative is echoed in the words of the Canadian environmentalist David Suzuki:

The way we see the world shapes the way we treat it. If a mountain is a deity, not a pile of ore; if a river is one of the veins of the land, not potential irrigation water; if a forest is a sacred grove, not timber; if other species are biological kin, not resources; or if the planet is our mother, not an opportunity -- then we will treat each other with greater respect.^{iv} (Suzuki)

Therefore if sustainability were to be approached as a collective responsibility then the sacred is a powerful metaphor. The sacred is a prevalent discourse within traditional societies in Asia and is significant enough to be in opposition to other discourse ecosystems. In the following section I explain how I have used the sacred to solve a particularly thorny problem in a design project.

Early in developing a project on recycling waste in a university campus in India I came up against the established practice of waste disposal in households in India. Traditional households refuse to have a waste bin in the house, a manifestation of the notion of waste as *polluting* which was defined by the oppositions pollution-outside/ pure-inside requiring that waste occupy only the absolutely minimum necessary time in the house. In order for the project to function practically there were two basic requirements; one, that the households segregated their waste and two, that I organized the circulation of waste in a manner so that it did not have to be picked up everyday. My solution was to use the pure-impure opposition to get households to practice segregation. Accordingly I suggested that each household segregated waste into two categories: the "non-polluting" waste which could be retained in the house till it became substantial and the biodegradable waste to be kept outside the house for daily pick-up thereby halving the amount of waste to be picked up at a time. Read another way the home-pure and waste-polluting categories point to the existence of negotiations that define the discourse of the sacred. For what makes something sacred is not that it is somehow connected to the divine but that it is the subject of a prohibition that sets it radically apart from something else [3]. In this the meaning is similar to the root meaning of the word sacred - to set apart.

To make sacred a useful discourse within design practice I refer to a previous work of mine^v where I proposed that the sacred be apprehended through four key aspects: First, the sacred be defined through oppositions: The description earlier of the encounter with waste practices of the households and the deployment pure-impure oppositions highlights an instance of oppositions. To be effective the solution relies on activating the preexisting narrative in the community of the sacred-profane opposition. Second, the sacred is about siting: In Hindu mythology the form of the *purusha*, a crouching man drawn into a square, defines meanings for the different parts of the square [site] based upon correspondences with the body parts of the *purusha*. Therefore it is imagined that the corner where the head is located is either the site for the shrine, or the room of the head of the family. A well-orientated house with well-sited spaces is considered a prescription for the prosperity and well-being of the family and is in fact a situation where the sacred and secular are in accord or effectively not in conflict. *Feng shui* is a similar Chinese system of harmonizing the terrestrial with the celestial focused upon aligning "invisible forces", known as *qi*, that bind the universe, earth, and humanity together. Third, anything can be sacred, that is, the sacred is not a single domain that can be analyzed as such but is a notion that can be attached to objects, shared system of beliefs and to place. The sacred has thus become a significant territory in the reclamation of what is theirs by indigenous peoples of different countries. Viewed from the perspective of an object, to be rendered as sacred serves to mark it or to set it apart as a significant object. In traditional societies almost anything can be made sacred by subjecting it to specific and ritualistic processes. Fourth, the sacred connects to an overarching scheme: This is a key attribute of the sacred, the existence of an overarching scheme, which often is the divine. The notion of such a scheme hinting at the interconnectedness of all that is external to the individual is a recurring motif in the way knowledge itself is constructed in traditional societies.

The sacred, to summarize, is many things: It is a construct and an attribute that is attached to specific objects and places. The proposition that a designer situated in Asia encounters is one of constructing a narrative that is at once progressive, and able to deliver prosperity, and at the same time respectful of traditional cultures. The following example illustrates how the sacred is used in an urban context to change peoples behavior. A usual spectacle in Indian cities is of men urinating in street corners, on the boundary walls of houses and public buildings. A solution that has been effectively deployed to counter this practice is to paint the figure of a religious icon onto the wall. The defilement stops. Here the sacred is used as a device as a way to deal with transgressions. The sacred in effect can be invoked as a device to either maintain the status quo, or to reclaim lost territory.

Lands with violent pasts and ongoing conflicts

If an account of the environment in Asia has to be given it has to be as a land with a violent past. The natural environment of Asia has been repeatedly and in turns modified by humans and over-run by nature as in the case of Angkor Wat where areas of an overgrown lost city are still being uncovered. Over a period of three centuries several countries in Asia were colonized by imperial powers, its populace brutalized, stripped of their wealth, land, community fellowships and customary means of livelihood with many aesthetic expressions, devastated and plundered to serve the economy and the interests of the colonizing nations. Thus colonial rulers have re-scripted the environment, in many ways often unleashing some catastrophic events: famines, land degradation, genocides, livelihood losses, and most importantly loss of self-esteem and intellectual resources, that in many cases have drastically changed the natural course of life and human development. Dictatorships and authoritarian regimes are common in Asia. A majority of the poor on the planet live in Asia, as do the majority of the planet's displaced people and refugees. Yet this place, the location of mass poverty, is also the place where grass roots activism pushes for the transformation of the lives of the marginalized. This is the face of social design in Asia.

The heightening of the cold war in the late 60s saw a rise in internal conflicts within Asian countries and the emergence of a more militant state apparatus that was not shy of quelling the populace and imposing martial law, frequently. The right and the left in these new states were courted by the two great powers and would receive funding, education and privileges of state in recognition. West Asia in the cold war was broken into the two parts aligned with either the USSR or USA and violence reached epic proportions in places like Afghanistan where the proxy war was played out with particular ferocity. The protracted period of conflict has laid waste huge swathes of land. The West-Asian states inside the iron-curtain meanwhile witnessed a dramatic destruction of the natural environment due to a particular form of industrialization that had a poor record of environmental stewardship. In Asia the continuing legacy of conflict is land mines, the memory and after effects of napalm and nuclear bomb, the evidence and memory of killing fields, and unexploded ordinances that still render areas away from the urban particularly lethal.

On the other side sparse populations, the prevalence of militant Islam and abundant petroleum resources define West-Asia. Countries in West-Asia can be fabulously wealthy and the citizens can live a life defined by state subsidies though often without political freedom. While south and south East Asia were maturing into a form of mercantile and global statehood, parts of West-Asia was descending into a new form of internal strife and chaos. Werner Herzog the filmmaker traveled to Kuwait to film the burning oil fields set on fire by retreating Iraqi troops during the last days of the Gulf War. The resulting documentary *Lessons of Darkness* provides "Mesmerizing images of the mutilated landscape--the shattered remains of a satellite dish, deserted shells of buildings and gigantic towers of blazing flames--and eerie shots of the fire fighters at work--themselves appearing like alien creatures silently communicating with each other--are combined with Herzog's sparse narration to create a (pseudo) biblical tale of destruction and man's uneasy relationship with the natural world".^{vi} (REF) The long wars in west Asia have devastated the population and land. Any activity of restoration will have to wait a while for peace. On another side a UNEP report raises the threat of climate change itself fuelling more conflicts; "Climate change will affect the countries of South West Asia in three major

ways: 1) acting as a threat multiplier in the ethno-religious heterogeneous and already conflict-ridden region, 2) hindering economic development and leading to contracting economies throughout the region, and 3) spurring new conflicts between or within countries and exacerbating already existing tensions"^{vii}. (UNEP)

Design vision in this part of Asia is intermittent and tentative. Qassim Saad, an academic at Curtin University and an Iraqi himself, devoted his Doctoral work to a study of the past and present condition of design in Iraq. His dire predictions, that have come true, included "Unfortunately, the nature of the sectarianism the political order is establishing in Iraq will comprehensively strengthen the existing environment of instability". Titled "Framework for Revisioning Design in Iraq" his work discovered that design academics "identified the difficulties in finding alternative meanings in the Arabic literature for the role of design in society." He goes on to propose a more social form of design, departing for the current culture of a focus upon the past and upon Iraqi identity and aesthetics. This is one example of the tensions in the emergence of a viable sustainable design practice in a conflict zone.

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Sustainable Design and Development in Asia

Asia as a thoroughly populated continent contains a landscape that is always in transition. What we see as pristine or natural is merely a progressive outcome of the interchange between humans and nature. Within the context of Historical Ecology we are aware that: "Humans have always transformed the landscapes they inhabit, however, and today there are no landscapes on Earth that have not been affected by humans in some way¹." Often natural landscapes in Asia have been perceived as 'natural' when in fact these uninhabited terrains were the site of cities and civilizations in the past.

In recent years remote sensing technologies such as LIDAR (Light Detection and Ranging) have enabled a closer examination of the surface of the Earth. In Cambodia LIDAR has revealed the hidden landscape of a medieval civilization of the Khmer in Cambodia. The Khmer kingdom (800-1400) was an extensive and mature civilization that had effectively transformed the land to establish their urban habitation. While the Khmer kingdom appears to have been obsessed with building temples they were also aware that the establishment and maintenance of power required a centralization of the human population into a large megalopolis i.e. a very large urban settlement. Such a large settlement required an enormous amount of water and food to function. The Khmer leadership's response was to map, plan and build reservoirs, water channels and an organized system of habitation and cultivation. The Khmer example is interesting for two reasons; for one, it tells us that Khmer engineers and thinkers had a reasonable comprehension of the visible ecological ecosystem, and for another they were not daunted by the task of transforming their landscape to change how the human population engaged with nature. The realization of the vastness of the Khmer civil works tells us that if nature was considered worthy of worship, as in deities representing wind and fire, it was also imagined to be pliable and moldable to human program. If anything the Khmer example tells us that the simplistic contemporary notion of the east being spiritually comfortable with nature and having a relationship with nature that ran deep as manifest in worship, mythologies and poetry demonstrating societal respect of nature and community resilience is a simplistic and potentially orientalist reading of man-nature relationships in Asia.

A big preoccupation of the Khmer was with water. Cambodia was a land cursed with torrential rains during the monsoon which resulting in excessive flooding. People living on this land had to live high above the water, which rose and fell by meters through the seasons. A land periodically covered with water is great for sporadic cultivation or just one crop a year, and its great for fishing. However this land affords at best a form of subsistence living, and is not conducive to creating a great empire. Yet it is on this wet land that the Khmer built a great kingdom with great buildings and streets. The Khmer construction used water and nature to define the form and function of the building. The archaeologists tell of an engineering feat, it they built a moat not as protection from people, but as a form of liquid buttress to push up the weight of the heavy stone buildings they were constructing. This is a singular innovation that redefines the relationship to water as not nature by as a technical device. Eventually when the great Khmer settlement was undone it was by a period of three decades of drought followed by a deluge. The Khmer kingdom leaves the city alone and moves away to the coast. Abandoned the city is consumed by nature and awaits discovery at a later date.

Social Sustainability in Asia

On Campus in a design school in India the ideologically orientated design student could be seen carrying a well-thumbed copy of the book "Design for the Real World" by Victor Papanek (year). This book was written before the explosion in mass manufacturing from China dramatically brought down the prices of products, especially that of consumer electronics, and made it possible for the poor in Asia to each have a mobile phone and to demolish the premise of the need to design a unique category of products for the poor. Still young students and designers find Papanek's polemic inspiring and the book serves well to segue the reader into a career in humanitarian design. The mature design practitioner community in Asia has however developed its own discourse for imagining design acting in the context of poverty, one that draws upon local narratives of sustainable action.

To function within the community of practice of sustainability in Asia is to be swept along by powerful, inspirational and visionary ideologies. Ideologies that are visible as projects and enterprises that connect to an "unnamed movement. That has roots in indigenous cultures, environment and social justice".^{viii} For these designers, who see themselves as change makers and as needing to be engaged in socially meaningful work, the existence of multiple narratives of change and transformation serve as fuel that ignites their creativity. Among the many narratives of change-making in the list below I describe five that I find particularly inspiring:

1. To privilege the natural and the Indigenous.
2. To give up, to simplify and to Renounce.
3. To be inspired by the tactics of Resistance.
4. To contribute to the collective program of Capacity Development.
5. To engage with the Vernacular.

To privilege the Natural and the Indigenous

I looked down from the steel structure that held up the windmill onto the campus of the Friends Rural Centre at Rasulia in Central India. Rasulia is a Quaker community in central India where Pratap Agarwal, as passionate advocate of Natural Farming, was based at that time. I had climbed up to see if I could fix a faulty windmill. Its 1989, I had come here with a friend, another designer, as we had recently read the book *One Straw Revolution* by Masanobu Fukuoka (YEAR). I was at this stage of my life looking to see if I could give up my city life to become an activist working on a farm. Fukuoka too had given up life working in an office to retreat to the island of Shikoku where he pioneered his "do nothing" technique of farming. The notion of Natural Farming he pioneered serve as inspiration, provide access to an ecology of ideas, and even give designers a role within campaigns such as one that may aim to limit the influence of faceless agribusiness. The 'natural' is a strong theme in textile design, in craft and in architecture in Asia where it can be encountered as a material discourse. The narrative of the indigenous is also accessible to the designer who may 'learn' from the traditional crafts person the indigenous way as manifest in the *urushi* craft (traditional Japanese lacquerware), in *ikat/shibori* (a form of tie-dye), or in traditional lime-based construction techniques.

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To Simplify and to Renounce

In Ahmedabad I enter a house in the middle of the city. Its evening and the interior is warmly lit by castor oil lamps as the house is not connected to the electrical grid even though it is in the middle of Ahmedabad, a bustling city of three million people. Praveen Nahar, the design academic at the National Institute of Design has brought me, with my Australian students, to Asal to show us an example of self-motivated action by a sustainability activist. We are informed that this place, Asal, a store of organic goods, is the vision of Shripal Shah who gave up a profitable career as a diamond merchant to pursue a more 'meaningful' career making a contribution to society^{ix}. It is apparent that this is one among many such examples of sustainable solutions that young designers and students encounter and get inspired by.

The strain of practice in design that focuses upon sustainable consumption pays particular attention to instances of anti-consumerism and to examples of activism that have effectively curtailed consumption. The instances of people who work to simplify life and consumption can be encountered in the common practice of the fast undertaken weekly on a particular day of the week. Simplification as a theme also aligns with the age old image of the renouncer; one gives up and moves away from 'mainstream society' to reduce ones aspirations, and to simplify life. Giving up and renunciation is a visible theme in Asia and accessible to the designer too. A few years ago in a course I taught in Melbourne an initial assignment required each student to give up and live without something that was important to them for a week. A week later in class most spoke of a feeling of superiority and of their friends considering them 'cool' upon hearing they were giving-up I-pods, and hair wax. Significantly at the end of the week none of them seemed to want to stop, some went on to give up many more things, like long showers and cosmetics, and were planning on continuing their abstinence routines longer. We were in this way dipping into ethical consumption and connecting with a global movement of people who gave up consuming specific things based upon their individual or collective beliefs. Only in many parts of Asia the students wouldn't have encountered the idea of giving up as a new or odd practice.

To be inspired by the Tactics of Resistance

Satyagraha is a tactic of non-violent resistance pioneered by Gandhi who described it as: "Truth (*satya*) implies love, and firmness (*agraha*) engenders and therefore serves as a synonym for force. I thus began to call the Indian movement '*satyagraha*', that is to say, the Force which is born of Truth and Love or non-violence"^x. Gandhi's life and ideas have served as inspiration for generations, both in India and overseas, keen to stand up for the right and against injustice and exploitation. In his campaign to stop the felling of trees in his native Garhwal, Sundarlal Bahuguna, a Gandhian, pioneered a variation of *satyagraha* that involved hugging trees. The resulting campaign, referred to as *Chipko* Movement, spawned variations of similar peaceful protests to raise the issue of the rights of the local and indigenous populations against the activities of commercial loggers and central development agencies. In yet another instance an act of *Jal* (water) *Satyagraha* involves a group of farmers near Khandwa in Madhya Pradesh protesting by standing in waist-deep waters of the Narmada river for 32 days seeking rehabilitation after being displaced by construction of the Omkareshwar Dam. The organization of locals to protest development that is detrimental to traditional communities connected to the land and the local ecology is a powerful input into the discourse of designers who can very easily be aligned to the interests of industry and the state. The frequent enactment of these tactics in the public sphere has allowed and continues to allow the idealist among designers to imagine and implement forms of resistance in their practice. Intellectually the narrative of resistance informs the discourse of sustainability, in the classroom and in practice, and invites the creative to participate in the conversation-making and the co-creation of the future of human habitat with the inclusion of the other.

To contribute to the collective program of Capacity Development

It's the Wheeler Centre in Melbourne and the speaker is receiving a very long standing ovation. Many in the audience have tears in their eyes. The speaker is Bunker Roy from the Barefoot College in Tilonia, in India. He has just showed the audience the work being done by the Barefoot College. "Barefoot College trains about 180 grandmothers from India and from the least developed countries as solar engineers. 64 countries have solar engineers, and 1.160 villages have been electrified. This results in annual savings of 2.7 million liters of kerosene. 45,000 people have light because of Barefoot College." [ref] The Barefoot College is one clear example of capacity development, designed to overcome obstacles that have impeded the development of the people living in arid rural India. In another project, the Jawaja Project, undertaken by the National Institute of Design, in collaboration with the Indian Institute of Management, imagined and implemented a program to transform the livelihoods of a community of leather workers. Today Jawaja leather crafts have a distinct, and very influential, visual identity and more significantly serve as an exemplar of a capacity development focused design project.

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To engage with the Vernacular

The Mingle bench is a large lounge seat in rattan, and quite startlingly modern. Alvin Tjitrowirjo the designer of this piece has built a practice designing large and beautiful furniture pieces from rattan. Alvin, an Industrial Designer who trained at RMIT university, is based in Jakarta, Indonesia. He is immersed within a community of designers and architects exploring different forms of the vernacular, as in forms of traditional ways of objects and the built environment, and has a mutually beneficial relationship with the rattan and bamboo craftspeople of Indonesia. Traditional crafts are very strong and alive in Asia. Projects that include craft communities, not just craft skills, engage the designer in a collective project of modernizing craft, as new designs and new ways of working the material, that transforms indigenous populations economically without requiring their displacement or their reskilling. The Book, "Bamboo and Cane Crafts of India", is a comprehensive document of the crafts of India. The book is also testament to the an aspect of Asian Design, where instances of designers working in rural areas, where the craft sector is largely located, is almost equal to if not greater than the size of design practice in urban Asia. Additionally the design aesthetic in Asia can be imagined as being significantly defined by the potential opportunities for variability and experimentation, such as in color and technique, afforded when designing a craft artefact. Contemporary design practice has many examples of hybrid practice, with interesting consequences for the traditional craft, where craft is interwoven into both the bespoke and mass-manufactured artefact.

To privilege Grassroots Innovators

I have been speaking about the Mumbai Dabba Wallahs who transport more than 130,000 lunchboxes in Mumbai, every day, and have been doing this for decades. Its a warm day in Paris in June 2000, four days after the hottest day in 2000, I am in a meeting at UNEP-DTIE focussed upon “Product Service Systems” (PSS)^{xi}. The notion of product service systems can be imagined as a step along the pathway towards dematerialization, when we would not be using physical products, but would have our needs addressed by pure services such as the *dabba wallah*. I have raised the notion of the *wallah* at this meeting. The *wallah* is a traditional service provider and many variations of service providers exist such as: *kabari-wallah* (garbage man), *press-wallah* (clothes ironing man), *bijli-wallah* (electrician), and even cable and computer-*wallah*! The Asian designer's everyday experience of the wallahs, as a mobile collectivized human service system, offers the potential of learning from these empirical examples. More importantly the discussion of PSS in Asia predictably questions the primacy of 'producer side' thinking that PSS privileges, and inserts into the narrative the existence of the informal sector and of the existence of barefoot aka grassroots innovators that this sector generates. Elsewhere the National Innovation Foundation in Ahmedabad has made the documentation and protection of the intellectual property of grassroots innovators its focus.

Sustainable Societies in Asia 3000

India will not curb its greenhouse gas emissions as long as the West continues to treat it as a 'second class global citizen' with less right to pollute than the developed world, a senior Indian environment official has said. (Peter Foster, The Daily Telegraph, 12 June 2007)

Some of the most polluted cities and toxic rivers are in Asia. New Delhi and Beijing vie for top spot as the city with world's most polluted air. The response to the Fukushima nuclear disaster exposed a culture of poor environmental oversight, regulatory failures and lax governance standards that still imperils those living in proximity to the site. Yet Asia is also home to the most inspiring and promising initiatives impacting upon the sustainable future of the planet. China leads the world as the largest investor in renewable energy with a significant portion of this investment going into wind and solar power. China thus accounts for 29% of all global investment in clean energy^{xii}.

In the transformation of China is a key aspect of the story of how Asia approaches its problems. Civic society in Asia can be paternalistic and govern by "program". This form of governance is unsettling and dangerous without genuine idealism, and a genuine vision for an altered future. The fact that Singapore, South Korea and China have delivered prosperity to their citizens in the absence of genuine democracy, at least in the early phases, is a less heeded lesson within sustainability and environmental discourse. The "programs" that the countries imagined contained experimentation and a level of trial and error. The continuation of the governance structure for an extended period ensured that the experiments were seen through till a satisfactory outcome was realized. The realization of a green Singapore, or a pathway to renewable energy in China was achieved by the privileging of government vision and economic investment [ref].

Asian leaders have a brashness to take on the grand challenges. Whether it be Asia, whether it be Africa, the leaders in Asia are providing the solutions, are providing a vision, are providing a pathway, are providing a roadmap into a future. The kinds of goals that are set in Asia are of the sort that have never been seen before on the planet. The kinds of solutions that are proposed are innovative. And the kinds of leaders proposing solutions are visionaries. Asia is showing a completely new way of tackling the world's problems.

Apart from the project of development which I have dealt with in the previous section as a tactical program for NGOs and creatives being addressed by Asian states is the existence of an ecosystem of innovation being propelled forward by the technological entrepreneurs and innovators. This 'ecosystem of innovation' contains a strong strain of sustainability and provides employment and work opportunities for designers from all disciplines of practice. In the section below I describe five sectors **demonstrating** progress towards a sustainable future in Asia: sustainable transport, sustainable cities, sustainable healthcare, social innovation and sustainable energy.

Sustainable Transport

I visited the REVA factory situated in the east of the city of Bangalore in southern India. The factory is built like a spaceship. The structure is curved and the walls wrap upwards to form the roof, the whole structure is made out of/ clad in multiwall translucent plastic. At the entrance there is a vertical garden attesting to the green-cred of the company. I am informed that the building has been built to use very little electricity and allows the light to penetrate the factory floor. The inside is similarly quiet, still and very bright. The lack of machine noise is because the production of the new model had not yet started and the old model continues to be made in the old factory. The owner of the company Chetan Maini is a visionary totally committed to the electric car and has pursued his goal of making the electric car a commercially viable proposition for 20 years. A year later I have invited the designer of REVA to Melbourne as a critic for a studio where students have been imagining the next generation of the REVA Car. Referred to as "swipe and drive" the studio proposition is looking to a society where car ownership is proscribed and the REVA car is a form of public transport. We in Australia need a link to a visionary company in Asia to realise/ energise a design studio in sustainable transport. Electric vehicles are a small part of the landscape in India. However in China electric two wheelers are ubiquitous, and the design of these vehicles, though generic for a long time is now starting to change and

The train to Tianjin from Beijing took a mere 45 minutes. At either end of this journey I had easily walked off the street to catch the train. On my previous trip seven years before I had taken a flight for this short journey and had been held up for hours due to bad weather. This time I had travelled by a superfast train, though not the fastest that China was building, and was experiencing the fruits of colossal investments being made into public transport in Asia. Beijing and Tokyo metro have a ridership that is among the highest in the world. Japan's rail and metro system are considered the model for emulation. Asian cities have very large populations and have prioritized public transport to give their citizens inexpensive transport within urban areas and also between cities. As a result today one third of the world's metro systems are located in Asia, with 23 new networks being built in the three decades leading up to 2000. This reliance on public transport, with metro systems in Asia carry over 70 million passengers each day representing nearly half the world total, is a unique feature of Asian approaches to urban mobility and a significant contribution to the global project to realize sustainable transport.

((Praveen - Designers work on projects in the metro systems to design the interiors of trains (name?), Metro stations are the site for design and art programs ...)) Shreya, a designer working in the Institute of Transport and Development Policy's projects on sustainable transport, spearheads the Bus Rapid Transport Systems (BRTS) implementation in Indian cities. She is one of the key designers in the transformation of the traditional cycle rickshaw by reducing its weight and modernizing its construction.

Sustainable Cities

Hariharan/ ZED homes is the boutique end of ecohousing in India - but you can buy ecohouses in India (can you do that in Aus?) - explain. At the other end of the scale, apartment blocks in Mumbai are advertised as being certified with a LEED Platinum rating. To function in these cities with builders, the state government, and individual investors the architect and the designers have to project and incorporate a significant vision of the future sustainable in their concepts/ designs. Is Asia leading the way in notions of sustainable housing? In some ways the total quantum of platinum LEED certified buildings in Asia dwarfs anything similar, collectively in the developed world. What this does not however produce is a visual journey, a visual landscape, that looks like the streets of Copenhagen. There are many reasons for this. One is that sustainability in Asia is practiced but not necessarily visible. Port Blair in the Andaman Island is on an island with scarce drinking water resources. ITC welcome group building a hotel in the Andaman Islands took upon themselves to challenge in the early 90s of building a hotel and tourism complex that would have a very small ecological footprint.

At a much grander scale is the Tianjin ecocity / EcoCities project. Being built, nearing completion, to house 300,000 people by the Singapore-chinese consortium (name) the city is visualized to be a model of sustainable cities for the future. The purpose and effectiveness of models apart - the scale and the extent of reduction in eco impact being achieved in this project is astounding.

- toilets, affordable housing (explain CHL and the affordable housing scale - plus the expectation in India that the providers will produce this housing with LEED sus values)

Sustainable Healthcare

Pramod had in his hand a small metal ring with tiny holes on the perimeter. He was showing me a component of the next model of the camera that he was working. Pramod is an Industrial Design Graduate and Remidio was the start up he had set up with partners and as they articulate their vision: "to bring to market ophthalmic devices that are affordable, easy-to-use and built with a larger aim of tackling avoidable blindness in resource-starved situations". Of the 37 million people across the globe who are blind, over 15 million are from among India's poor. Asia has a very large population of the poor. Outside of the urban centres and among population of the rural and remote poor health outcomes are some of the worst on the planet. While there are NGOs and health care professionals who have left their successful careers in cities to set up remote practices in poorly served communities The incidence of startups entering the space of is a new phenomenon. The presence of designers among these startups is however not rare. The Stanford BioDesign Program, in collaboration with a hospital and IIT Delhi works to put designers and doctors together to visualize new startups focussed upon problems in the healthcare sector.

Maternal mortality is a significant health issue in India. Roughly 20 to 25% of Maternal Deaths on this planet occur in India. A major proportion of these deaths occur among the rural poor. Late in 2009, I commenced work on a pilot project to explore maternal mortality in Assam to explore how service design could contribute solutions to the problem of maternal mortality reduction. The project was undertaken at a time of a unique rethink and reformation of rural health services in India brought on by its commitment to meet the Millennium Development Goals (Mavalankar, Vora et al. 2008). This commitment has created a condition of unprecedented openness to innovation among government agencies dealing with rural health. Through my project I discovered projects by designers such as Lakshmi Murthy who works in Rajasthan on improving access of rural poor to DIY menstrual pads. I also encountered projects within design schools focussing upon devices in the neonatal space, such as technical devices focused upon reducing incidence of infant mortality.

With its vast underserved communities and the sheer number of groups serving them, India is the site of countless healthcare innovations focused upon the poor. The Center for Health Market Innovation (CHMI) profiles more than 240 innovative programs in India^{xiii}. Among these innovative initiatives are: One, Narayana Hrudayalaya is one of the world's largest pediatric heart hospitals, performing 32 heart surgeries a day. Almost half of the patients are children and babies and almost 60% of the treatments are provided below cost or for free. Two, Aravind Eye Care System (AECS), a network of hospitals in India that has served 32 million outpatients and performed four million surgeries, provides free services to 70% of its patients. The motives of this agency are expressed in the words of Aravinds founder: "Intelligence and capability are not enough. There must also be the joy of doing something beautiful". (Dr.G.Venkataswamy)

Social innovation

India is referred to as the powerhouse of social innovation. This may be because of the sheer number of projects, ventures and the sheer quality of individual innovations. Social innovation needs both a huge size of the social sector, or a huge population of the poor or underprivileged or marginalized, and a strong community of innovators. India has both these in very large doses. While Asia has a very large population of the highly educated and correspondingly a high population of innovators, not all countries in Asia have a large NGO sector like India and not all countries have a social sector that is porous to both locals and international NGOs to function in. Social innovators do not necessarily have a specific professional or disciplinary background and there are many designers and creatives who are social innovators.

At the year end show at Srishti in Bangalore I listen to the speakers, one who speaks on giving up his successful practice to focus upon a new venture to bring drinking water to the poor. Another Neelam Chhiber is a Bangalore based Industrial designer whose quest for meaningful work in design practice led her to work in the craft sector; such as a state funded project on developing a design strategy and product diversification vision for the jute industry. Her foray into craft led her to collaborate with others working to make craft communities sustainable. She today is a partner in a social innovation enterprise, Mother Earth, which is a retail outlet in cities and is a rural income generation program in handicraft for over 20,000 women. Anurag, is a Mumbai based architect who imagined a micro-portable banking device that could turn individuals into banks. His venture Zero, now supported by India's largest traditional bank, reaches out to the remote and rural poor.

- Zero, with over four million rural customers, 8,314 points of presence and an average of 25,000 new account openings every day. A Little World (ALW) In 2000, Anurag founded A Little World Private Limited (ALW) education Anurag is an architect. Prior to setting out as an entrepreneur in 2000, Anurag worked as an independent, self-employed housing and architecture consultant in India from 1991 to 2000. She holds a mobile phone, a small biometric reader and a receipt printer. The other lady, slightly her senior, presses her thumb on the small square, displays her photo ID badge and speaks into the phone. Within moments, her identity is verified and money exchanges hands.

Social enterprise, challenges (clean up India) - government schemes - modi's 10

Sustainable Energy

If the price of solar technologies is dropping it is entirely due to the efforts of China. In fact this is one of the most significant stories unfolding today. As we speak the price of solar and the price of wind energy will continue to drop and investments in solar power stations and wind power stations are being made outside of state subsidy. The story of renewables historically has been one of state-sponsored construction of power plants. Just as the construction of Hydro dams has traditionally been a state enterprise. Hydro-electric dams are being built in many emerging economies, and some developed ones too, without subsidies. One caveat is that many of the developers are public sector – research by Bloomberg New Energy Finance last year found that 14 of the 19 largest owners of hydro capacity worldwide were wholly state-owned. So they may not be subject to the same rate-of-return pressures as private-sector players. However, the big change in the last couple of years has been that some projects in the fast-growing but supposedly expensive sectors of onshore wind and PV have started to happen without any subsidy support. There are unsubsidised panels being installed in many countries, especially in developing economies, (this changes the way architects design?) In the poorest countries, the most popular form of unsubsidised solar by far, for the moment, remains solar lanterns. (mention barefoot power, pollinate power?) Development banks are likely to have increased their investment in clean energy in 2013, although not all have yet released final figures and so no overall total is available. With such huge impacts upon Co2/ climate change/ global warming - the way we speak about sustainability within design has changed. The fact of designing green objects, clothes and houses - is visible more sharply as a 'choice' for perceived value at sale and not as a contributor to global sue challenges - so the sanctimonious green designer is now a 'campaigner' and not a solution provider. Asia is thus a location of a different way of thinking about sustainability!!

Draft - Not for

Conclusion

Great things are visible within sustainability practice in Asia. A whole course on sustainability in a design school can be run using local and pan-Asian examples. To be a designer in academy, or in this part of the world, is to be swept along by the collective energy of the narratives of grand transformations. In the contemporary discourse the emergence of multiple visions of the possible futures and of alternate ways of solving intractable problems has energized both design academy and practice. Overall design practice focussed upon meaningful work is re-energizing the flagging idealism within academic practice.

In the past two decades there has been an explosion of the quantum of design institutions, practices and employment opportunities. This has transformed all aspects of the huge diversity in practices. The old dialectical argument between designing for the rich versus designing for the poor has transformed into an internal conversation within the two narratives, two sections of design practice and the archaic oppositional narrative is a neglected one.

Designers in the sustainability space in Asia need not be focussed anymore upon incremental change such as up-cycling (which is not a viable option in many cases), ecodesign or LCA. These forms of design practice are done anyway in a sophisticated form by enterprises through their environmental engineering sections delivering compliance towards their ISO1400 certification responsibilities. The edgy new focus is not then upon helping producers develop ecofriendly products, or to enable behavior change to get people to consume less and consume responsibly, aka housekeeping for the planet, but upon the bigger projects that provide bigger impacts. The global and local are redefined for a completely different ecosystem. End of life of products is acknowledged as a problem which witnesses a detrimental local impact of cascading of use of products that migrate in their biography from the developing (western mainly) contexts. It is not yet time for the trade (minor narratives) in waste to become prominent enough for western governments to pay a penalty for damaging living conditions in developing contexts.

All this while sustainable design literature, mainly western, operates using archaic stereotypes of Asia. There is very little evidence that the 'business and usual' narrative of protecting what we have today, for future generations, is able to appreciate how parts of Asia are leading the way through new visions, initiatives, practices and technologies to realize a densely populated sustainable future for the planet.

In the main places in South and South East Asia have become the locales for idealism, attracting idealist western designers and providing great projects for local designers.

Further Reading

Bicknell, J., & McQuiston, L. (Eds.). (1977). *Design for Need: The Social Contribution of Design*. London: Royal College of Art Pergamon Press.

Boschman, R., & Trono, M. (2014). *Found in Alberta : environmental themes for the Anthropocene*.

Cañete-Medina, I. (2008). Are Asian Cities Leading the Way to Sustainable Mobility? *Transportation and Development Innovative Best Practices 2008* (pp. 15-20): American Society of Civil Engineers.

Chakrabarty, D. (1992). Of Garbage, Modernity and the Citizen's Gaze. *Economic and Political Weekly*, March 7-14.

Clapp, J. (2001). *Toxic exports : the transfer of hazardous wastes from rich to poor countries*. Ithaca: Cornell University Press.

Clifford, M. (2015). The greening of Asia the business case for solving Asia's environmental emergency. from <http://public.ebib.com/choice/PublicFullRecord.aspx?p=1922369>

Fukuoka, M. (1978). *The one-straw revolution : an introduction to natural farming*. Emmaus: Rodale Press.

Guha, R., & Martinez-Alier, J. (1997). *Varieties of environmentalism : essays north and south*. London: Earthscan.

Justice, L. (2012). *China's design revolution*. Cambridge, Mass.: MIT Press.

Lawson, N. (2008). *An appeal to reason : a cool look at global warming*. New York: Overlook Duckworth.

Papanek, V. (1974). *Design Responsibility: Five Myths and Six Directions Design for the Real World: Human Ecology and Social Change* (pp. 215-247). London: Thames and Hudson.

Pilloton, E. (2009). *Design revolution : 100 products that empower people*. New York: Metropolis Books : D.A.P./Distributed Art Publishers distributor .,

Ranjan, A., & Ranjan, M. P. (2009). *Handmade in India : a geographic encyclopedia of Indian handicrafts*. New York: Abbeville Press.

Ranjan, M. P., Nilam, I., & Pandya, G. (1986). *Bamboo and cane crafts of northeast India*. New Delhi, India: Development Commissioner of Handicrafts, Govt. of India : Distributed by National Crafts Museum.

Rawsthorn, A. (2007). Alice Rawsthorn on design for the unwealthiest 90 percent. *International Herald Tribune*, (Sunday, April 29). <http://www.ihrt.com/articles/2007/04/27/arts/design30.php>

Reader

Smith, E. C. (2007). *Design for the Other 90%*: Editions Assoulin.

Steffen, A. (2006). *Worldchanging : a user's guide for the 21st century*. New York,: Abrams.

Varadarajan, S. (2009). *Service design for India: The thinking behind the design of a local curriculum*. Re-Public. <http://www.re-public.gr/en/?p=1115>

Varadarajan, S. (2010). How the Sacred Could Be a Framework for Sustainable Design Practice. *Design Philosophy Papers Design Philosophy Papers*, 8(1), 35-47.

i Of Garbage, Modernity and the Citizen's Gaze by Dipesh Chakrabarty

ii Gandhi in Dipesh Chakrabarty

iii <http://www.biothinking.com>

iv <http://earthwisdomstories.com/earth-quotes/node/36>

v DPP

vi Maslin, Janet (October 25, 1995). "Werner Herzog's Vision Of a World Gone Amok". *The New York Times* (The New York Times Company). Retrieved October 31, 2010.

vii <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=307>

viii (P Hawken Video) <https://www.youtube.com/watch?v=iW8BytViI54>

ix (<http://yourstory.com/2009/01/shripal-shah-founder-asal/>)

x <http://www.sahistory.org.za/archive/44-gandhi-explains-satyagraha>

xi Product-service systems and sustainability : opportunities for sustainable solutions

xii <http://www.ft.com/intl/cms/s/0/8209e816-97de-11e4-b4be-00144feabdc0.html#axzz3aXbp6sDL>

xiii <http://healthmarketinnovations.org/locations/india/programs>