

Living Design. The future of sustainable maker enterprises: a case study in Cumbria

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Abstract: This paper presents initial findings from *Living Design*, a project supported by the UK's Arts and Humanities Research Council. The research examines small and micro-enterprises in Cumbria, UK, and the potential for design to make a contribution to their sustainment and flourishing. The paper presents research carried out with enterprises in Cumbria, who use wool as their main material. We present three case studies of makers who create beautifully designed, wool-based goods and whose practice include the whole cycle from sourcing fleece locally and manufacturing of their products, to design, branding and retail. We explore how the enterprises exemplify sustainability principles and their contribution to a circular economy. We present our findings and the concept of *Located Making* - purposeful goods whose design, production or use is dependent on place - which is informing the development of guides for enterprises, researchers and organisations to embed sustainability principles into their practices.

Keywords: Sustainability, maker-enterprises, design, craft

1. Introduction

This paper presents initial findings from *Living Design*, a research project undertaken by Lancaster and Manchester Metropolitan Universities and funded by the UK's Arts and Humanities Research Council. The research examines small and micro-enterprises in Cumbria, in the North West of England, and the potential for design to make a constructive contribution to their sustainment and flourishing.

Globalization, increased travel and digital communication have enlarged our perspectives (Walker, 2006: 127) and this 'opening up' enables us to see, perhaps for the first time, the uniqueness of our own culture – its distinctive characteristics and its idiosyncrasies (Appadurai, 2001). Without a larger vista of comparison, we take our own culture for granted; its very familiarity making it virtually invisible to us. Paradoxically, the contemporary drive towards globalization is also the catalyst for a re-appreciation of the local (Manzini, 2010). In actuality, these two seemingly contradictory directions work in concert and are mutually dependent and supported (Walker, *ibid*).

This bringing together of apparent opposites occurs very distinctly in the county of Cumbria, which is located in Northern England and is one of Europe's most visited tourist areas. Here, we find a wide diversity of small and micro maker enterprises and object-related intangible cultural heritage in the form of practice, skills, intergenerational knowledge, all of which are trying to find their place in a global marketplace while embodying a sense of place and the 'local' through the design of their products.

This paper presents research carried out with maker-enterprises in Cumbria who use wool as their main material. Cumbria is a county with a historical connection to wool, through sheep farming and textile manufacturing, both of which have been an integral component of the economy for hundreds of years (Hartley & Ingilby, 2014). The industry in Cumbria died out during the early 20th Century, but in recent years has seen a resurgence in the use of wool, particularly the Herdwick, an ancient Cumbrian breed, and Swaledale sheep that are synonymous with the fells and mountains of the county.

We begin by presenting our methodology, followed by the presentation of three primary case studies of Cumbrian micro-enterprises all of which are based on wool. We present our initial findings, in particular that each of the enterprises engage in a meaningful way with place and offer alternative, more social models of production through the use of design that captures tradition and heritage, fosters local modes of production and embodies a strong sense of environmental and economic sustainability. Finally we outline the concept of Located Making that is emerging from our findings and forms a basis for the development of guidelines, which will be produced in the project's latter stages.

2. Methods and theoretical lens

2.1 Research Methods

The research is located in Cumbria and engages a variety of maker enterprises who produce a range of goods including woollen textile products, art materials, baskets, bags, and re-upholstered furniture. Cumbria was chosen due to its rich array of such enterprises and its cultural, economic and geographical diversity. At its heart lies the Lake District National Park, an area of outstanding natural beauty that was awarded UNESCO World Heritage Site status in 2017 in recognition of its unique landscape and cultural heritage (UNESCO, n.d.). The county is also situated close to the researcher's institutions, enabling regular contact and field-visits to enterprises involved in the research, thus enabling the research team to develop deeper connections with the enterprises and the place itself.

A constructivist approach is taken in the research (Gray, 2009) that draws upon local knowledge of makers and owners of enterprises. Semi-structured interviews were carried out with over twenty micro-enterprises (fewer than ten employees) and observations made during workshop visits in order to understand the practices of the enterprises. We also visited and interviewed some of the companies further afield – on the Scottish Borders and in Yorkshire – with whom our selected enterprises work; these included spinners, weavers, dyers and cloth finishers. This allowed the research team to garner insights into the production journey and the collaborative relationships the enterprises have developed. The interviews were analysed using thematic analysis (Braun & Clarke, 2006) in order to draw out key themes and issues.

The themes were developed using the theoretical lens of the *Quadruple Bottom Line of Design for Sustainability* (Walker, 2011, 2014) in order to establish how the enterprises consider and embed the principles within their practices. Limitations of this research relate to the number of interviews carried out and the scope of the study being confined to Cumbria. Twenty five enterprises were selected for initial interviews, this was then reduced after the first round of analysis as we found that some enterprises had little or no connection to place, local traditions or culture. The final selection of enterprises represent what we feel is a good cross-section of the practices in the region and a wide geographical spread across Cumbria.

2.2 The Quadruple Bottom Line of Design for Sustainability

This research explores how design can contribute to the effective implementation of sustainability principles at the local level in small and micro maker enterprises, through the theoretical lens of Walker's *Quadruple Bottom Line of Design for Sustainability* (Walker, 2011, 2014). The aim of the research is to develop effective ways of using design to implement the above principles in the enterprises to enable the making and selling of long-lasting desirable products, development of local skills, use of local materials and explore new market and business opportunities.

Walker (ibid.) presents the *Quadruple Bottom Line of Design for Sustainability* as an approach to design that shifts the focus from incremental change that is rooted in concepts of innovation, mass-production and environmental damage, to a holistic design approach that critiques such worldviews, challenges consumerism and encourages inner reflection when designing goods (Fig.1). Such an approach can lead to a change in the values embedded within products that reflect 'bigger than self' values (Crompton, 2010), which, in turn, encourage a more sustainable and meaningful worldview. This holistic approach comprises the following interrelated parts;

- **Practical Meaning:** providing for physical needs while ameliorating environmental impacts;
- **Social Meaning:** ethics, compassion, equity and justice;
- **Personal Meaning:** conscience, spiritual well-being, questions of ultimate concern;
- **Economic Means:** financial viability, but not as an end in itself.

By using this lens, the worldview so reliant upon rationalization, objectivity and scientific approaches can be challenged and a more meaningful and ultimately sustainable paradigm for design can emerge that embraces: rational and intuitive thinking; objectivity and subjectivity; detailed analytical approaches and more holistic synthetical approaches. This lens is particularly useful when considering the practices of small enterprises in order to identify the inherent values and sustainability of their goods and the enterprise more broadly, as presented in Section 3.

2.2 The Circular Economy

Disposability and obsolescence in the life-cycle of products have been key aspects of product design throughout the 20th century (Chapman, 2017: 370). Modern industrial processes have had unrestrained access to raw materials and have disregarded the throw-away nature of consumption and its environmental impact. This linear approach has led to a necessary and radical re-thinking of how products are designed (Cooper, 2017) and their place within different business models (Charter & Keiller, 2014).

The circular economy “entails gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system” (The Ellen MacArthur Foundation, n.d). This is particularly relevant to our work, in that it considers the sustainability of goods, the need to change the current ‘linear’ modes of production and consumption and to redefine notions of growth (Cooper, 2017). Craft practices and maker-enterprises can be considered as examples that highlight a creative approach to product design – an approach that considers the whole life-cycle of an object (Charter & Keiller, 2014). The recent emergence of ‘maker-spaces’ (The Centre for Craft Design, 2017), Repair Cafés (Lyons, 2018) and government initiatives to tackle ‘throwaway culture’ (Orange, n.d.) suggests a move towards a more circular economy, but much work is still to be done.

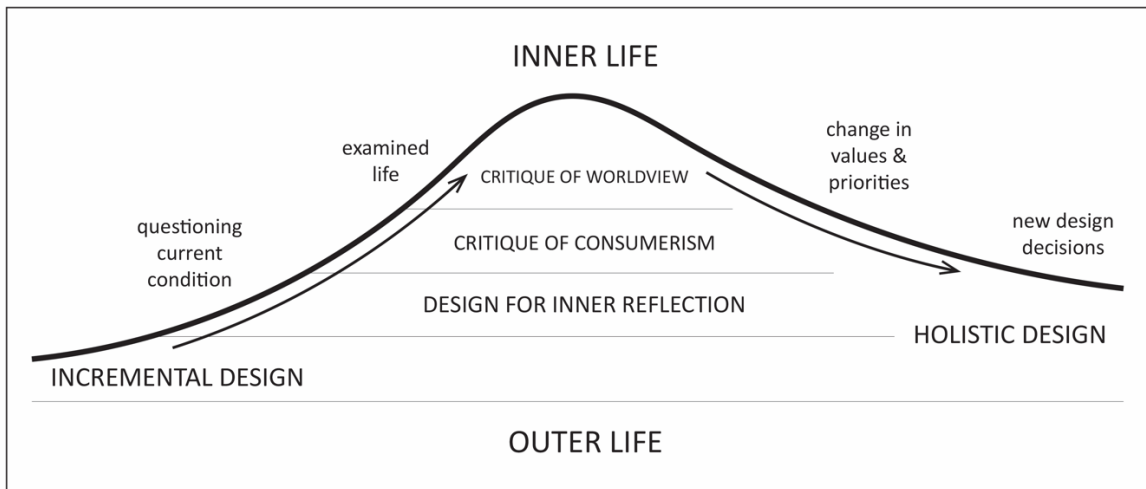


Figure 1: Design Shift: from incremental design to holistic design (Walker 2017, p.111)

By considering micro-enterprises operating in Cumbria, we offer insights into the ways some makers are approaching a less linear approach to product life cycles that are based upon ‘bigger than self’ values (Crompton, 2010). Such value systems, embodied by our interviewees, take a holistic view of design that encompasses the sustainable and ethical sourcing of materials, design that is sensitive to place, development of sustainable business models and careful consideration of the waste produced and longevity of their goods.

3. Research from the field

Wool is a natural material that is found in abundance in Cumbria, where many of the fells and mountains are home to sheep owned by shepherds whose families have sometimes farmed the land for centuries. The Herdwick sheep (from Norse ‘herdvyck’, meaning sheep pasture) is synonymous with the Cumbrian Lake District and famous for their distinctive, characterful face and their fleece, which changes from dark brown as lambs to light grey as adults. The Herdwick fleece is not suitable for clothing as its texture is thick and wiry and can irritate the skin. These properties also make it difficult to spin into yarn when compared to other sheep breeds. However, cloth made from Herdwick wool is very hard-wearing, which makes it suitable for such uses as upholstery, fabric, bags and filling for mattresses.

Cumbria has faced significant economic challenges during the last two decades, in particular an outbreak of Foot and Mouth disease in 2000, which decimated farms throughout the county. Farmers lost flocks of sheep whose bloodlines had been present on the Lakeland fells and mountains for centuries (Franks, et al. 2003; Rebanks, 2016). When the disease came to an end farmers had to explore ways of diversifying while simultaneously rebuilding their flocks.

Prior to the Foot and Mouth outbreak, fleece from Cumbrian flocks has been worthless, regarded as a by-product of meat production and often burned or buried rather than sold for use as yarn (Farm Business Show, n.d). However, in recent years enterprises have started to use Herdwick fleece in innovative, high value applications such as home furnishings, shoulder bags and as filler for high quality bed mattresses, as well as for relatively low value applications like home insulation, compost additive and packing materials. This has helped raise the price of Herdwick fleece, enabling farmers to generate more income from their flocks.

3.1 The Enterprises

To date, our research has included in-depth interviews and observations of processes with a wide variety of maker-enterprises in Cumbria. Materials include wood, glass, stone and animal products. Here we will focus on three of these enterprises, all of which use wool as their primary material. Each of these enterprises source the wool locally; indeed locality and the importance of place are fundamental to their motivation and inspiration.

Enterprise 1: *Cable and Blake*

This company, run by two friends, is located in Kendal, a small market town in the southern part of the county of Cumbria. The town has a rich history associated with the wool trade and has the motto “*Wool is my bread*”. The owners of Cable and Blake work part-time in the enterprise from their small shop on the town’s main street. Their fabric is designed in-house using the local landscape as inspiration for colour palettes and abstract patterns.



Figure 2: Re-upholstered chaise longue by Cable and Blake (image © Cable and Blake)

Enterprise 2: *Laura’s Loom*

Laura’s Loom is run by a sole-trader who has a workshop in an historic mill situated on the border between the county border between Cumbria and Yorkshire. The mill is now a thriving craft centre and home to a variety of micro-enterprises producing a range of products using traditional modes of making. Laura started weaving around twenty years ago after leaving a career as a scientist and

moving to the small market town of Sedbergh, to the east of the county. She produces a range of hand woven and commercially woven products, including scarves, throws, socks and blankets. Her products are made from a mix of Blue Faced Leicester and Swaledale fleeces.



Figure 3: Woven products by Laura's Loom (image © the authors)

Enterprise 3: Herdwick Limited

Located in Near Sawrey, a small village in south Cumbria, Herdwick Limited produces bags and accessories made from tweed. Based in Castle Cottage, the former home of Beatrix Potter, the sole proprietor Mandy lives as the custodian for the National Trust. Mandy purchased some Herdwick tweed fabric to re-upholster a window seat in the cottage, but ran out and set out on a journey to make her own fabric which she would use for bags and accessories.



Figure 4: Townhead Tweed by Herdwick Limited (image © the authors)

3.2 Relationships between the Enterprises and Principles of Sustainability

The interviews and observations carried out with these enterprises have been analysed through the lens of the *Quadruple Bottom Line of Design for Sustainability* (QBL) (Walker, 2011, 2014), i.e. we have examined how their motivations, practices and products align with the principles of design for sustainability as articulated in the QBL. Thematic analysis identified the key factors aligning the enterprises with practical meaning, social meaning, personal meaning and economic means. Figure 5 (below) presents key points emerging from the analysis, framed by the QBL.

Practical meaning: Utilitarian needs in combination with environmental care		
Materials	Locally made or sourced materials	Wool is purchased locally by the makers
	Re-cycled	Upholstered re-cycled furniture
	Renewable	Wool is in plentiful supply in Cumbria
	Adding value to 'waste' products	Farmers no longer have to burn or bury wool
Products	Utilitarian/of use	Bags, scarves, furniture, blankets, socks
	Classic design	Not based on latest trends and 'fast' fashion
Social meaning: Social justice, equity, community, charity		
Community	Care for community - using local materials	Support farmers by purchasing fleece
	Collaboration with local makers	Working local makers to produce products
	Collaboration with wider network of heritage enterprises	Work with traditional centres of textile manufacture
	Informal support networks	Makers share best practice and issues
Charity	Supporting enterprises and charity	One maker donates % of proceeds to charity
	Assisting makers financially	One maker purchased wood for local maker
Personal meaning: spirituality, inner values, conscience		
Meaningful work	Fulfilment through work	Makers find creativity essential
	Part of their <i>raison d'être</i>	Their practice links to their wellbeing
Connection to place	Through materials	Using local materials gives them a sense of ethical fulfilment
	Through 'being in' place	Landscape inspires their work
	Alignment with and reflection of personal values	Products & branding reflect their values
Economic means: Financial viability to ensure the provision of the above meanings		
Ethical income generation	Earning enough to make a living	Sole purpose of enterprise is not to make money but provide adequate income
	Ethical pricing	Not charging excessive amounts for products
Ethical business models	Circular economy	Makers source materials locally & sell products locally, contributing to local circular economy
	Economic sustainability	Makers believe in sharing the wealth – their enterprises contribute to a vibrant and varied local economy

Figure 5: Analysis of enterprises in line with QBL of Design for Sustainability

Whilst other themes have emerged from the analysis, for example issues faced by enterprises (e.g. economic, skills, lack of craft specific outlets in the region) they are not discussed in this paper.

Practical meaning: Utilitarian needs and environmental consideration

The enterprises all make products of practical use, e.g. bags, blankets, socks, upholstery of recycled furniture, rather than purely decorative objects or objets d'art. Through their use of local wool, which is an abundant and renewable material in the region, they all demonstrate care for the environment. This is manifested in a number of ways, including: making use of locally available resources; keeping transportation of resources to a minimum; and creating products from natural materials that are high quality, long-lasting and worthy of care. Localized production also means that periodic refurbishment or updating can be done at the local level. For example, reupholstering a Cable and Blake furniture piece, not only contributes to product longevity but also reduces waste. The enterprises all consider their own waste production, often using scraps of material left-over from bags or furnishings to make smaller items, such as key fobs or button covers. Through the sourcing of local fleeces, the enterprises have contributed to the rise in the price of this material that was, until relatively recently, considered to be a waste product (Lancashire Life, 2016). Herdwick fleece has long been considered a rough, coarse material that is unsuitable for high quality, attractive products. That perception is now changing through the production of goods made by enterprises such as Herdwick Limited and Cable & Blake. This change in perception is particularly important to Alice, who says people "...always associate the Herdwick with being under-valued and itchy ... it's actually beautiful wool" (Blakeney-Edwards, 2018)

The enterprises all started from the premise of wanting to work with local fleece, for example Alice from Cable & Blake states her motivation "...for years when I moved to Cumbria I wanted to do something with Herdwick sheep" (Blakeney-Edwards, 2018). Laura uses predominantly Blue Faced Leicester and Swaledale sheep, saying she was motivated to "make use of a local resource, naturally and locally available, renewable ... environmentally friendly" (Rosenzweig, 2017), rather than buying materials in. Here we see the enterprises carefully considering the environmental impact of their goods, while supporting local farmers and giving back through the increase in the price of fleece. This approach to re-use and consideration of the environment through locally sourced fleeces is reiterated by Alice, who says this approach is about "not being takers, it's really trying to work this idea of re-using things ... being able to have something local" (Blakeney-Edwards, 2018).

Sustainability requires a radical re-think of our current approaches to environmental practices, which includes the increased longevity of products and careful consideration of its whole lifecycle. Fashion appears to be in opposition to this approach (Heuer & Becker-Leifhold, 2018), suggesting a "passing fashion or fad – something transient, superficial and often rather wasteful" (Walker, 2006: 90). However fashion does foster creativity and reflects contemporary issues through material culture.

The three enterprises consider the thoughtful design and timeless appearance of their goods to be essential. Through using the natural environment and place as inspiration they create functional products that are attractive, yet will not date as they are not based on current trends and fads. Although wool and tweed have seen a resurgence in recent years (UK Government, 2016), fashion trends do not influence their work, of which Alice from Cable & Blake says "...we've been very lucky as this is the stuff we like and it is classic" (Blakeney-Edwards, 2018).

In terms of sustainability, the 'local' and timeless approaches embodied by these enterprises offer a way forward that enables consumers to purchase attractive goods that do not go out of fashion with

passing trends and have longevity designed into them. The long-term relationship with goods such as these also increases attachment between the consumer and object.

Social meaning: moral considerations, duty and matters of social justice

All of the enterprises presented care deeply about their local community and support local farmers and makers. From our interviews, we heard again and again that ‘giving back’ is of great importance and they do so in various ways including donating a percentage of a line of products to a local charity and supporting local makers by commissioning them to produce goods which they sell under their respective brands. Supporting other women was important to one maker, who told us “I want to encourage other women ... I like the notion that encourages other women and ... because I learned a lot about John Ruskin [the 19th century art critic and social reformer who lived in Cumbria] ... It seemed to me to be the right thing to do” (Marshall, 2018).

All three enterprises we are considering here work with local farmers who provide their wool and receive a fair price, despite cheaper wool being available from elsewhere. This is fundamental to these enterprises; one maker said “I think it’s vital to invest in those [local] people” (ibid). Another saw it as a way of supporting local farmers and cultivating local social relationships, commenting that it is “a way to give back to where I am living and integrate into the local community” (Rosenzweig, 2017). While another highlighted the personal motivations underpinning the enterprise in a similar light and says “I suppose it is a way of giving back in some way ... the whole concept [of the company] has really come from the heart” (Blakeney-Edwards, 2018).

Hence, the enterprises all foster a sense of community, acting as small ‘hubs’ and collaborating with a wide network of suppliers and larger enterprises for the production of their fabric, supporting local producers, makers, and manufacturers in the greater region, and sharing skills. These relationships are vital to these micro-enterprises because none of them trained formally in design, weaving or bag making.

Personal meaning: inner values, matters of conscience and spiritual wellbeing

Personal motivation through meaningful work is core to the three enterprises featured. All three are passionate about their work and driven by a desire to be creative. All three started on very different career paths before developing their current enterprises, motivated by a desire to engage with the place in which they live. All three have achieved this by creating beautiful *place-based* products – products that can be regarded as physical manifestations and tangible symbols of their own inner values. An important part of this is the commitment they feel to *place* and the landscape around them. Laura describes the place where she lives and works as being the inspiration for her work, particularly the colours of the landscape. Mandy’s designs directly reflect a significant aspect of the Lakeland landscape through the greys of the Herdwick sheep; her fabrics are not dyed. The landscape is also reflected in Cable & Blake’s fabric. They take photographs of the local fells and mountains, which they use to match colours for fabric dyes and to develop patterns for digital fabric printing. This connection with their environment is fundamental to all three enterprises; it provides them with creative inspiration and contributes to their sense of wellbeing.

In addition, for Laura, the act of weaving is a fundamental motivation. She tells us that regular practice contributes to her wellbeing, “If I can’t do enough of it I’m not happy. It is a really physical, visceral reaction” (Rosenzweig, 2017). For both Alice of Cable and Blake and Mandy and Herdwick Bags, neither of whom make the goods themselves, the process of sourcing materials with farmers, designing the company’s branding and products, and working with local makers offers them a creative outlet that gives their lives meaning. For Mandy, in her description of the process, she has gone through an understanding how the farmers work and the tweed is woven. She talks of a

journey that has changed her along the way. She also bases the enterprise on her own personal values, reflecting that *“if you are fair with people they will be fair with you”* (Marshall, 2018). Alice has what she considers an un-creative job in finance, so Cable & Blake offers a valuable alternative, *“I do such a black and white job, so anything that is a bit outside of the box is ... very nice for me to be able to do something much more creative”* (Blakeney-Edwards, 2018).

‘Relationship to place’ and the notion of ‘local’ is vital to these enterprises, in terms of using materials that have been sourced nearby, supporting other local makers (as in the case of Cable and Blake) and selling through fairs, shops and shows within the county. Alice says, *“The brand is all about quality, Herdwick ... made as locally as possible”* (Blakeney-Edwards, 2018), a view that is echoed by Laura, *“My stuff is very rooted in place and that’s what initially drove me to start what I’m doing”* (Rosenzweig, 2018). Local production and consumption is key to sustainability in terms of the environmental impact of the supply chain. Manzini (2010) discusses the implications of the ‘local’ in relationship to the global, in terms of operating as ‘nodes’ within networks. In the case of the enterprises featured in this research, they all operate partially online, selling to customers nationally and internationally. They also utilise skills they do not have but which they need for the success of their business – such as web-design, marketing and perhaps most significantly, the specialist companies who spin, weave, dye and finish their goods.

Care for the environment, farmers, other makers and their wider community demonstrates that the values of the people running these enterprises are ‘self-transcending’ or ‘bigger than self’ values. Such values are characterized by benevolence, which promote cooperative and social relations; universalism, concern and care for others, understanding and the protection of the welfare of the environment, people and nature; and tradition, the respect and commitment to one’s customs and traditions (Schwartz 2012). Such values are embedded in the Quadruple Bottom Line of Design for Sustainability (2011, 2014) and reflect the importance of caring for others and the natural environment in the act of design.

Economic means: *Financial viability to ensure the provision of the above meanings (considered as a means to achieve the other three, not as an end)*

None of the enterprises considered here came into existence through a sole desire to make a lot of money, rather they wanted to ‘earn a living’ and support other local business through their work. They consider it important to invest locally and to ‘spread a little wealth’ (Blakeney-Edwards, 2018) amongst local communities. The owners of Laura’s Loom and Herdwick Limited both work in their enterprises full time, whereas the owners of Cable and Blake have other jobs and work part-time in the enterprise. Many makers have told us that earning a living from their sole enterprise is difficult, due to what many of them feel to be a general lack of appreciation of the time and skill that goes into such goods and the high quality materials from which they are made. For these reasons, some are developing business models that combine the production of hand-made with the machine-made products or elements of products; some operate as a hub that commissions and sells work made by others; and some supplement the income from making and selling products by teaching, running workshops, and giving talks.

Relationships with heritage businesses (spinners, weavers, dyers and finishers based in the Scottish Borders and Yorkshire) that are able to produce small batches of fabric are fundamental to the viability of these enterprises, enabling them to commission larger quantities of products in order to generate income. Weaving by hand is Laura’s passion, but selling only hand-made products would not allow the enterprise to survive. She says, *“I never get back on a hand-woven piece the amount of time and effort that’s gone into it, so I branched off into a more commercial way of doing business”*

(Rosenzweig, 2018). This approach enables her to have stock to sell from her workshop, website and fairs

4. Conclusions

The three enterprises considered here all embody sustainability principles, as discussed in section 3. While the practices manifest these principles, the values driving those practices are the crux of the matter and these values are both self-transcending and conservational (Schwartz 2012). Such values are diametrically opposed to the self-enhancing values and those values concerned with change and innovation (Crompton, 2010), which are typical of many businesses and strongly encouraged by government at all levels. This highlights particular concerns about contemporary culture's attempts to address sustainability while also enthusiastically driving change through technological innovation and growth-oriented consumption (and measured through GDP), which employs a narrative pervaded by messages related to achievement, aspiration, status and pleasure seeking (hedonism); all these incompatible both with traditional making practices and the values of sustainability.

4.1 Located Making

The findings from our research with the full range of enterprises in Cumbria have been developed through the lens of the *Quadruple Line of Design for Sustainability*. As discussed, the three makers in this paper represent a variety of enterprises who share core values that embody sustainable principles, in that they care about environmental concerns, their customers, supporting their local community and producing goods that reflect such values.

Our concept of *Located Making* is grounded in notions of design that are in opposition to contemporary approaches where goods are mass produced, disposable and bear little connection to place or their impact upon the environment (Manzini 2010; Thackara, 2006). The core principles and practices of the makers in the wider study have informed *Located Making*, which can be considered as a (developing) method for understanding the products, along with their related materials and practices, in relation to both the underlying values and the principles of *Design for Sustainability*. *Located Making* takes the *Quadruple Bottom Line of Design for Sustainability* as its theoretical basis and articulates commonalities we have uncovered during our field research in Cumbria. *Located Making* may be used as a set of guiding criteria for the production and promotion of goods that embody principles of sustainability and offer a way forward for enterprises to employ design within their businesses and to produce place-based goods that embed values that act as a counterpoint to dominant modes of production and consumption.

We define *Located Making* as '*purposeful goods whose design, production or use is dependent on place*'; it comprises the criteria set out in Fig.6. The first stage of the process is to identify the practical, social, personal and economic considerations of an enterprise. This stage is followed by an exploration of the enterprises connections to place that connect to the practical, social, personal and economic elements of the designs and products.

4.2 Next steps and concluding comments

The next stage of the research will involve the development of the *Located Making* concept and testing its feasibility by inputting the data from our research to ensure the robustness and wider applicability. We will also share the insights gained and the proposals for *Located Making* with key participants in our research, as well as the larger maker community, policy makers and researchers.

From here we will then develop an interactive ‘Ten Point’ guide for enterprises, researchers and organisations that suggest how design can make a contribution to the sustainment and flourishing of small and micro maker enterprises. Based on our research and engagement with enterprises, the guide will offer ways forward for enterprises, policy makers and researchers.

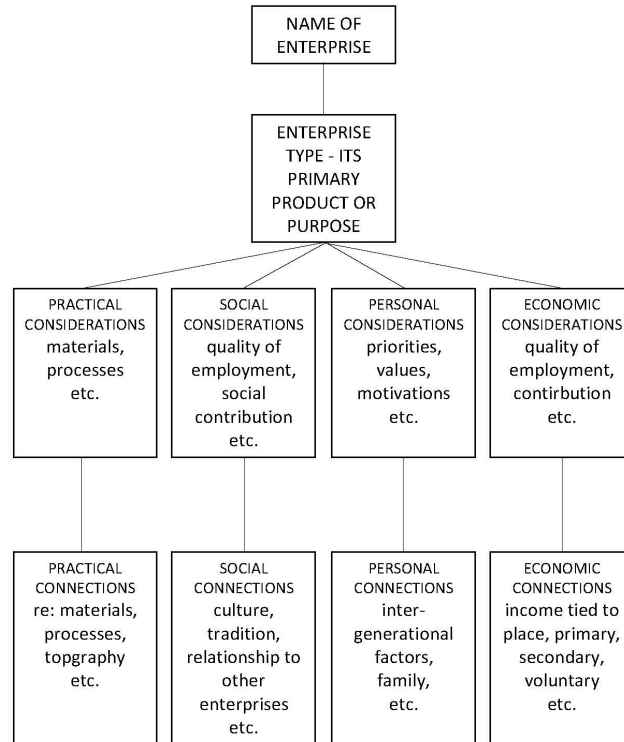


Figure 6: Located Making Diagram (Walker, 2018)

Collaboration with and feedback from enterprises and organisations will enable us to offer practical guidance for developing sustainable enterprises that will be rolled out in the latter part of 2019.

Our emergent findings have identified that the enterprises interviewed for our research align well with Walker’s *Quadruple Bottom Line of Design for Sustainability*, in that they embody the practical, social, and personal meanings as defined in Section 2. Furthermore, those enterprises discussed in this paper, and the wider enterprises looked at in our research, offer examples of small and local businesses that are exploring non-linear business models that have many accordance’s with the concept of the circular economy. They offer much to consider in terms of the radical re-thinking that is required to counteract the dominant approaches to production and consumption prevalent in contemporary society. The thoughtful approach of the three enterprises and their design and production of beautiful, place-based goods offers hope that there is an alternative to mass-produced, linear consumption – an alternative based on values that embody universalism, benevolence and care for traditional practices of place.

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