

Towards a theory of innovation in handloom weaving in India

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VALORIZATION ADDENDUM

The term ‘valorisation’ has recently been adopted in The Netherlands to describe knowledge utilization or knowledge uptake. NWO-WOTRO, the Netherlands Organisation for Scientific Research explicitly encourages valorisation for all its research projects, and requires researchers to include an addendum on valorisation activities. The intention is to help researchers produce knowledge that is relevant to society, and make it available for and usable by societal actors who may find it valuable. In this section, I will attempt to lay out what the relevance of my research might be, to whom it may be relevant, and how I plan to communicate my findings to those who might be interested in using them.

Handloom weaving is the second most important livelihood in rural India after farming, employing over 4.3 million households. Intervening in handloom technologies and practices thus will directly affect the lives of millions of rural producers. Yet the linear perspective of technological innovation prophesies extinction for vulnerable craft producers such as handloom weavers—either through mechanisation or by museumization. Instead, my research project analyses handloom weaving as a socio-technology, making it possible to show how weaving communities are constantly innovating their technologies, designs, markets and social organization—often without calling it innovation. This demonstration of innovation in handloom contradicts the received image of

handloom as a pre-modern and traditional manual labour that is unsustainable in current societies and that one therefore needs to get rid of. Instead, it offers possibilities for a re-invention of traditional crafts as sustainable technologies for our future.

For over fifteen years, before starting my research work in the University of Maastricht, I worked in an NGO in Andhra Pradesh in India, supporting craft livelihoods. As an engineer intervening in traditional technology, I played a key role in building successful social business models and producer friendly markets for vulnerable craftspeople in South India [www.dacottonhandlooms.in, www.dastkarandhra.org, <http://nextbillion.net/social-capital-markets-09-indian-social-enterprises/>]. One generation of weavers in more than 35 co-operatives across Andhra Pradesh were supported by these efforts, as a result of which they were able to stabilise their lives and livelihoods. In spite of these efforts and many others like it, NGOs were not able to scale these experiments, and almost 2.5 million jobs were lost in the sector in the decade starting 2000, which saw unprecedented growth followed by a deep recession. This seemed to confirm policy understanding that craft production was unsustainable, and that handloom weavers could not innovate for the new markets. The conundrum that those of us working closely with craftspeople faced, was that while the problem of unsustainability of some weavers and despair of craftspeople was real, it was equally true

that over half of them proved resilient to market changes and even thrived. Yet this resilience was not acknowledged or supported, nor did their innovative capability carry any credibility with policy makers.

I had three clear goals when I started my PhD project in 2010 in Maastricht University in the discipline of Science Technology and Society Studies. First, to reflect on over fifteen years of training and practice of ameliorating vulnerability of craftspeople; second to explicate the skills, knowledge and innovation of resilient craftspeople in a language that was recognisable to policy makers, society at large, and most importantly to the craftspeople themselves; and finally to explore vocabularies, spaces and conceptual frameworks where such conversations and exchanges could take place to the mutual benefit of all the stakeholders, particularly to vulnerable craftspeople. My research project therefore engaged with four questions from my larger engagement in working for vulnerable craftspeople. First, reflecting on my own practice, how could we ameliorate vulnerability in the livelihoods of traditional craftspeople? A related question was, how did designers [and other mediators] intervene to bring about social change in the lives of craftspeople? Next, I studied the innovative practices of weavers with whom I had closely worked as a social worker. I asked how handloom weaving technology survived and even thrived in markets, in seeming contrast to 200 hundred years of state-supported industrialisation. Using the tools and heuristics of my research training, I then expanded the research question to a more conceptual one about the relevance of ‘craft’ as embodied knowledge, whether in the scientific laboratory or in the traditional crafts. Not whether craft could survive without innovation, but whether there could be innovation without craft?

My answers add to the understanding of how to intervene to ameliorate vulnerability in craftspeople’s livelihoods. Second, they offer insights regarding outcomes of such interventions, and how to direct such outcomes towards social and technological change that sustains both craftspeople

and contemporary societies. Low-tech and high-tech technologies can become interoperable to sustain deep craft and knowledge of the material world that is critical to future sustainability of our energy-stressed planet. Through explicating the nature of innovation in handloom weaving, I offer insights to the craftspeople themselves, holding up to them an STS mirror — an analytical representation of their work and innovation culture — in order that they see themselves as experts, technologists, artists and innovators. An important insight here is regarding the acquisition and mobilising of embodied craft knowledge, which leads to innovation. Finally, the value of this research to knowledge building itself lies in understanding interaction. It reconnects what became disconnected: the mind and body, science and art, theory and practice, village and city, production and market, means and ends, past and the future, the old and the new, change and stability — thus putting craft back into the toolkit of contemporary knowledge building practices.

The theoretical framing of my research project was a direct result of my deep immersion in the field of craft, and my understanding of the underlying vulnerabilities as well as strengths of craftspeople. My close proximity to craftspeople meant that both actors from the field as well as academia were able to participate in the framing of the research and contributed to constructing its relevance. These actors included the weavers, artists, technologists, designers, NGO activists, as well as my supervisors and academic peers who engaged with my work and helped me to foreground one set of questions rather than others. These engagements were of many forms: interviews, presentations, seminars, concert halls, coffee shop encounters and research meetings, across India and The Netherlands. Such conversations forced me to pay attention to that which is generally unspoken and not perceived to be in the public domain, for example, the culture of innovation in tradition that attributes the creative moment to divine grace, or to the blessings of the teacher; modesty is perceived as a necessary condition for creativity; and in this

instance, it is faith that gives the artisan confidence to innovate.

I can now with reasonable confidence assert the usefulness of the research to three different groups, each pursuing a different goal. First, the different social groups — CSOs, designers, policy makers, marketing agencies in the craft ensembles — whose goal is to ameliorate vulnerability in the livelihoods of less fortunate craftspeople. Second, the weavers, artisans or craftspeople themselves, in order to advance their journey to sustainability in the contemporary world. Finally, the small and specialist group of scholars who are engaged in efforts to democratize knowledge itself. Being part of the life worlds of all three groups has made it possible for me to make conceptual connections that could be integrative of all three goals.

In summary, this research project offers a response to the assumption that traditional craft knowledge should be replaced by modern technological innovation, suggesting that what merits discussion is whether technological innovation can survive without craft knowledge. This resonates with historical accounts of innovation trajectories in the West, and within science. Given the low stature of embodied craft within discourses of knowledge, and the deficit of vocabulary to explicate tacit skills whether in the laboratory or village, there is a real danger that the contribution of embodied skills and iterative knowledge-building practices to innovation is missed. By making this contribution explicit, this research shows how political goals of democratization of knowledge can be achieved.

Yet if my research has to be made available to the different actors, in order to make a difference in the real world, it is my knowledge of their networks and vocabularies that I have to engage. Different activities are required to reach the different groups that I have detailed above. Since most of the handloom weavers are not English speaking, translation of key findings of the research into at least Telugu and into non-academic accounts is important for reaching out

to them. At various points in the research process, I have conducted and participated in workshops with craftspeople and their representatives, and presented the findings to them, using their questions and concerns to shape the direction of the research so as to be useful to them.

Publishing extracts from the dissertation to journals that explicitly target Indian policy makers and interventionists is another important activity I have taken up. I have already published a first co-authored article titled “Mobilizing discourses: Handloom as sustainable socio-technology” in the *Economic and Political Weekly* in 2012, one of India’s leading academic journals for social sciences. A second article “Weaving trajectories of hope: from Vulnerability to Sustainability” based on the chapter on vulnerability in weaver livelihoods is due for publication in the *Jindal Journal of Public Policy* this month. I have contributed as co-author to a chapter titled “STS for Development”, in the forthcoming *Handbook of Science and Technology Studies*, 4th edition. In order to reach a wider academic audience, a fourth co-authored article “Innovation in Indian Handloom weaving” based on the chapter on innovation has been submitted and provisionally accepted by *Technology and Culture*, the journal of the Society for the History of Technology.

Venturing into new fields of practice — from engineer to social worker, from technologist to grass roots worker, from social work to social enterprise and market building, from NGO intervention to research — did imply that I was being socialized into different epistemic communities upholding those practices. In a general sense I began to understand that while these different communities of practice had clear areas where they would transact with each other, the boundaries between the areas were surprisingly obdurate to knowledge exchange. Yet, my research showed that each group has knowledge that is very important to the other’s sustainability, even survival. Assuming that this obduracy did not arise from mal-intent, I began to think of bringing together the different social

groups and stakeholders whose practices I had analyzed and understood as part of my research. This activity was absolutely necessary to the goal of my research project — to expand the idea of handloom as sustainable and innovative socio-technology, and of craft as knowledge.

Thus, in January 2016, I co-organised a seminar on ‘Craft and Innovation’ in Chennai where stakeholders across the ensemble — NGO workers, artists, artisans and scholars from US and Europe and India — met to discuss the discourse of craft as knowledge. The approach of the seminar was to be comparative across fields of expertise. Sponsored by the Society of History of Technology, University of Maastricht and Kalakshetra (the famous Dance and Music Academy in Chennai), the initial note proposed to SHOT laid out the framework to the participants. “The first comparative perspective is across time: comparing early medieval craft and technics with current craft and technology. The second comparative perspective is cross-cultural: comparing artisans/craft practitioners in medieval and early modern Europe with Indian handloom weaving and with Indian Karnatik musicians. These comparisons were challenging and have to go beyond existing conceptual frameworks. To make this work, we will (1) engage in additional activities, beyond scholarly discussion; (2) invite a broad range of participants—from history of technology and STS scholarship, to engineers, artisans and craft practitioners, designers, and musicians; (3) use more time (i.e. five days) than in a regular scholarly workshop and thus create more space for joint reflection and interactions.” The program included a dyeing workshop in the use of traditional practices in natural colours, a

master-class in Karnatik music and an introduction to the handloom-weaving ensemble, through a field trip to Kanchipuram, a weaving village and temple town, two hours from Chennai, as an introduction to the context of craft and art in India. The main seminar on ‘Craft and Innovation’ had panels that stimulated conversations between craftspeople, academics and handloom experts across different locations. The experiment was productive, leading to many discussions that were at once relevant to livelihoods of vulnerable craftspeople as well as to the agenda of furthering scientific knowledge and agendas of innovation. Discussions are ongoing on how this network and its collaborative agendas can be supported in the future. In time, I hope these conversations will give lead to new concepts and possibilities for the future of traditional craft and craftspeople in India and elsewhere.

In parallel, I was able to contribute to a nascent network of scholars working on innovation across cultures, of both non-western and western cultures of technology. A series of panels is being co-organized by me along with Wiebe Bijker and Lars Heide in the 2016 meeting of the Society of History of Technology in Singapore where scholars including myself will explore ways to take up more work in this line. The Neubauer fellowship from the Chicago University (in May 2016) affords a next step in the journey: to work with committed scholars who are engaged with explicating the value of embodied knowledge and craft modes of production, particularly when such crafts show promise of being re-invented as sustainable technology for an energy stressed future.