India Matters

Leather from Production to Co-Design

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Abstract: This investigation of communities working with leather in India is based on case study research consisting of tanners, artisans and entrepreneurs. Beyond the stereotype of a polluting industry where child labour is considered to be rampant, we find approaches to ecologically and socially responsive design. This is informed by a recent survey of the leather trade in India and current interactions with the subcontinent, including a live client project with a partner institution in the United Kingdom. Focusing on a particular material and trade, the research aims to shed light on the contribution of design networks in the transformation of the Indian and British shoe and leather industries, by means of mapping the interactions. We find that designers work with artisan collectives in an effort to remake traditional objects such as footwear and fashion accessories, and, in doing so, stimulating local economies. These makers display entrepreneurial behaviour and are incorporating innovation, collaboration and networking. The paper concludes with a discourse around socially responsive practices that will impact on the production, reception and consumption of design.

Key words: India, leather, footwear, socially responsible design, co-design

1. Introduction

This paper explores the various collaborations of leather technologists, artisans and entrepreneurs in India and the United Kingdom (UK). The literature on knowledge management includes investigations on industrial clusters to do with footwear, such as Porter [9] and Schmitz [15]. Here, socially responsive practices, educational and research links between participants in India and Britain are highlighted. The contribution that this work makes, is to present case studies around leather technology, design and making; adding to the wider discourse on textiles, natural fibres and the reduction of poverty, which has been described by Papanek [7], Thackara [18] and more recently by Rao [10]. This paper points out the length and quality of some of these relationships, as some the tanners, artisans and entrepreneurs are hailing from a line of practioners, over three and more generations.

As for a comparison of the leather trade, the conditions found in India and the United Kingdom are different. One finds a much contracted manufacturing industry in the UK. Still, there remains considerable fundamental research and education; also, a concentration of luxury brands in London. In contrary, India is a major manufacturer of leather goods; however, Indian brands are little known in the West.

The theme of co-design will be investigated in the light of the case studies and identifies some contribution to the literature on sustainability. Michael Schrage uses the corresponding concept of "co-creation" and states that "at

the core of collaboration is co-creation: customers aren't just customizing; they're collaborating with vendors to create unique value" [17].

Leather craft comprises the processing of animal skins, ranging from the stabilisation of collagen fibres through tanning, to the design and manufacturing of leather goods, either in a village community, cottage industry or factory context. Our understanding of craft evolves and embraces the notion of prototyping, thus, extends from traditional artisan techniques to digital measuring, netting and cutting, also, the induction and alteration of materials properties.

Sustainable design - that is economical, ecological and social responsibility - have been outlined by Papanek [7], Thackara [18] and Fuad Luke [4]. Appropriate technologies - utilizing the most effective means to address the needs of developing areas - are considered in current research in engineering and service design. For example, Rao [10] presents examples of project-based learning in India, where the stakeholders can draw lessons on promoting sustainable development. The British Council champions this process through the International Young Design Entrepreneur Award by highlighting a number of Indian designer-makers.

In particular, this paper explores the role of design practitioners, students and educators in industry and community collaboration. One of the case studies presented reviews an ongoing undergraduate project with design students in the United Kingdom, which has been taking place in conjunction with the British School of Leather Technology and a footwear manufacturer based in Chennai, India. In response to real needs, UK based students are encouraged in negotiating research across disciplines, shadowing podiatrists within clinical practice, and in creating prototypes of shoe and sandal parts for school children in India. While students learn to develop their own designs into feasible samples, they were also encouraged to apply the relevant design and production methods, with consideration of appropriate technologies suitable for manufacturing in an Indian community context.

2. Methods

This investigation is based on case studies of distinctive communities, that aims to shed light on the history of their relationship, the transfer of knowledge, highlighting design and education in Indian leather craft. It is informed by a survey of the leather trade in India [2]. A network of actors was identified, tentatively mapped and further grouped according to 'transactional' relationships in education, technology and design. In order to develop the research, a network framework was created drawing from literature on design, knowledge management (Krogh, Porter, Markussen) and social science (Latour, Sanders and Simons). The approach is also influenced by the Actor Network Theory (ANT). An actor network approach has become more common in design research, exemplified by Ricci [11], Schneider, Richter, & Petzold [16]. Literature that makes use of ANT in empirical work is for example: Kraal, Popovic, Chamorro-Koc & Blackler [8].

It configures all things of any scale - human or non-human/conscious or non-conscious - as actors that interact and comprise a study network. This theory argues that all actors, in the dynamic and heterogeneous network, have equal weighting and create interconnections and associations. A total of seven entrepreneurs, educators and designers from both India and the UK were interviewed. 'Stakeholder and dutyholder mapping' was used for detailed analysis of the relationships, activities and interactions between the actors. Other methods included shadowing, photographic documentation and literature review. Findings were gathered at visits to trade fairs in the UK, India and Europe, and through conferences and workshop participation. Thus, direct observations from a

number of sources inform the case studies. These were: the Centenary of Leather Education at the University of Northampton 2009, the UK Leather Federation strategy launch at Westminster Palace London 2011, the Chennai International Leather Fair 2012, The TFL leather finishing workshop in Arzignano Italy 2012, Springfair Birmingham 2013 and the Corium Club of Leather Technologist's reunion in Northampton 2013. All these events were attended by stakeholders both from the UK and the Indian Subcontinent. At all events transactional links were observed, some of these leading to student placements, trading of material and machinery, and exchange of knowhow through consultancy.
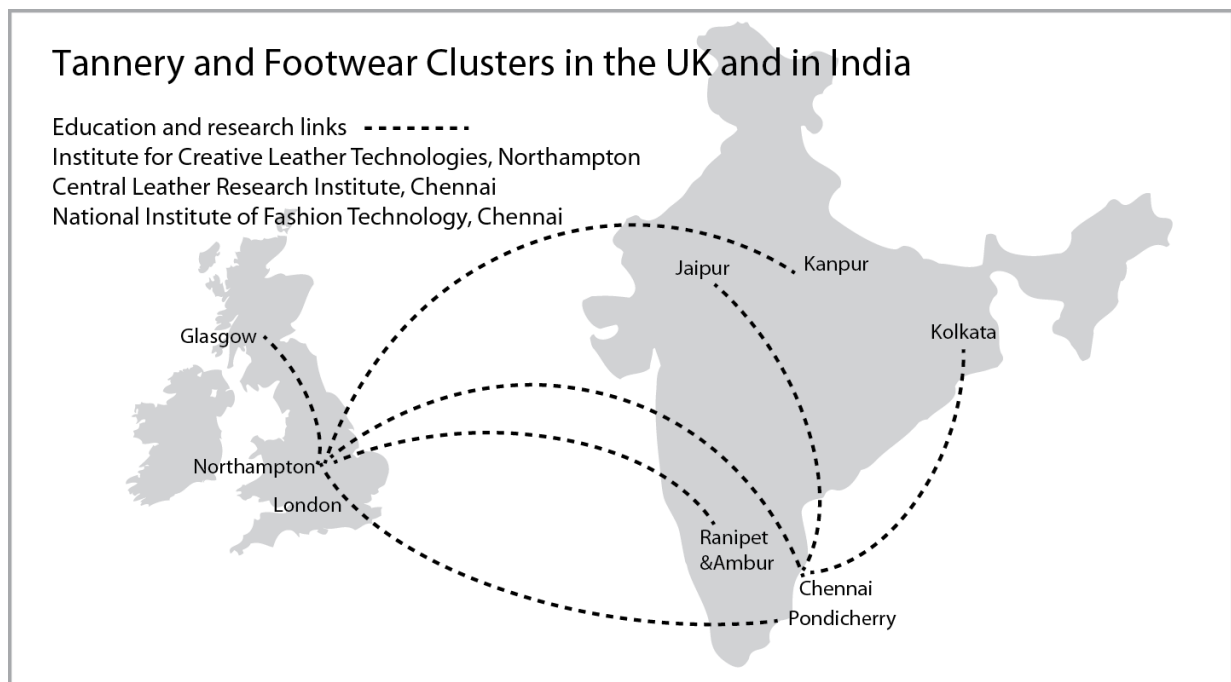

Figure 1: Mapping of clusters, educational and research links

3. Case studies

3.1 Case study 1 – Clusters of leather making and education

The raw material for the leather industry comes from the skins of livestock, a by-product of the meat industry. It is converted into finished leather in a tannery. Like many enterprises described by Porter, Markussen and others, tanneries are likely found in clusters or in industrial districts, benefitting from skilled labour, access to raw material and transport links. Figure 1 shows the main Indian districts working with leather, with enterprises bound in a complex web of competition and cooperation. Competing with Kolkata, Kanpur ascended during the British rule as a major manufacturer for saddles and harnesses; the port city of Chennai exported semi-finished leathers across the British Empire [2]. Ambur, in the North of Chennai is famous for Buffalo calf skins, initially exported, but now coming out as finished leather and as shoes or leather goods. Pondicherry and Ranipet are other tanning centres outside Chennai and so is Vaniyambadi, which is renowned for sheepskin [6].

Today, India is a major global producer of footwear and leather garments, and a key area of development for fashion and product design. Given the size of country and industry, there are numerous institutions that provide leather technology, footwear and accessories education on further and higher degree level. Founded in 1948, the

Central Leather Research Institute (CLRI) is India's main leather research institution and located in Adyar, Chennai. It is also in the immediate vicinity of a branch of the National Institute of Fashion Technology and near to the local tanning district. The Footwear Design and Development Institute (FDDI) is one of the largest and premier institutes in India for fashion and footwear design programs (both leather and non-leather) with over 5000 students across six different campuses. The National Institute of Fashion Technology (NIFT), Central Footwear Training Institute (CFTI) and PEARL Academy with campuses in Delhi and Chennai are at the heart of Fashion in India. These schools seek closer links to European and, in particular, British design colleges, including validated degrees and Master level provision. Both, seminars presented by visiting faculty and trade fairs facilitate face-to-face contact and recruitment of Indian graduates to the UK universities' fashion and design courses [13]. Attending such trade fairs, our informants report a trend, that the prime interest in Western footwear technologies and leather chemistry is being supplemented in that of design and brand development. This paper reports on a refocus away from leather chemistry and footwear manufacturing with the main area of interest is becoming design and brand development.

Above clusters, educational and research links have indicatively been mapped [Figure 1], highlighting the continuous collaboration of British and Indian partners. Since the 1920s, families of tanners from Chennai and Kanpur have been sending their offspring to the leather schools in London (Bermondsey), Leeds and Northampton. Today, footwear and leather research is clustered in the East Midlands region of England with the British Leather Corporation (BLC), SATRA Technology in Kettering and the Institute for Creative Leather Technology, which is part of the University of Northampton. Its British School of Leather Technology has a working tannery on campus and is educating staff for the global leather industry, with graduates coming from a total of 80 countries. Within the fashion department of the university, footwear and fashion accessories provisions evolved, engaged in knowledge transfer in support of the London based fashion industry. Furthermore, the university offers degrees and consultancy in waste and effluent management, supporting the tanning industry towards ecologic sustainability. Some of the leather technology and environmental management training is offered as distance learning provision and conducted by 'flying faculty', which contributes to the economic sustainability of Indian and other communities. As indicated on Figure 2, students from South Asia constitute a substantial contingent at the university, studying towards higher degrees.

Figure 2: Educational and research links, leather technologists from India studying in the UK

3.2 Case study 2 – Breadline shoes for the poor

A recent project with a commercial partner designing footwear for the poor enabled the University of Northampton to expand the scope of engagement with India and equip undergraduate design students with skill

sets to realise appropriate and practical solutions that can alleviate poverty. Students were briefed to create protective footwear for children in India, shown in Figure 3. Project partners were the British School of Leather Technology and a footwear manufacturer based in Chennai, India. For the client, it was important that these shoes would be as widely available as possible, perhaps through use of a waste material, which is commonly available in the kind of locations where children have to walk a long way to school. Colleagues in the university's Waste Management Centre helped students make informed choices by understanding the dimension of textile waste, glues and cements, biodegradation of natural rubber and the implications of recycling car tyres. This learning anticipates that live-cycle assessment methodologies will be part of skill sets for design graduates and parallels developments at other UK institutions. In response to real needs, Product Design students and staff created prototypes of shoe and sandal parts from natural fibres and waste materials. They applied the relevant design and production methods, with consideration of appropriate technologies suitable for manufacturing in an Indian community or 'cottage-industry' context. It is aimed that affordable shoes would be offered to children in India as part of getting them to school regularly; a practical solution that could move people out of poverty, in a sustainable manner. [14]

Having concluded Stage One of the New Product Development methodology, the client offered to develop the shoes into feasible samples, encouraged participants from the University to conduct further trials and user centred research in an Indian village. Staff and two undergraduate students went to Chennai to undertake prototype refinement and user evaluation, identifying user acceptance, though Podiatry specific methodologies, interviews and structured questionnaires.

Through this co-design approach, both partners in the UK and India gained new insights in the resourceful application of leather off-cuts, textile waste and natural fibres, discussing 'appropriate technology' and 'cradle to cradle' approaches. The co-design approach re-aligned the roles of students, researchers and users in the project and the participants realised the benefits derived from an association with multiple partners in the teaching of socially responsible design.
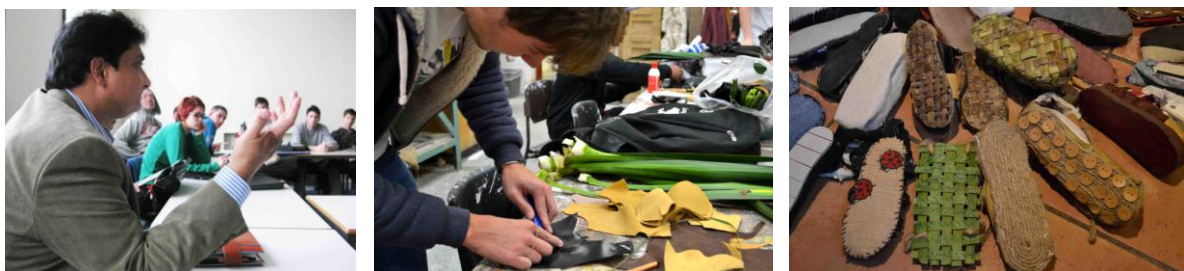

Figure 3: Breadline client briefing, making of shoe uppers and soles

3.3 Case study 3 – Eco-craft collective

Jitendra Jadav is a Jaipur based product designer, co-creating with a community of craftspeople mainly working in leather and trading as 'Eco-craft' [3]. They are artisans from Rajastan involved in the manufacturing of Indian crafts for generations, creating North Indian slippers embellished with embroidery and print; also, 'chappals', a simple type of leather sandal, providing the foot with basic protection. These remain the most typical foot covering today across the subcontinent. The anthropologist Jutta Neubauer-Jain [5] states that the Indian leader Mahatma Gandhi inspired his compatriots to make their own chappals in addition to weaving their own

cloth as a symbol of Indian independence. This was at a time when Indians were trying to end British rule of their land. His efforts worked, and small family-run shoe businesses succeeded in India. During the 1970s, when hand-made Indian chappals became popular in the United States and Europe with young people who rejected mass-produced clothing among other conventions of Western society, these small Indian shops were able to export their chappal production for profit [5]. 'Eco-craft' appears to have evolved from this industry and 'Hidesign' is another example where the craft skills of artisans - in this case from Pondicherry - got transformed. The director and principal designer Dilip Kapur considers [1] this was due to the insight into vegetable tannage properties, branding, detailing and product aesthetics that attract an emerging urban middle class and customers in overseas. He stated [1] "When I started, I had to learn what a bag was; I had no business background and knew nothing about them. I talked to people and learned from them, and it became a more interesting business. Originally, I designed and produced bags. Once I started Hidesign in 1990, I had to conceptualize who I am producing for, why they are buying bags, and how to communicate that to people." As we learn from Dilip Kapur and Jitendra Jadav, networking and co-design are emphasized.

Jitendra is a graduate of the Indian Institute of Crafts and Design in Jaipur, set up by the Government of Rajasthan to develop human resources for the craft sector with focus on sustainable design. This designer works with artisan collectives in an effort to remake traditional objects such as footwear and fashion accessories, and, in doing so, stimulating local economies. He actively seeks out trends and new markets, develops the product lines and applies novel branding to his products. Also, he is in charge of the product photography, designs and maintains the webpage, newsletter, controls and coordinates the output of his various collaborators, be it shoemakers, weavers or metalworkers in brass. Thus, he displays entrepreneurial behaviour - beyond the bounds of business - incorporating invention, innovation, collaboration, and networking. Having discussed Jitendra's collection at the Chennai Leather Fair [Figure 4], the 'Eco-craft' collective offers an interesting comparison with other young Indian design, as shown at the New India Designscape exhibition at Milan's Triennale Design Museum. The curator Simona Romano proposes in a 'Domus' interview and the exhibition catalogue's synopsis [12] that the underlying link of India's varied and rapid evolving scene is a strong link between tradition and innovation. Important is the idea of rediscovering the work of village populations, the target and end-users of the designs, providing these communities with engineering solutions based on concrete needs and motivating small economies.

Figure 4: Jaipur craft collective, trade fair stand and product lines

4. Discussion

Leather, has been be argued, is a natural fibre, providing the raw material to sustain rural communities, and artisans working with it. Correspondingly, speakers at the Natural Fibres Conference in London 2009 such as Ahmed, Condor-Vidal and Sricharussin are exemplifying the role of cops and yields in sustaining rural

communities. Also, the Commonwealth Secretariat in Bangalore examines the various Indian small and medium industries utilising natural fibres by looking at sourcing of raw materials, technology use, product development and design, value chains, quality control and standards, marketing of products. Subsequent reports by the United Nations Industrial Development Organization (UNIDO) consider the economics of leather, fluctuation of raw-hide prices, livestock, leather industry's value chain and its importance for sustainable development. This paper attempted to make the link between leather and sustainable communities, ranging from South Asian farmers and their water buffalos to the leather goods retailed through 'Hidesign's' chain of retail outlets, or the online shop that stocks 'Eco-craft's' laptop bags and sandals. Can we empower communities through 'making' and participating in the leather value chain?

The use of leather in design relevant applications is rising on a global scale, with changed customer perception and market demand driving this process. For example, carmakers realize the wider profit margins by offering leather options, through mass customisation. There is current investigation into distressing of leather products, investigating and disrupting the behaviour of bovine leather, its form and surface, also, distorting traditional processes. Key concept is 'distressing', methods to produce an appearance of age and wear. In distressing, the object's finish is intentionally destroyed or manipulated to look less than perfect.

Through interaction with master saddlers in Kanpur and a footwear cluster in Chennai detailed in the case studies, artefacts can be conceived that feature distressed finish, inherent or induced surface defects such as branding, scars, or microbial attack, usually be caused by South Asia's climate and other conditions to do with the environment. Thus, they challenge perceptions of tactile interface, durability and appearance. Also, manufacturing systems can be considered that emphasise the issues of authenticity, authorship and control - traditionally associated with craftsmanship.

5. Conclusions

This paper aims to investigate partnership models involving designers and recent graduates in co-design, benefitting the community in their societies.

Several scholars, such as Manzini, Margolin, Papanek [7] and Thackara [18] observe social innovations by communities worldwide and identify design as a catalyser, creating visions of possible futures. This study tried to describe a number of case studies within the Indian and United Kingdom (UK) context, analysing sustainable Design and co-design initiatives where designers tackle problems in their environment, and highlighting programmes with grassroots and enterprises. The aim is to map new methodologies for partnership practice relating to social design. Thus, explored were the scope and reach of opportunities in education and also off-campus. The challenge is working with multiple partners ranging from research, community grassroots, users and external agencies, with varying stakeholder intentions.

As exemplified above - in case study two - the Product Design students benefitted greatly by interacting with multiple professional practitioners and through working with real constraints. For the first time, the students faced the issues of socially responsible design, user focus and resourcefulness.

To conclude, there are many ways of working for the needs of developing and emergent countries as discussed by Papanek. With the students, we trialled a meaningful engagement, arguably not long enough or deeply enough

to fully understand local customs, needs and appropriate technologies, but furthered, by some measure, student learning through industry and international associations.

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