THE FUTURE IS FRUGAL

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ABSTRACT

The Frugal Design Studio at Srishti has been working for the last 8 years to explore the future of design through the lens of frugality. In a consumerist world where resources are being recklessly used up, the natural environment is being degraded daily, it seems that there is not much choice – one definite path to the future is going to be frugal. This position paper explores and unpacks frugality as it can be applied to design. The paper attempts to understand frugality in the context of history of craft and design, everyday practices in India that are slowly disappearing, reasons why it is not subscribed to, projects done by the Frugal Design Studio and how it could be applied in the future.

WHAT IS FRUGAL?

Being frugal and thrifty was considered a positive value all over the world, until it was overthrown by consumerism. The consumer age associated frugality with an unimaginative pragmatism. Frugality can be seen as miserliness, as a last resort in the face of ecological disaster, or more positively as a lack of clutter, as a calm and beautiful quality, as discernment and restraint as opposed to unthinking gluttony. In our attempt to explore frugality in the context of design, we have been influenced by several people and through our experiences in different contexts.

Gandhi proposed many future forward ideas, and the concept of Swadeshi or self-dependence is particularly relevant today. In Indian villages, people have lived for thousands of years in relative harmony with their surroundings. A 100 years ago, people lived in homes made from local material, wove their own textile, ate locally grown food, cared for their animals, forests, and lands; This is a perfect and utopian example of a low impact, minimal self reliant society. [1] Moreover, this was echoed in villages around the world before the Industrial revolution.

Swadeshi or the use of the locally made, in the context of production came at a time when industrial production was rapidly killing the handmade in India and the rest of the colonized world. For example, the beautiful handmade textiles of India were replaced by mill made fabric from Manchester. [2] The effects of this colonization have come a full circle today. The most exquisite muslin in the world was produced in Bangladesh about a 100 years ago. Today clothes of big global brands are made here using completely different means of production, that are disrespectful to individual skills, where people are used merely as labour, and their proud history in the textile crafts is devalued.

Buckminster Fuller has been an inspiration. Fuller was an engineer, architect, environmentalist, designer, poet author, teacher… In his book 'Operating Manual for Spaceship Earth' [3] Fuller says 'We have discovered that it is highly feasible for all the human passengers aboard Spaceship Earth to enjoy the whole ship without any individual interfering with another and without any individual being advantaged at the expense of another, provided that we are not so foolish as to burn up our ship…' One of Fuller's best-known works is the Geodesic dome, a polyhedral construction first designed by engineer Walter Bauersfeld and patented by Fuller in 1954. The dome worked in part thanks to a structural principle that Fuller coined - tensegrity. Tensegrity is a word made of two others - tension and integrity - and refers to the relationship and balance between tension (tightness or tautness) and compression (a force that shortens or squeezes something) in a structure. Integrity stands for making the strongest structure with least material.

DEFINING FRUGAL

As a philosophy, frugal could mean making individual and focused choices that are not influenced or guided by the 'wisdom' of mainstream market forces and cultures that claim to know what is good for us. These choices should be about what we really need, and not subscribing to the suggestion the things we own become who we are.

Designers like Victor Papanek, Bruce Sterling and many others have urged the product designer to consider what he/she designs, and the impact this has on the world.

"… my products are festooned with baroque amounts of functionality and tied deeply into sophisticated, unstable networks of service providers. As an End-user in a destabilized high tech society, I take great comfort in useless functions; they may well be impractical, but they give me a sense of dignity, like the silk ribbons and gold braid on a Renaissance courtier..." - Bruce Sterling in Shaping Things [4]

In mainstream Industry, frugal is understood as engineering where frugal innovation is used to design products by reducing complexity, removing features that are not needed and adapting a product made for 'first world' markets for a 'mass' market by removing some of it's 'frills'. A good example is the ECG machine designed by GE that is a hand held portable device, costs very little per patient to run and can be carried to remote locations as opposed to the larger more expensive ones normally used in hospitals. There are numerous examples of frugal innovation coming from the grassroots, like the Jaipur Foot, which is a low cost rubber-based prosthetic leg for people with below-knee amputations and has helped many people to overcome their leg disability. It was designed by Ram Chander Sharma in 1968 to be inexpensive, water-resistant, and quick to fit and manufacture.[5] Frugality could be defined as a value where we are prudent and careful with any kind of resource be it money, be it material, technology or time, not because we have to, but because we want to.

NOW TO DEFINE DESIGN

Design has been through many interpretations through its relatively short history. Design has also been a response to social and cultural shifts of the world around us and has often interpreted these into form and material. 'Small is beautiful', 'Less is more' all came from the post war situation in the early 1900s. [6] The Bauhaus (1919 - 1933) saw industrialisation as a means to make good design accessible to all people instead of just the elite. In the late 1900s sustainability, network building and the need for 'appropriate' as opposed to 'better' became important. In 1997, UNEP (United Nations Environment Program) published "Ecodesign: A Promising Approach to Sustainable Production and Consumption"[7] to lay the foundation for widespread adoption of sustainable concepts in design.

Design deals with multiple dimensions of logic that sometimes compete for attention. As we create, we privilege one over the others to give ourselves direction and meaning. Some of these dimensions are formal or semantic, functional, material, emotional, systemic, and much more. Design becomes an optimization and depending on our beliefs and the people we design for, we may decide to put one quality on top. Can frugal be that quality?

Charles and Ray Eames made recommendations for design through the India Design Report in 1958. 'In a country that faces the food, shelter and distribution problems that India does, it might be well to take a close look at those things that constitute a "Standard of Living" in India. What are the real values? To what degree is snobbery and pretension linked with standard of living? What do Indians desire for themselves and for India?'[8] They speak of the lota1 as being the perfect example of good design and hope was that design can appraise and solve the problems of our coming times with the same tremendous service, dignity and love that the lota served its time. [9]

In 2011, India Design Council published the National Design Policy [10], which describes design as a driver of innovation and is recognized as a key differentiator for providing a competitive edge to products and services. Design here has been approached as an add-on, as value addition in the market. It becomes not so much about need, 'real values' or about problem solving, but almost something to help sell a product or service. From being deeply internal it becomes completely external. Has design lost something in translation in the last 60 years?

HISTORY OF FRUGAL IN INDIA

In India frugality is something we've always valued. Traditionally we have been careful with our resources and assigned more than a monetary value on the things we use. We have a rich culture in repair and reuse, supported by the availability of skilled people to mend just about anything. A good example of this are the raffoogars, who darn tears in fabric so finely and invisibly, they are really artists who save a beloved garment. This is only a small example of the value placed on a fine sari or shawl, beautifully crafted, well-worn leather footwear, the sensuous form of a kitchen utensil or a finely made wooden door. Things were made and used with care and as they grew older, their value only increased. We had access to people who were healers of these products, and went about their craft with the same care as the artisan who originally made them.

We can also see this kind of frugality in small workshops all over India, people who weld metal to make grills for windows and doors, people who repair appliances, people who run small tea shops and eateries, small traders, barbers and many more. There are dyers, cooks, the ironing men, dhobis2, sweet makers, all of whom are experts at their work. There are hundreds of different types of these service providers still, who use the simplest equipment and provide services that stretch the lifecycles of many products and materials. Each of these people run a micro enterprise that is well balanced and is customized to fulfil a specific need. Today this ecosystem, that has been alive and kicking for centuries is under severe threat from single use packaging, mass market brands, trend driven fast fashion and the rising cost of living.

Craft practices are inherently frugal and have been part of everyday life in India. Most things that people used were made locally, sold and used within a small geographical radius. In addition, out of that frugality came abundance in ingenuity, in form and beauty and in the spirit. Craft was hit by industrialisation and in the 1970s, it went through an especially low period due to the influx of cheaper and sometimes better machine made goods. Crafts persons became increasingly marginalised, and their products trivialised as 'ethnic'. [11] As the gap between markets and customers physically grew, customers had no idea about what they were buying and artisans had no idea who was buying their products. Today the situation has improved, but several craft practices are on the verge of extinction.

WHEN WE ENCOURAGED TO BE EXTRAVAGANT

Industry and society has organised our lives so that consumption and extravagance are seen positively and frugality is seen as miserliness. Some ways in which this has been done are:

We don't see the whole picture - Most of the time, we don't think about where things come from or where they go. Water comes from a tap, excreta disappear into the toilet and milk is delivered in a packet. Where does the water come from, what happens to the excreta, are edited out of the picture.

Who makes our things? There was a time when the baker delivered your bread, when you chatted with the cobbler as you ordered your shoes, and the carpenter came home to build a chair. Today our things come in a box and we have no idea how or who made them. Industry focuses on the unboxing experience - we open a box and lo and behold a brand new phone is born. They emerge pristine and untouched and tell no story of where they come from. We love them briefly, but soon discard them for the next unboxing experience. And in that discarding we throw away so much. Can fresh relationships be built between the user and the maker?

What problems are we solving? Are these even problems? Much research goes into developing new technologies and every year our gadgets get smaller, more efficient and cheaper. The reality is that companies are designing obso-

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1 Lota – traditional round pot in brass, silver, terracotta or plastic, can be used to store water, grains etc. comes in a variety of sizes, can be ornamented or plain
2 Dhobi – washer men/women for clothes

lescence into their products so that we are forced to buy the new version. [12] To pay for the cost of development, companies need to sell more, we have to buy more and discard more. While our basic needs remain the same, we are convinced that we need faster and smaller devices to do the same things. How can this cycle of development-pro-duction-consumption-waste be broken into? Can all this development be diverted into more 'useful' channels?

Ivan Illich talks of the 'consumer society where there are inevitably two kinds of slaves: the prisoners of addic-tion and the prisoners of envy.'[13] How do we find freedom from this slavery?

FRUGAL DESIGN AT SRISHTI

The Frugal Design Studio has been working for the last 8 years on projects that revolve around how we use resourc-es – whether material, energy or technology to the fullest effect to develop an understanding of frugality. Can design become more discerning and conscious, seek an aesthetic in material and function that is authentic, so that the product is true to where and how it is made and who uses it? We believe that frugality combined with the power of new technology, small-scale, customized production, can change the way products are designed and made. Projects range from working with grassroots innovations, with craft, collaborations and workshops.

THE INFLUENCE OF FRUGAL ON CURRICULUM

'So a way of doing leads us to a way of seeing, a way of seeing to a way of doing.' - K G Subramaniyam [14]

We reworked our new program, Industrial Arts and Design Practices (IADP) in 2015, and we shifted the em-phasis from a user/market led approach to making as a tool for thinking, as a way of learning and conceptualizing.

It is the way of seeing that we want to emphasise. Becoming aware of systems of production, how things are made in different scales, how technologies are creatively used allows the student designer to become aware of the materials he/she is using and the impact it has. Working first hand with people who make is an important way to becoming a more conscious designer and we have introduced the concept of locative making. Locative making is based on production within a specific geographic area, using available tools and skills. Hands-on making develops respect for materials, for people and skills, and could close the loop between thinking and making more frugally.

COLLABORATIONS

Through projects we create collaborations with NGOs, communities, faculty and students to find answers to ques-tions on frugality and the various ways it is present in today's bludgeoning urban world. One of them is about vul-nerable communities as described by Selco Foundation. [15] There are large communities living in pockets in the heart of growing cities in our country who are denied basic rights of urban welfare because they do not possess proof of residency. They are commonly called 'squatters' or 'encroachers' who are brought into cities by the truckload to work inhuman hours and labour for a pittance. They usually look for seemingly unoccupied plots of land to set up blue-tarp shelters for themselves. They are poor and hence are hauled up on suspicion whenever there is a crime in the neighbourhood. The landlords want to evict them. They cannot get electricity connections or access to ration shops as they have no papers. On the other hand if they weren't there many of us may not be able to afford maids and drivers. Selco creates inclusive financial models so they can afford better products. For example a robust solar power system on a flexible loan policy is paid back through money saved on electricity.

An interesting project with Selco is Inventing Green where we worked to reduce the embodied energy of ma-terials used to make solar products. We worked to imagine new ways to think and work with materials and manu-facturing processes, form, and packaging using local skills, materials and craft practices wherever we could. We also developed curriculum using the Okala practitioner guide. [16]

Familiar Process, Unfamiliar Terrain was a project to understand and design for vulnerability in fishing com-munities in Udupi, Karnataka. One group attempted to design low cost toilets for fishing boats, while another worked on cooking facilities. The question that arose is that both toilets and kitchens are non-existent on the boat. So almost any solution is better than nothing. Cost is the obvious constraint, and safety and comfort had to be achieved in the most frugal way. These collaborations give us starting platforms of exploration, which leads to other courses and projects and components of teaching units. In turn students get opportunities to connect with complex issues that are otherwise not addressed.

INTERNATIONAL WORKSHOPS

We have been part of several workshops that have involved mixed groups of participants from different countries and cultures. Exploring ways to think about frugality in different contexts with multicultural groups allows us to expand our vision. Some examples of these kinds of workshops are:

International Design Summer School (IDSS) 2016 where students from China, India and Switzerland explored how frugal design thinking could be applied in Zurich. The outcomes of the workshop were very ex-

ploratory, and mainly served to clarify what Frugal Design could be, could we look at issues around us through the 'frugal' lens, constraints being a spur to creative problem solving and systems thinking being a crucial part of Frugal Design

Behind Fences (May June 2017) was a longer workshop in run in Hamburg's Gegenwarts Akademie to explore what design can do for people on the run, shelter-less and without resources. Some thoughts that emerged are:

Membrane of osmosis/porosity along the border of the camp: Develop a number of activities to encourage informal mixing between inmates of the refugee camp and neighbours/citizens to encourage a sense of belonging

Financial sustainability: However liberal Germany's foreign policy may be, taxpayers pay for maintaining the large infrastructure of refugee camps. This sooner or later is bound to generate some resentment among the citizens. Can income-generating opportunities be created for the inmates?

Understanding refugee policy: People knew little of the of details Germany's liberal refugee policy. From our research, we found there was no common resource, which could inform the common man on them.

Macro versus micro efforts: Does everything have to be giant scale? The idea was to introduce means by which a larger number of people could make a larger impact even if they each did some things in a small way.

'Frugal Design - Potential of the Thrifty' (2017) was a research project realised by the Design Department of the Zurich University in collaboration with Srishti and Selco Foundation. In a jointly organised workshop, we studied notified and un-notified slums where migrant workers live in Bangalore. Access to clean water is a basic service that is missing here and translates into dismal health conditions within these communities. Our larger learning through this workshop was that it is important to not allow the severe constraints of the context to restrict creative ideation. In fact in extreme situations, it is more important to think laterally. While the situation does need solutions immediately, band-aid kind of fixes will not have a positive long-term impact.

WORKING WITH ARTISANS

Working with artisanal communities to document, map, develop new products, learn and explore is something we value. Our experience with craftspeople goes back 25 years and most of our ideas of design and frugality come from observing and learning from their practices. In one example we were approached by a wild life preservation organisation to design products for a community in an extremely remote part of North Bihar. Instances of poaching in the nearby forest were becoming frequent, and they wanted to find some alternative livelihood opportunity. This place was isolated and almost cut off from the outside world. They wove baskets using the moonj grass growing there and had never sold them before. This was craft in its purest form. This was the perfect example of the circular economy where the raw material grew wild, the tools were minimal, made by the blacksmith, baskets were exchanged, and older baskets were not discarded, but used to feed cattle, eventually going back to the earth. The women were extremely proud of their skill and much as we tried to simplify patterns, insisted that they were too proud to allow a hastily made basket to leave the valley. Here was frugality in practice and extravagance and abundance in spirit.

Ashok Chaterjee talks about craft in India as one practice that addresses most of the fundamental sustainable development agendas of our time: managing threats to the environment, promoting justice, equity and peace by bringing the deprived into the centre of concern, empowering women through recognition of their craft roles and contributions, offering identity and confidence in an era threatened by globalised uniformity, providing sustainable livelihoods to communities in their own locations, protecting them from the miseries of migration, and leaving a light carbon footprint to address the threat of climate change. [17]

STARTING POINTS TO A MORE FRUGAL FUTURE (SPECULATIVE)

Modularity: Today companies go out of their way to not make things modular. What if products were designed to be modular, so that when one part is damaged or old, the defective part could be simply replaced?

DiY: The do-it-yourself culture is already well known and has been used by enthusiasts for a long time now. What can the designer do to encourage this, to make it easier for 'non-technical' people to make their own products?

Local Production: With emerging additive technologies products will be made in smaller, local workshops, instead of large factories. They will be customized, recycling will be built into material design and there will be less waste.

Combining hand-made with mass-produced components: The hand-made exists today at opposite ends of the spectrum. On one end, expensive 'designer' products are all handmade. On the other, there also exist ordinary things we see everyday and don't even recognize as handmade – strings of flowers, bamboo baskets, and much more, especially in the Indian landscape. Compare a handmade product with an industrially produced device. The value of the device is extremely high when it is first introduced and then rapidly plunges after a few months. Contrast this with a handcrafted heirloom whose value actually increases with age. Could we increase value by combining the hand-made with 'high' technology?

USING FRUGALITY AS A DESIGN PRINCIPLE

We are on the brink of the 4th Industrial revolution characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres in the words of Klaus Schwab, Founder, World Economic Forum. [18] The biggest fear that people have about this future is inequality. Skilled people who embrace this new world will do well, but those who are semi-skilled may find themselves replaced by robots, which has already started in most automobile plants. According to a World Bank Report, [19] digital technologies will allow firms to scale up or down quickly, challenging traditional production patterns. The offshoot of this could be that manufacture will move to smaller local units, and will require specific skills - a combination of technological know-how, problem-solving, and critical thinking, as well as soft skills such as perseverance, collaboration, and empathy.

Revisiting the artisanal context, the maker works and lives in the same space not separating them physically or mentally. We have lost this to the current production economy, which does not just separate private and work time and space – it also separates the way we think and internalize. Can frugality move out the confines of a practice or academic definition and spread beyond the disciplinary domain to a more holistic state of being?

In the design process can we question - what are needs – and what are frills? There are more complex definitions where frugality could also be open to interpretation, going beyond material optimization. We can choose to be careful and conscious of what we make and use. We can design products that people really need and want, in small numbers, customised, products that are thoughtful and add meaning to our lives. We can choose to combine old and new technologies, include our artisans and be more creative in production so that products carry forward some of the magic of their origins, in thought and in making.

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