Mobilising Discourses
Handloom as Sustainable Socio-Technology

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Handloom is much more sustainable than common views and standard government policies recognise. Instead of a linear migration out of weaving into other forms of livelihood, weaving communities show a more strategic mobility – flexibly departing from and again returning to weaving, depending on circumstances. This mobility can be traced in weavers’ discourses about their vulnerabilities and aspirations. This paper shows that the standard image of weaving as premodern, unproductive and unsustainable is produced by being trapped in a progress discourse, a poverty discourse, and a market discourse. An alternative view of handloom weaving as a socio-technology is proposed: understanding handloom as an ensemble of knowledge, skills, technology and social relations explains the continued sustainability of handloom, and also offers clues for socio-technical innovation and an alleviation of vulnerabilities.

Introduction
In October 2010 Dastkar Andhra, a non-governmental organisation (ngo) that supports weaver livelihoods, conducted a meeting in Hyderabad with 25 of its partner cooperatives to discuss future prospects in handloom. The group evaluated the progress of the last 10 years, particularly the successful collaboration with women’s self-help groups to access credit. Even though the previously loss-making cooperatives were now profitable, the discussion on growth in handloom rang with despair and gloom. This was particularly hard to understand coming from the successful cooperative managers who had stable livelihoods within weaving. This dilemma constituted a crossroad for the handloom livelihood support organisation: when taking the perspective seriously, Dastkar Andhra seemed compelled to drop its agenda of growth and investment, and instead see its mission as welfare and as providing support for a dying industry.

Turning the puzzle on its head, one year later Dastkar Andhra had a meeting with 50 weaver couples in its thriving retail outlet, this time about its own agenda as a handloom-marketing organisation. If handloom unsustainability was a fact, why endeavour to support it at all? The response was slow in coming, but unequivocal: regardless of the rhetoric of unsustainability, for those weavers who Dastkar Andhra worked with, handloom had provided a sustainable livelihood measured in terms of both income and stability. This was evidenced by the success of giving their children a good education, often as engineers, accountants or teachers.

Increasingly weavers do indeed move out of weaving and from the villages into cities. The Government of India links migration to declining number of handloom weavers. “Due to migration of workers to urban areas, the number of handloom weavers has declined by about 33% to 43.3 lakh (4.3 million) during the last 15 years”, says a report of the third National Handloom Census 2009-10. But can the evidence of the declining number of weavers be unquestioningly taken as evidence of the unsustainability of handloom weaving? What would it mean to accept that an industry that supports 4.3 million rural poor people has no future? Is it left to organisations like Dastkar Andhra to reduce the collateral damage that the closing down of such a huge enterprise would entail? On the other hand, how can a livelihood that provides for university education for its children be called unsustainable? From this contradiction we arrive at the main question that this paper seeks to address: under what conditions are vulnerable livelihoods of
traditional communities such as handloom weavers sustainable, and when do they become unsustainable?

We report on the specific empirical case of vulnerable livelihoods in handloom weaving in the Devangula and Padmasaali communities of Andhra Pradesh. We construct the study as a collaboration across two locations: one within theory, and the other in interventionist NGO practices. This allows for the centring of the issue squarely in the weavers’ narratives within the lived reality of a livelihood practice. The issue presents itself in two different questions: first, within the theoretical discourse, as “In what framings does handloom become an unsustainable technology?” and second, as a question from a development policy perspective that seeks to support weaver livelihoods, “under what circumstances can handloom become a sustainable livelihood for weavers?”

Our addressing these two questions is supported by answering a third one. What is the character of the weaver’s knowledge and skill, and what is the character of weaving technology? The tale of handloom explicates the weavers’ expertise; and the telling of this tale, we hope, will question foundational assumptions regarding the weavers’ knowledge, their skills, the technologies employed, and the social fabric in which they work. This third question, then, will be answered by positing handloom weaving as a socio-technology.

We will, through a close study of handloom practices, challenge the static notion of handloom as traditional and outdated. By studying handloom as technology embedded in societies on the move, we will re-examine the polarisations within policy between the different interpretations of technology – modern versus traditional or technical versus social.

Such a broadening of the concept of technology draws on research in the field of science, technology and society studies (STS). In line with current developments in redefining expertise ( Bijker 2001; Collins and Evans 2007) and in addition to broadening the concept of technology, we will reassess the knowledge and expertise of the weaver. For this paper, handloom is thus examined by focusing on how the material practices of the weaver effect his (and sometimes her) social and technical sustainability; we do not take financial and managerial parameters as our starting point. In order to access these weaver’s practices, we start from the narratives of the weaver.

Handloom and Textile Production

From cotton to finished product, the production of cotton fabric in India has been finely differentiated and dispersed. From ginning the cotton, baling it for transport, spinning it into different counts and thicknesses, winding as weft, warping, sizing for ease of weaving the finest of yarns, dyeing in colours that only India could produce, and finally to weaving for local and export markets, every weaving village had its own identity and product. But the world of textile production started shifting from artisanal mode to industrialisation more than a century ago (Roy 1993; Narayanan 2008). Today cotton prices are linked to international trade policies and agreements (D’Souza 2004). But textile production itself eludes classification, as technologies from different ages survive side-by-side in India.

Khadi production with its echoes of Gandhian swadesi, is least mechanised, the yarn is hand-spun, hand-dyed and hand-woven by weavers in their homes. Handloom follows closely: the handloom weaver uses yarn spun by the mills, but performs all further functions by hand, and the household continues as the unit of production. The power looms which produce the lion’s share of the country’s textiles are decentralised clusters of looms powered by electricity, in small sheds with operators running at least four looms. The hosiery sector is organised similarly to the power loom sector. The mill sector is made up of large integrated factories, with large-scale machinery and highest productivity and interestingly have an even smaller share of the production than handlooms. In the technology hierarchy, khadi seems the least advanced, and mill the most (Table 1).

Interestingly though, because of the coexistence of these different technologies a cross-pollination of technologies happens. Still, the stress of fast spinning machines yet traditional cotton varieties still survive in particular regions. Dyeing is the most varied technology, ranging from hand dyeing using traditional natural dyes, to dyeing in large-scale chemical dye lots using pressurised cabinets that ensure uniformity of colour. Natural dyeing, a traditional technology from the khadi age has been recast as modern environmental friendly technology and is used in large integrated mills, as demand grows from emerging markets for sustainable product. Handloom weavers have taken up non-toxic reactive dye technologies from the mill sector, to meet new fastness standards that the large middle markets demand.

Markets are differentiated across local and urban consumers and serviced by products from all the sectors. Local markets are more price sensitive, while urban retail needs standardised products. In the speciality markets, handlooms fight for survival against cheaper imitations made by power looms, counting on discerning customers to tell the difference. Centralised demand sets standards that are more easily met by the integrated mills, even as consumers clamour for more sustainable produce or boutique designs that privilege artisanal production.

Handloom provides a little more than 10% of textile production in India, but it is the second largest rural employer after agriculture. The 4.3 million families that continue to produce cloth using handloom technology exist side-by-side with the modern textile industry. At the top of the pyramid are weavers who have very specialised and complex weaving skills and long-standing market relationships. They are fewer in number comparatively and they are seen less as producers and more as artists. They leverage the cultural identity of the product in order to straddle the movement into modern markets, and have been

| Table 1: Production of Cloth in Different Sectors in Million Sq metres in 2010-11 |
|----------------------------------|-----------------|-----------------|
| Textile Production Sector        | Production      | (Million m² Cloth) |
| Mill                             | 11,30           | 3%               |
| Decentralised power loom         | 22,067          | 62%              |
| Decentralised hosiery            | 8,362           | 23%              |
| Handloom                        | 3,770           | 11%              |
| Khadi, others                    | 476             | 1%               |


Mostly yarn is produced in mills, and wound on cones for faster dispensation to very high speed weaving looms, but some cotton is still hand spun and hanked. Long staple cottons are increasingly grown for their capacity to take the stress of fast spinning machines yet traditional cotton varieties still survive in particular regions. Dyeing is the most varied technology, ranging from hand dyeing using traditional natural dyes, to dyeing in large-scale chemical dye lots using pressurised cabinets that ensure uniformity of colour. Natural dyeing, a traditional technology from the khadi age has been recast as modern environmental friendly technology and is used in large integrated mills, as demand grows from emerging markets for sustainable product. Handloom weavers have taken up non-toxic reactive dye technologies from the mill sector, to meet new fastness standards that the large middle markets demand.

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supported by patrons of the handloom as art form. At the next level are a large number of weavers who are able to sustain themselves with weaving, but are vulnerable to falling to the bottom. The numbers of weavers in the bottom segment fluctuate depending on the circumstances inside and outside weaving. These weavers are tipped on the edge of survival; earning barely enough to meet their basic food and shelter needs, and prone to moving out of weaving to the city when there is any opportunity. Weavers do move up and down between the layers of the pyramid reskilling themselves based on market demand, though in this paper we do not discuss this mobility.

In Andhra Pradesh, like elsewhere in India, weaving is caste-based at its core, the hereditary occupation of particular rural communities who have been engaged in the *vritti* (livelihood) for as long as they can remember. Individuals from other castes do come into weaving during periods of higher demand from export markets (Brennig 1986). From cotton to fabric, the stages in production are finely differentiated and different kinds of labour are engaged in the different stages (Roy 2002).

Over the last 50 years, competition from mechanised power loom and mill-made fabric diminished the presence of handloom fabric in different markets. Post-Independence, in response to the distress of handloom weavers, the Indian government set up protectionist support policies and systems for this industry by supporting weaving cooperatives at the village level, and marketing organisations at the state level. But by the 1990s the government-run marketing organisations were mired in debt and had lost credibility in the marketplace. This crisis was attributed to the low productivity of outdated handloom technology and inefficient functioning of the cooperatives.

The traditional trader in the village was the master weaver entrepreneur; usually from the same caste as the weaver, he invested capital in the value chain and conveyed market information to the weaver. The marketing system was more robust here, but less equitable to the weaver in case of market failure. Crises caused by increases in the prices of yarn resulted in waves of migrations, out of weaving and out of the village. In the last 15 years alone, weavers in the mid- and lower-income group report a 33% drop in families engaged in weaving. Still, in India the industry has production of 3,370 million square metres, a little more than 10% of total textile production; selling in dispersed market segments as an unbranded product.

The classical problem definition of handloom within state, development and market discourses can thus be summarised by one statement: handloom is unsustainable because it has low productivity compared to the mechanised looms, and therefore is not competitive in the marketplace. Pitted against mechanised production, the loom is not productive enough, the weaver is not efficient enough, the colours he or she uses are not fashionable or standard enough, and the handloom product is not profitable enough on returns to capital.

**Conceptualising Mobility: Taking Weaver Narratives Seriously**

Each succeeding national handloom census shows the number of weavers in villages as a reducing statistic. Coupled with reports from the media about weaver distress, received wisdom describes this migration as a linear exodus out of weaving. When plotted over time, this linear graph is taken by the state as unequivocal evidence that handloom is chronically unsustainable as a livelihood for weavers. The perspective of handloom livelihoods as unsustainable then becomes the basis for policymaking. We will argue that rather than a linear and continuous migration, a more flexible mobility process of movements to-and-fro, inwards and outwards, is taking place.

The moment of unsustainable is supposedly never so clear as when the weaver stops weaving and moves out of the village. It seems only logical to view the movement of large numbers of people out of the village as an indication of unsustainability of handloom livelihoods within the village. On the other hand, the policy view of weaver migration with its embedded assumption of unsustainability adds nothing to the understanding of why some weavers stay back and continue to weave while others leave. Mindful of the idea that migration from village to the city or from traditional to modern livelihoods does not in itself offer a way out of poverty, we focus instead on the act of moving, or mobility. In order to do this, we have studied material practices and narratives of mobility of individual weavers. Mobility, in this paper, then includes movements in and out of weaving as livelihood, rural-urban mobility, and it broadens into (possibly intergenerational) movements into new identities.

**Non-Linear Movement: Mobility, Not Migration**

Labour migration is not a new phenomenon, and has been the focus of much attention from scholars. In his review of migration literature of 1999, De Haan (1999) finds that focusing on one unit of analysis – individual, household or institution – tends to portray either a positive or negative impact of migration. Sociological and anthropological studies such as the structuration theory and gender analyses on the other hand allow for more complex understanding of migration. These suggest that migration should be seen as the norm rather than the rule, as an integral part of societies rather than a sign of rupture (Ramaswamy 1985). On relating poverty and migration De Haan says that labour migration takes many forms, of which the classic rural-urban transition is only one: movement of entire households is only one of them, and the (usually) more common form is the move of one member of the household who retains links with her or his origins, migrating for varying (and often a *priori* unknown) periods of time (De Haan 2011: 6).

Regarding migration patterns in India he concludes that “while migration is critical in many households’ livelihoods, it does not by itself produce structural change” (ibid: 23).

For caste-based modes of production such as handloom weaving, Roy (1997) puts forward the notion of community as identity as well as organisation. Discourses that construct the handloom community as unsustainable do have a negative impact on the identity of the weaver. The narratives of weavers plainly show practices of self-production of identity that resist this interpretation (Hall 1996). These practices are visible within weaving, when the weaver speaks of himself or herself...
as technologist, innovator, or designer. We also see mobility between the outdated caste-based community identities of the handloom weaver, to the upwardly mobile secular neo-liberal subject. Aspirations for a modern life and identity can drive migration. Geert De Neve's work on the garment industry in Tiruppur focuses on migration from rural areas into urban industrial settings. Relating migrant workers’ desire for social mobility and modernity, he argues that prospects of mobility and migration to the town and better opportunity can in themselves be experienced as what modernity stands for. Migrants, in turn, experience modernity as aspirations of social mobility and conflict of identity. Commitment to a livelihood or place depends on the concrete returns from the livelihood they are engaged in, and such returns would decide whether workers feel empowered by modernity or return with feelings of loss and despair to the village (De Neve 2003).

Population movements are not simple economic reactions to push and pull, but embedded in local customs and ideologies (De Haan 1999, 2011). Boodidi Appa Rao illustrates this clearly in his interview: in his time weavers did not leave home and hearth, as it was seen as naamosikaram (below the dignity of the weaver). Not so today, when people go where their needs for livelihoods take them, and it is acceptable to the community.

The narratives of weavers' mobility make visible a to and fro movement out of and back into weaving. A non-linear picture of mobility emerges, to complete the conceptual shift from migration to mobility.

**Mobility in Life Cycle, Livelihood and Identity**

From the accounts of the weavers, we drew three general sites of mobility across life cycle, livelihood and identity. Change that came with natural transitions in weavers' life cycle could cause a weaver to move. Changes in external livelihood conditions could also cause temporary mobility within groups of weavers, in order to manage the instability in supply and demand. Third, a quest for a different identity could trigger mobility in younger weavers who resist the caste-based community identity.

By any account, handloom weaving to be sustainable for the weaver, had to fulfil the family's basic needs. These needs were simply enumerated by weavers, both other than the obvious food, shelter, and clothing; the list included the children's education (boys and girls) some for the women of the family, capability to provide help or some auxiliary work for older family members to live with self-respect. Social obligations had to be fulfilled, and a little set aside for crisis, especially in health; there had to be some annual surplus for religious rituals, or the odd pilgrimage. Over time, there had to be enough saved for their own old age. When expenditure for these needs could not be met through the income from weaving, it was a sign of unsustainability, and could trigger mobility.

Points of transition in the life cycle of the weaver, which could cause mobility were clearly spelled out: a pregnant wife, small children, the health problem of an ageing father that became chronic, sons of university-going and daughters of marriageable ages. But these were inherent to the life cycle of the weaver, and had to be faced as being inevitable in lean times and indeed bearable with some support and understanding from the community.

An important measure for external shock that affected livelihood in bad times is karuvu, referring to conditions of drought when not just weaving but most occupations in the village did not help to make ends meet. The weaver experienced a push towards what previously was perceived as a life and livelihood of less social status, and income. During this time, weavers left in waves, to find opportunity outside weaving, and the village. This type of mobility was also more apt to be found in large weaving centres, where crises in yarn prices or demand hit weavers’ wage uniformly, and they responded as a group. This was usually accompanied by reskilling in a different industry, such as construction work. This mobility seemed to mostly be dictated by economic concerns of livelihood.

Weavers also stopped weaving because they perceived it as being static. Some young weavers complained of feeling stunted within it, as they saw no opportunity to grow. More promising futures could only be assured through leaving behind the old identity, and entering the contemporary world without this baggage, preferably through education.

**Response to Vulnerability: Acute, Chronic and Systemic**

We come to the story of Maanem Vishwanath, a weaver from Ponduru, who does not weave anymore. The interview with him was in the front veranda of a reasonably sized village home. A group of women were sitting on the little raised cement step in front of the house. Vishwanath was curious about why we were there, and we explained that we had come to study why weaving became unsustainable for him, and for many weavers like him. This was not his home, he did not have one; we interviewed him in the cooperative manager’s house. Vishwanath’s wife was sitting with the group of women outside, but she never made herself known.

The pain and wisdom that accompanied his story made it difficult to miss the acute vulnerability, of ageing in a profession and moving to the city in search of unskilled work.

Look at my hands, they are smooth, they are ground to this smoothness by the threads of the yarn that we run them over, time and again, these hands are not made for manual labour, but I couldn’t make both ends meet, I had to leave.

His voice fails when he talks of his daughters, for whom he could not afford marriages on his weaver's income. He does not elaborate on time spent in the city looking for work, saying that there is no self-respect in that kind of work: “when I could not bring myself to wash bathrooms anymore, I decided to move back to do the same work (manual labour) here (in the village)”. He is grateful for the one good meal provided for his wife in the hotel where she now works, a statement that reveals volumes about his sense of inadequacy for all the times his wife went hungry, in the city. Time and again, the weavers’ stories of mobility are accompanied by clear experiences of acute vulnerability, even when successfully bypassed but more so in the face of failure.

Such acute vulnerability hits the weaver at distinct periods, but then may also be overcome if the household has some
reserve. Individual weavers who experience loss of income together with a loss of face within the community lose social support. The only way then to seek refuge from social censure is the anonymity of the city. The weaver with his four daughters who needed to find the money to marry them off or the weaver indebted to the master weaver – these lose hope and succumb first. We see that this vulnerability can be acute and experienced as isolation by the individual from the community –- mobility may then provide a response of survival and overcoming this acute vulnerability.

There can also be a chronic vulnerability, of being in a livelihood that has to respond continuously to sharp external shocks such as sudden increase in cotton yarn prices. When there are no institutions that absorb these shocks, the weavers’ community is without protection to these changes. This constant uncertainty causes a fatigue that the community experiences over long periods – chronic vulnerability. In some cases supporting institutions are able to absorb some of these shocks and can act as buffers. For instance, a capable president who managed the external linkages that are needed to support the marketing work of his cooperative thus supported the Ampolu weavers’ cooperative with its 100 members. Weavers here were treated with respect, and youngsters from other castes were invited into this cooperative, breaking caste barriers. Vulnerable weavers were given shelter, and light work, so that they could spend their old age with self-respect. Before this president took over the running of the society, there was a huge exodus of weavers to the city of Hyderabad. But with the support of the new president, weavers came back to work in Ampolu. Venkataramana, the young weaver who is weaver by profession and not caste, says “there are always difficulties in life, but it is now two years (since I started weaving), and I don’t see any difficulties because of coming into weaving”.

Satyanarayana, a weaver who had moved from the village of Ampolu to the city in search of work, used the network of weavers who had already moved to find his way to the city, “I think there were 50-60 people from here, that’s why that street used to be called Ampolu gully [street]. If we got onto an auto in the Hyderabad railway station [when we got off the train from Ampolu] and asked for Ampolu gully, they took us there. The Ampolu here was put there too”, he says amid amusement. When he heard through the same network that there was work in weaving again in Ampolu, he came back to the village to work and live.

There is a third more systemic vulnerability that is experienced by weavers when they feel diminished by the discourse of productivity and progress that labels their technology as obsolete. Weavers feel vulnerable in a society that refuses to offer a more promising future to handloom. This becomes endemic and difficult to root out, regardless of occasional success in the marketplace. It is this systemic vulnerability that we are trying to overcome – in the last part of this article – by depicting the handloom weaver as a highly skilled technologist with sophisticated knowledge, and by conceptualising handloom as a socio-technology that can be innovated.

Downward Mobility and Vulnerability
Movement between agrarian socio-economic classes, educational classes, productivity of land, and access to transformative public policy have been used to define upward or downward trajectories of mobility in farming households (Athreya Boklin et al 1986; Kumar, Heath et al 2002; Djurfeldt, Athreya et al 2008). There is little data or analysis available on where weavers who enter the informal economy end up; nor on classes and categories of weavers and artisan labour that are particularly vulnerable to downward mobility. Geert De Neve’s work (2005) evidences the scope of upward mobility in the informal sector of the economy. Farm workers, for example, have found access to the textile industry. But this is not a uniform picture: there are synchronous instances of downward mobility, particularly amongst handloom weavers. In their case, Jan Breman (2005) suggests that becoming loomless and moving to the bottom of the power loom labour hierarchy, or into the informal urban economy could be the first step along the slippery slope to downward mobility for vulnerable weavers. Breman (1996) questions whether rural migrants are absorbed into the informal economy and move upwards into the formal sector, as received wisdom would have us believe; he argues that large contingents of landless labour “are forced to remain on the march between town and countryside as well as between different economic sectors and various employment modalities” (Breman 1996, 2003: 4156), thus exhibiting downward mobility. This dark picture of perpetual mobility spiralling downward could be conceptualised as an everyday state of vulnerability, vulnerability as normalcy for the people who experience it.

We can now list some other conditions of vulnerability that may result in a trajectory of downward mobility. Asiri Naidu, a young weaver who quit weaving, plies an autorickshaw in the city of Visakhapatnam. His early struggles are now behind him, but contain stories of young weavers who moved to the city and through working in the liquor industry became victims to alcohol abuse. Maanem Vishwanath clearly identifies the vulnerability of ageing within weaving.

Generally, weavers transform themselves from skilled artisans into manual labour when they move to the city into the informal economy. But under certain conditions of vulnerability they are forced into work that is “morally unsafe” such as working in the liquor industry, “lowly” such as cleaning of bathrooms, or outright “hazardous to health” in the chemical industry. Moving out of weaving to such livelihoods almost inevitably results in downward mobility even if in some cases, income increases.

Mobility: Opportunities and Threats
For handloom weavers, mobility constitutes both opportunity and threat. For individuals who move to the cities out of acute poverty for survival abandoning home and loom, mobility in itself becomes the opportunity (Gardner and Osella 2003). Mobility thus is not always a symptom of chronic unsustainability of handloom, but it can be a response to acute vulnerability because of temporary threats in the world of weaving.
or even a reaction to opportunities in the outside world without any vulnerability in the weaver’s current situation. Sometimes this mobility actually strengthens livelihoods and can be “a strategy for enduring subsistence, surviving famine, improving economic livelihoods and in some cases resisting efforts to control weavers’ labour” (Haynes and Roy 1999: 36). Resisting traditional notions of community that would keep the next generations weaving, children of weavers may, for example, achieve mobility in identity through education into non-hereditary occupations (Graham 2002).

However mobility in itself brings its own vulnerability, especially when rural artisans are transformed into migrant labour working for the urban informal sector (Breman 2001).

Across Life Cycle, Livelihood and Identity

From the narratives of practising weavers, it becomes possible to describe shifts in life cycles, livelihoods and identity that mobility is a response to. These shifts simultaneously present moments of opportunity and threat for the handloom weaver: a resilient weaver will be able to ride the tide of opportunity, but one less resilient may succumb to the threat and spiral downward.

Boodidi Apparao, a 45-year old weaver of Ponduru, is an example of a weaver for whom mobility offered opportunity. He was able find work in the nearby stone quarry without leaving the village when he needed extra income, while his wife continued on the loom and complemented the income of his household. This gave his sons the opportunity to continue in school without disrupting their education. But a life away from home was not easy, and once his financial need was past, he came back to the village. Today he continues to weave with his wife, refusing to become dependant on his now grown up children and move into the city with them.

In Chirala, when the power loom started imitating the staple handloom jacquard sari for a lower price, the wage fell, causing almost thousand weavers to look for additional work in the nearby city as construction labour, leaving the loom to their wives. Gopi, an innovative weaver in Chirala, says that this has happened often enough in the past, and that someone would come up with a new design, which would create demand and provide work again. Senior weaver Gadde Veeraraghavulu elaborates on this to-and-fro movement: he says there are two boys on his street who have come back to weaving, both have masters degrees, one even in pharmacology, but could not find jobs. They have families that have to be supported, and while waiting for better jobs they weave. “At least now, their families can eat”, he says. In some cases an out-of-work child will come back from the city and weave for a while, to add to the family’s income while he waits for a better opportunity.

This kind of mobility becomes an opportunity when the handloom industry goes through a bad phase, in raw material prices or in the market, which squeezes out the wage and pushes large numbers of weavers in a wave out of weaving as primary livelihood. Weavers travel to nearby small towns not too far from home, into gold-smithy, jute mills, and as textile workers in large mills. Here they use some of the skills acquired through weaving, but in a different industry. In many of these cases, weaving continues in the home as a secondary income for the family, run by the wife or the father, leaving open the option of coming back when weaving stabilises.

In contrast to weavers who do not see a future for handloom, Gopi in Chirala sees himself as a designer and technologist, confident in his livelihood with a wife and colleague who is a better weaver than himself. He proudly identifies himself as belonging to a caste that “since time immemorial has clothed man who was before that a savage wearing leaves and bark”. Now that he has established himself in weaving, he has become a spokesperson for the less fortunate in the village, and this gives him status in the community. Adopting new technologies, for instance in dyeing or in designing, allows for a re-invention of the identity of the weaver as progressive: “don’t try to teach me what my grandfather used to weave”, scoffed one young jacquard weaver to a trainer in a government programme for reviving traditional techniques.

But when weavers are constantly confronted with the rhetoric of (lack of) productivity, which portrays them as old fashioned, caste-based relics of culture, they feel compelled to discard their knowledge as unproductive. They then often start to aspire to a livelihood in the city, in search of a more legitimate place in the contemporary world. More promising futures can only be assured through leaving behind the old identity and entering the contemporary world without that baggage.

Mobility from the identity of caste-based old-fashioned handloom weaver to educated secular contemporary citizen is usually intergenerational, and a general trend rather than individual choice. University-educated children of weavers who are not engaged in weaving still speak of weaving with respect, unlike their contemporaries engaged in weaving; but they do not identify themselves as part of the weaving community. There is a dual incentive to invest in university education, for weavers. On the one hand, it seems to keep intact the identity of the weaver as technologist. On the other, it is a response to the systemic vulnerability of handloom to the various discourses that negatively affect the weaver’s identity and to which we will turn below. While those who leave, do experience their leaving as empowering, the downside is that their leaving creates further uncertainty and instability for the identity of the weaver who continues in weaving.

Non-Linear Understanding of Handloom Systems

The three sites of mobility – of lifecycle, livelihood and identity – can be seen to form a temporal continuum in the life of the weaver. A personal crisis where a weaver has an acute financial breakdown pushes him into the city, usually where there is already social support that he can link to. If he is able to support himself while his wife carries on with her work on the loom, there is a possibility that he can come back to the village at more stable times. If this cycle repeats too often, however, it foments fatigue and weavers may try to move completely out of weaving and the village.

On the other hand, weavers use mobility to stabilise livelihood during difficult times in the life cycle and livelihood
by moving to places with better opportunities; and then moving back when the threat is over. When weavers are confident, it manifests in their practices of self-production of identity – they speak of weaving with pride. Often such weavers – paradoxically – are able to educate their children to move out of the occupation and village. Thus they hope to give them stability and a contemporary identity. But the livelihood choice of handloom is still open and acceptable for the child skilled in handloom.

Puchala Paidraju clearly epitomises the stable weaver who continued in weaving through the many changes around him. He says it helped that he owned his home, so that in times of difficulty he had reason to stay in the village rather than move to the city. Paidraju worked with the local cooperative that had a linkage with a marketing agency in the city, and he trained himself to work for the distant market. These new skills included keeping to the schedules of the buyers, learning to deliver in time, learning how to weave an eco-friendly dyed product, working to customer schedules if there was a deadline, building flexibility into his weaving cycle, shifting between products as per demand, and even travelling to the customer locations to better understand their quality parameters. He was able to educate his son, who enrolled in a bachelor programme in computer applications, and says he may eventually choose to come back and work on the loom. This is indeed interesting, as he sees his son’s shift back to the loom as a sign of self-respect.

From an analysis of the narratives, it is thus possible to understand the role that mobility plays in keeping individual livelihoods sustainable. Weavers do not all respond in the same way to the livelihood stress at a particular time, this response is mediated by the stage in the life cycle of the weaver and his or her resources at that point. This diffuses the effect of an external crisis on the handloom system. Weavers are not individual units of production; they are linked together in a production network that forms a socio-technical system. During times of external crisis, a small core of the system remains stable, as strongly embedded weavers continue to weave, while the peripheries expand and contract with the to-and-fro movement of individual entrepreneurial weavers who jump in and out of the system. When the carrying capacity of the system increases or depletes, what then emerges is an image of a system that grows or shrinks in response to opportunity or threat in the environment, constantly striving towards its own sustainability.

To more clearly bring out this socio-technical character of handloom, it will help to compare the different practices in mechanised and handloom textiles production (Table 2).

The table shows that all the technical functions of textile production exist within handloom. But the social interactions in which they are embedded are markedly different if we compare the handloom and the mechanised styles of production. In handloom the technical functions are less visible, and social functions are foregrounded as community activity. But both work together to accomplish the task of textile production in handloom, as they do in the mechanised mode. That working together – indeed the impossibility of having one without the other – is why we want to use the term “socio-technology”. In the final section we shall return to this close relationship of the technical and the social.

In handloom, it is the relationship between father and son on which growth in production is built. When the son comes of age, he moves out of his father’s house and starts weaving with his wife. Then husband and wife function as a new core production unit, and extend their network into stable social relations with sizers, warpers, winders, dyers and a marketing membership with the cooperative or with a master weaver.
This may be an opportunity for the young weaver to innovate on the loom and demand higher wage from the market, but he could also take up the challenging function of making new relations in the marketplace by becoming a master weaver or designer himself. For the next generation learning thus includes more than the technical skill of weaving. Now, the young weaver not only has to handle the loom without the help of his father, but also negotiate with the market; he has to gain expertise in replacing parts of the loom that do not work, and in innovating products. And he has to make and maintain the relations around the functions of the loom as well.

No weaver lets a guest to the village pass by without inviting her into his home. This is not just hospitality; it is a maximising of social and technical relations that is inherent in his practice. The complex social, technical and economic networks that constitute the socio-technical practice of the weaver make this necessary. But a limited understanding of the loom as traditional machinery obscures this practice and the associated expertise of the weaver. Weavers’ skills then are reduced to what is tangible – the labouring at the loom. Such a limited view obfuscates what is intangible – an understanding of the weaver as a technologist within a life world that is complete in itself at the village level and at an interpersonal scale, while virtually including the customer.

Alleviating Vulnerability

Understanding that some weavers experience mobility as opportunity does not take away the acute threat to the vulnerable weaver of losing his or her livelihood, nor can casualties be explained as mere collateral damage. The vulnerability narratives bring home an important message: although handloom communities are organised into systems that constantly tend towards internal sustainability, they still teeter on the edge of survival and are constantly vulnerable to shocks that can tip individual weavers over the edge into unsustainability and downward mobility. Looking back at the three possible forms of vulnerability that weavers may face, we see that the capability to cope with acute vulnerability is limited to the measure of the individual weaver’s personal resources. Where they are strong, the weaver survives; and where they give way, the weaver despairs. Strong institutional networks, well-functioning state-sponsored cooperatives and appropriate public policy such as the National Rural Employment Guarantee Act (NREGA) offer possible if partial alternatives. If we are not to pay the high price of turning skilled rural artisans into coolie labour living in urban squalor, then social policy that mitigates the harmful consequences of livelihood uncertainty has to be insisted upon, See also Breman (2001).

The second, chronic form of vulnerability, explicating mobility as a temporary response to livelihood stress, allows for strategies towards future sustainability. This diagnosis of chronic vulnerability allows us to take weavers’ distress seriously and intervene to relieve the crises, instead of viewing it as further proof of chronic unsustainability that cannot be cured. In this perspective institutional responses by policymakers and facilitating agencies are feasible. Rather than abandoning handloom as a lost cause or supporting it with charity, both the state and civil society have to address the instability without fear of creating dependencies. This support would stabilise livelihoods, and temporarily reduce vulnerability till weavers again are able stand on their own feet. Organisations such as Dastkar Andhra, Desi and others have had some success using this approach. For example, Dastkar Andhra’s marketing programme works to strengthen weaver cooperatives in production marketing functions so that they are able to reach new markets, while keeping wage stable. This mobilised a generation of weavers out of poverty in 25 villages. A recent government supported initiative to access credit through self help-groups for these cooperatives turned around loss-making cooperatives and increased their marketing turnover by 50%, stabilising income from weaving across the region.

The systemic vulnerability that weavers experience comes from “received wisdom” in society that conceives handloom knowledge as traditional and irrelevant. This vulnerability has to be addressed through reconstructing handloom technology in terms of sustainable socio-technical systems, and recasting the identity of the weaver as having sophisticated social and technical expertise. This change of perspective, while seemingly small, can construct a new and promising discourse for weavers by affirming their resilience and offering new ways of learning and innovating. The digital graphic capability of weaver designers, the complex knowledge of village dyers, sizers’ understanding of cotton yarn behaviour in different seasons, the mathematical knowledge of conversions necessary at every stage of the weaving process have to be valued and leveraged into the emerging Indian knowledge economies. Before turning to this analysis, we will first examine the prevalent frameworks in which handloom is currently entangled – resulting in that flawed “received wisdom” about handloom.

Theoretical Lock-in: View Maintained by Old Discourses

The unsustainability of handloom as technology and as an economic activity is unquestioned in most narratives about the handloom sector. Roy (1988) challenges this view by arguing that it is based on assumptions rather than data, “Such characterisations are often accompanied by implicit or explicit assumptions that these sectors are typically composed of subsistence households, simple commodity producers, surviving by dint of super-exploitation of family labour and undergoing continuous immiseration”.

Roy (2002) then explores the role of technological change and artisanal experience. He suggests that technological change in handlooms cannot be seen as a simple response to competition from power-looms based in the mills, since the new tools and processes came nowhere near to bridging the productivity gap between these alternatives. Specific markets and the need to become more efficient in supplying these markets, therefore, are as relevant to the experience of traditional industry as the comparison of labour-intensive and capital-intensive alternatives (ibid: 508).

But he cautions that such changes “remained limited in scale and confined to certain places, products, and groups of weavers” (Roy 2002: 509). Haynes (2001) suggests that
The research of Roy and Haynes and the marketing successes of Fabindia, Anokhi and DAMA all present challenges to the received view that handloom is unsustainable. Why, then, is this view so persistent? In this section we will argue that handloom’s perceived unsustainability results from a theoretical lock-in in three different discourses – policy, economics, and management – each with its own forms of indicators (Table 3).

As early as 1954, the report of the Kanungo Committee to the Government of India recommended “For the ordinary cloth, the pure and simple handloom is and must be a relatively inefficient tool of production” (Misra 1994: 52). Later committees would continue in this vein, even referring to loom technology as “primitive” and in need of technical upgrading. They advised the government that the weaver must move into the power loom sector (Niranjana and Vinayan 2001). On the ground, distress increased pressure on the state to provide support to weavers struggling to survive. Retrospectively then, every movement out of weaving was seen as an inevitable failure of the welfare state in sustaining poor weavers. In response, the role of the state has been to provide subsidies and welfare schemes, rather than to invest in the industry. At the bottom of the industry, for very poor weavers, this support was indeed necessary. However, the top of the industry starved of much needed investments because of this undifferentiated state policy (Niranjana and Vinayan 2001). While India focused on modernisation, liberalisation and globalisation, Indian policymakers across time repeatedly predicted the demise of handloom and were blind to its continued existence.

As late as 1990, the World Bank depended only on economic measurements – typically the dollar income per day – for diagnosing the condition of poverty. Compelling arguments have been made against purely economic measurements as reductionism for ease of measurement (Chambers and Conway 1992). Other indicators and measurements have been proposed: for capturing well-being (Sen 1988); for capturing poverty in terms of risk and vulnerability (Alwang, Siegel et al 2001); and for stimulating empowerment and participation (Narayan, Patel et al 2000). However, most policymakers find it difficult to handle qualitative or semi-quantitative indicators as they erroneously assume these to be “subjective”, while quantitative measurements are seen as “objective” and “rigorous”. Development policymakers thus continue to use economic indicators (Sumner 2007). This discourse constructs the subject of development clearly as an individual economic subject who falls within a specific income bracket, and is termed below the poverty line and worthy of development support.

A second contested term, which continues to function as indicator for the upper end of poverty measurements, is that of the minimum wage. For a livelihood to be deemed sustainable, most nation states proclaim a statutory minimum wage. This is the minimum that an employer must pay labour, and the minimum wage for which workers may sell their labour. For most weavers this minimum wage number is still higher than the individual income they gain from handloom, especially in a fluctuating market. Measured in these terms, the handloom weaver has a peculiar problem. He is not poor enough to warrant welfare since he is not poor enough to fall below the poverty line. But equally his labour value is not over the minimum wage, and so handloom does not provide an adequate livelihood to the weaver – it is at subsistence level. Hence handloom is not seen as viable livelihood and worth investing in by development policy.

As part of the process of “greening capitalism”, sustainable business is seen as a further stage of civilisation for businesses, with a new role in social and environmental problem solving. Coined in the mid-1990s, the term “triple bottom line” refers to performance on three axes for sustainable practices for businesses in capitalist economies: financial profitability, social responsibility and environmental effects (Elkington 1998). But corporations work within a market rationale, and programmes such as “corporate social responsibility” have not proved sufficiently transformative or accountable in their goal of achieving public good, and the profit parameter continues to be advantaged over the social and environmental parameters as a condition for investment (O’Laughlin 2008). Handloom, though high on social and environmental performance, fails on financial sustainability. The handloom weaver is part of the world’s poor, and the new corporate theories of inclusion see him or her as customer (Prahalad and Hammond 2002), not producer (Arora and Romijn 2009).

Locked in these discourses of national modernisation and progress, poverty and development, and profits on capital, one can only see handloom as unsustainable. This theoretical lock-in presents a real problem for the practising weaver. In order to break out of this lock-in, we propose a new discourse which explains the continued existence of handloom, even under constant threat of extinction by industrial production, and the weavers’ ability to sustain themselves generation after generation. The first aspect of the discourse is to view handloom as a socio-technical system of weavers+village+market that

| Table 3: Discourses That Lock Handloom in a View of Unsustainability and a Response |
|-------------------------------|------------------|---------------------------------|-----------------------------------|
| Problem Domain | Current Discourses | Indicators for Measurement in Current Discourses | Aspects of a New Discourse on Handloom |
| State policy | Modernisation discourse | Productivity | Resilient socio-technical system of weavers+village+market |
| Economics | Profitability discourse | Income, weaver’s network | Knowledge and expertise in the pre-loom, loom, and post-loom processes that increase value |

| Management | Return on investment | Innovations in pre-loom, loom, and post-loom processes that increase value |

industry starved of much needed investments because of this undifferentiated state policy (Niranjana and Vinayan 2001). While India focused on modernisation, liberalisation and globalisation, Indian policymakers across time repeatedly predicted the demise of handloom and were blind to its continued existence.
allows us to highlight social, economic and technical facets that remain invisible in the modernity discourse and that are opposites of “unproductive” and “small scale”. A second aspect recognises the embedded technical as well as social knowledge and expertise in this network, and thus provides an antidote against viewing the weavers as unknowing, unskilled and lowly qualified welfare subjects. The third aspect points to the systemic capacity for technical and social innovation stretching across pre-loom, loom and post-loom processes that constantly build value in the market; this aspect explains why handloom is not fossilised and indeed sustainable.

Conclusions

Weavers do realise that their technical expertise is closely linked to their ability to build and leverage social networks, and they understand the nature of interpersonal relationships as being crucial to support their place in the complex systems of pre- and post-loom processes and the market. They understand that cyclical practices of technology and the transactions over time build and transfer not just skills, but also knowledge. This complex mix of human and machine, embedded in social and transactional networks, works together – they understand – towards a goal of sustainable existence.

Their technical expertise can be made visible by closely studying their practices, and so can their ability to innovate for the market. Weavers constantly adapt their technology and mobilise knowledge within social and economic networks, albeit in a vernacular that is indecipherable unless one engages closely in their practice. Once explicated, this network has the attributes of a socio-technical network, and defines the identity of a weaver as a socio-technologist. This metaphor is not sufficiently recognised outside the weaver communities – in the worlds of policy, economics and management. Not seeing the socio-technologist in the weaver, we argue, is not caused by any lack of expertise in the weaver, but by failing articulation of this expertise as a sophisticated form of knowledge.

How then can we make visible the socio-technical nature of the weaver? First, we have to disentangle ourselves from the key assumptions of existing discourse that posit the loom as an unproductive technology, the weaver as an unthinking and unskilled labourer, and the industry as a collection of individual weaving units. The handloom industry is better understood as a sustainable system that is elastic and resilient to changes in the marketplace, absorbing new people and new knowledge when the demand expands, and shrinking when it comes down. This elasticity is obtained by the expertise and knowledge that is embedded in the socio-technical system. Each weaving family, for example, is linked to another five families through the auxiliary activities of dyeing, warping, sizing and winding. The weaving system is further linked to dyeing, credit and marketing through hybrid institutions that link rural and urban environments. This builds a complex socio-technical and economic network that weaver households maintain and by which they are maintained.

What does the loom do, as a socio-technology? It substitutes the accelerating connection between mass production and instant consumption inherent in industrial technology with a delaying function that is flexibly inflexible. It is inflexible, because its presence in the linked network enforces a certain pace of production on all the different players – from yarn suppliers to retail markets. It is flexible, because this slower pace allows for quick turnaround in design, colour, product, and space for contemporary technologies in spinning, dyeing or marketing to be adapted for local use.

Value is realised through the innovative and adaptive technical practices and social interactions of the weavers themselves. Skilled weavers of khadi in Srikakulam, who can weave only as fast as yarn is spun by hand have added curing practices of natural dyeing to obtain fast colours as well as meet market demands for organic products. Cooperatives in East Godavari, supporting medium skilled weavers who weave basic fabric, have taken up reactive non-toxic dyes, and added dyehouses to their network; they can now stably supply to export companies. Small master weavers in Chirala use computer aided card punching to change borders on the loom for every warp length, to convert silk designs to cotton to leverage their superior cotton sizing capabilities and supply to traditional markets in Chennai. The weaver’s socio-technical expertise is firmly blackboxed – indeed so stable that we do not notice how it innovates and adapts till the weaver comes up against the boundaries of the discourses that immobilise him.

Several parallel realities can now be understood. One reality is the vulnerability of the individual weaver, existing side by side with the reality of a resilient weaver community. Inevitably, the weaver lives with the constant threat that he or she can be forced to move out of his or her life world – a laborious transition of leaving home and identity that is difficult and, in the end, depleting. This lies at the core of the disenchantment of weavers with handloom, even as it helps them survive poverty. For intervening agencies then, it is important to differentiate between possible interventions that foreground vulnerability of the weaver that causes distress, and interventions that facilitate the utilisation of the opportunities that can be used to stabilise livelihoods.

Another reality is created by the discourse of the state. Since handloom weavers are heard to say that handloom weaving is unsustainable and migrate out of weaving, the state concludes that abandoning weaving is the solution to the problem of handloom unsustainability. The different theoretical frameworks that inform policymaking, and that we have described above, only reinforce this assumption. These frameworks result in a lack of political will to invest in sustaining handloom, leaving the weaver further vulnerable to a changeable market. At a systemic level, the consequence of state discourse with regard to handloom thus is that of a self-fulfilling prophecy. The state describes handloom as outdated and in a state of decline, and this results in a starvation of resources to the industry.

If one accepts our thesis of handloom as a socio-technical system with knowledge, skills, technologies and social relations, new possibilities of systemic sustainability emerge. Such a system has the capacity to change but at its own measured
pace. It allows for reflexivity, learning, experimentation and innovation. Empirical narratives of weavers’ mobility have shown us this perspective in contrast to the received wisdom on unsustainability in weaving. We are now able to place the mobility of the weaver in an interesting contrast to the lock-in that is perpetuated by the three discourses of modernisation, poverty-alleviation, and profitability. This indicates ways of breaking out of the theoretical lock-in that makes the irrelevance of handloom into a self-fulfilling prophecy. From studying the success of handloom, rather than its failure, the problem of the weaver is now understood differently. We thus see that it is possible to alleviate the weaver’s vulnerability through investments in specific solutions at vulnerable points, so that he can sustain himself and his family. No charity is called for, but support in innovating the weavers’ knowledge, technology and social systems.

NOTES


2 For the purpose of understanding weaver narratives on sustainability and mobility, 25 individual weavers, of whom five were women, were interviewed across four villages, each with at least 50 active weavers. The interviews were conducted by Annapurna M, accompanied by two fieldworkers from Dastkar Andhra: Sri lakshmi and Ravindra.


5 Interviews Boodidi Apparao, Puchala Paidraju, Maanem Vishwanath, Muppena Apparao.

6 We associate actual with individual, chronic with community and systemic with societal vulnerabilities, but need not elaborate these associations in this paper.

7 For handloom weavers who live in the coastal areas for instance, the handlooms are installed in pits that are vulnerable to flooding during heavy rains. This can stop work for up to four weeks, and damage warps on the loom.

8 Domestic yarn prices fluctuate with global cotton prices as well as government export policies. Rain is a major factor for cotton production, and causes arguably large fluctuations in yarn prices, which affect the handloom industry adversely.

9 Large crises in the handloom industry have been associated with weaver suicides, reportedly due to financial crisis and mounting debt. Such instances have been recorded in the early 1990s, again in 2001 and now recently during 2011. See also http://www.dnb.co.in/ SMEstextile/overview.pdf/surveys_reports/indias_textile_sector.pdf, last accessed, 14 May 2012.

10 Chandrika Parmar in her PhD thesis (Manu- festo, Oxford University).

11 Interviews Asiri Naidu, Maanem Vishwanath, Muppena Gopi, Bhalla Bhdrabrai; village of Ponduru.

12 Interviews with Boodidi Appa Rao, Boodidi Rashmi, Tutika Mohan Rao, and Puchala Paidraju; all from Ponduru.

13 See, for example, the country-wise database of minimum wage of the International Labour Organisation (ILO), http://www.ilo.org/dyn/travail/travmain/home (last accessed on 10 May 2012).

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