Tom Henfrey Permaculture Diploma Design Project 2: A Design Process for Collaborative Research.

Collaborators: Wilf Richards, Amy Mycock, Andrea Armstrong

1. Summary

This design documents the first stages in my learning journey in applying permaculture design principles in my professional field of environmental and social research. It began providentially, as an unintended outcome of a professional collaboration with my diploma tutor, Wilf Richards that began with an application for project funding in June 2009. The actual collaboration it describes ran from September 2009 until October 2010. I wrote it up as a design retrospectively during 2011. It later became the basis of my contributions to setting up the *Transition Research Network*, designing and implementing an important *research project on behalf of Transition Network* (Design 3), the development of a *pattern language for Transition research* (Design 4), and development of the *research pillar of ECOLISE* and creation of a *knowledge commons for community-led action on sustainability and climate change* (Design 5). It has also been crucial to my role as a member of the Permaculture Association's *Research Advisory Board* and *Research Working Group*. This design thus initiated an ongoing process in using permaculture design principles to transform potentially problematically tensions that arise when academic researchers seek to collaborate with community groups into productive synergies from which both parties can benefit.

Design process:
OBREDIMET

Design tools:

- Systematic use of **permaculture principles**
- **Retrospective analysis** as a form of client interview
- **Stacking** (many yields from every element, every element serving multiple functions)
- **Edge** (enabling mutually beneficial inter-relationships through appropriate placement)

2. Background

My position at Durham University allowed me to apply for internally allocated funding from ONE North East (the now-defunct Regional Development Agency) for masters-level research projects involving collaboration between the university and a local company. Wilf is a member of a workers co-op, *Abundant Earth*, which manages a smallholding just outside Durham from which it runs a vegetable bag scheme. Abundant Earth became the business partner in an action research project on the local food sector in County Durham.

Research focused on the needs of the *Durham Local Food Network*, set up by Wilf a few years earlier and at that time coordinated by *Transition Durham*. Wilf had identified a number of practical actions that needed to be undertaken to step up this network's levels of activity. These centred on development of a website about local food in County Durham, including a directory of local food producers. This needed some concerted effort in engaging with local food producers to interest them in the network and website, identify their key concerns, and shape the website and the broader work of the network to reflect these. The brief became to design a research project in such a way as to address these needs and at the same time fulfil the academic criteria for a masters degree by research and the requirements of the funder to engage with local business as a built-in part of the research.

We recruited Amy Mycock, who had just graduated from the Anthropology degree on which I taught and who I knew was a local food enthusiast, as the project's research student, to begin work during the academic year 2009-10. Both Amy and I – independently and without at the time considering it directly relevant to the project – signed up for the first *Durham City PDC*, which Wilf delivered over the autumn and winter of the same year.

The collaboration was a great success in both academic and practical terms, and in the summer of 2010 I presented a paper about it at a session on Anthropology and permaculture an academic

conference. While writing the paper, I realised that much of the project's success could be attributed to us having applied, without explicitly planning to do so, permaculture design principles. I suggested to Wilf and Amy that we examine this systematically in order to identify general applications of Permaculture principles in designing **collaborative research** in which academics and non-academics work in partnership to achieve practical goals.[1] The research project itself thus became, effectively, the survey stage in a broader design addressing how to apply permaculture principles in creating *edge* – patterns of mutually beneficial relationship – between academic work and community-based sustainability action. The following description of the design sequence takes both of these layers into account; the emphasis is on how the initial project sparked a series of learning events around the broader issues it raised.

3. Design Process

3.1 Observation

At the conclusion of the Durham Local Food Research Project, we realised that without deliberately meaning to, we had applied many Permaculture principles. This design is based on a systematic analysis and evaluation of the nature and consequences of this, and of its relevance to participatory action research more generally. The full (implict) design sequence in the local food project thus became part of the observation phase in this design.

Further observation took place through my involvement in two further university research projects on collaborative research, undertaken by the *Centre of Social Justice and Community Action* at Durham University (CSCJA). One of these included the Durham Local Food Project as a case study in co-inquiry action research, which gave each the three core participants an opportunity to reflect on it in depth (the case study report is included here as Appendix 1). This and a later study on *Community-Based Participatory Research* greatly improved my understanding of the topic, and provided me with opportunities to deepen my understanding of academic literatures on collaborative research, both directly through my own reading and indirectly in discussion with colleagues.

3.2 Boundaries

Owing to the nature of the funding, which was provided by One North East, the Regional Development Agency, in order to encourage universities and local businesses to work together, the local food research project itself was located at the boundary of academic research and local business. This meant our main practical aim became to work at the boundary between activism and businesses on local food. Apart from Abundant Earth itself, few businesses had previously been involved in the Durham Local Food Network, which had mostly been made up of enthusiasts rather than professionals. This was largely because small businesses lack the time and energy to invest in a network without any clear indication of how it will benefit their business. By framing Amy's research around the question, 'What is the relationship between local food activism and business, and how can this be made a productive one', we created an opportunity for her to put sustained effort into working out how the two can support each other by creating common programmes.

This is also an example of how to make the boundary between academic research and community activism a productive one, through **stacking**: integration of multiple yields in a single element. In this case, this centred on Amy's dual role as a research student and local food activist, as part of a general framing of the project as an *action learning exercise* in which both Wilf and I also took roles. To a lesser extent, but still significantly, this was also true for the businesses and Local Food Network members who contributed to the research as participants, for whom it was an opportunity to reflect on their interests and how they relate to a bigger picture. More typically, the dominance of academic aims means these boundaries are in tension – practical outcomes are an optional extra, and other

[1] There are a number of established academic traditions of this type: examples from my own experience include participatory action research, co-inquiry action research and community-based participatory research. There are many other such terms in academic literatures; their differences are generally subtle, and often purely historical, and need not concern non-academic readers. For the sake of simplicity I use the generic term 'collaborative research' wherever possible in this write-up; where I have used other terms, these can be treated as synonymous with this and with each other.

participants such as interviewees part of a one-way relationship rather than ongoing process in building relationships and community, all of these viewed as distractions from the core academic aims.

Broader implementation also works across these boundaries. Again, these are more often experienced as constraints than opportunities, where professional demands on academics to publish and raise grant funding limit their time and energy for engaging in community-based activism. Learning from the project and its further developments have been crucial in the way I have transformed my professional life by creating a niche as a 'Transition researcher': in specific collaborative research projects, as a member of the Permaculture Association's Research Advisory Board and one of the founders and coordinators of the Transition Research Network, as a co-founder, Council member, volunteer and later employee of ECOLISE, and alongside this engagement with the broader academic community through publication, event organisation and establishment of new research projects and networks.

3.3 Resources

The most important resources available to us were:

- Experiences in the local food research project, and other research of a similar type.
- Published academic literature on participatory action research and similar approaches.
- Greater attention to collaborative research through attention to non-academic 'Impact' as a criterion for evaluating academic proposals and projects, the rising influence of permaculture, Transition and related approaches to sustainability.
- Opportunities to share experiences with colleagues and other practitioners, particularly in the CSCJA projects but also through broader networks of like-minded researchers and activist-scholars.
- Resources developed during the CSCJA studies, particularly the case study of the Durham Local Food Project: a presentation I made to the research group, interviews with Amy and Wilf conducted by Andrea Armstrong, a researcher on the project, and reports posted on the websites of *Beacon North East* and the *National Coordinating Centre for Public Engagement* (respectively, regional and national initiatives to promote engagement between university academics and wider publics).

3.4 Analysis

A team composing the three core members of the Local Food Research team (Wilf, Amy and me), plus Andrea Armstrong, had a two-hour discussion in which we considered each of the twelve *Holmgren permaculture principles* in turn, with side-discussions on the *Mollison principles* whenever any of these came up. We examined the ways in which each principle was relevant to the Local Food Research project, and looked for parallels in *Participatory Action Research* and other relevant fields of academic study plus contrasts with conventional research focussed purely on academic yields (data, publications, course assignments). We also recorded all the yields from the Local Food Research Project. We then discussed and added to the written notes from this meeting by email. Along with the outputs from the CSCJA study, this led to a list of elements responsible for the success of this project and potentially applicable in other projects. A full transcript of the conversation is included here in Appendix 1. Edited summaries of our discussions on each principle follow.

Observe and Interact

All science is inherently observational, and the project is located in research traditions that particularly stress the need for this observation to be interactive. Anthropology's main research method is known as participant observation - meaning active involvement in the phenomenon under study. Various traditions such as participatory action research emphasise the need for research to involve deliberate interventions, co-designed by researchers and community members. In this kind of observation is a mutual process, in which community members themselves act as researchers, and ideally learn as much as any professional researchers. The benefit of spending time developing relationships before embarking on research collaborations is well-recognised in such research areas, and parallels the idea that a prolonged period of observation is the best way to start any land-based design or intervention.

Capture and Store Energy
Parallel to a rainwater harvesting system or food storage, research directs energy towards the systematic gathering information, which is either stored directly or converted into forms of productive value (e.g. academic papers, research reports, social knowledge and social networks. repositories of data or information of use to the community). Such a project, even if temporary, can create an important focus for energies that already exist but are currently dissipated, converting them into useful forms and/or creating long-term mechanisms for their more effective harvest.

Obtain a Yield
Building on the capture and storage of energy, collaborative research aims to create tangible long-term benefits in the community as its central and most important store of energy. Diversity of yields is important here, as is their distribution (in line with the Fair Shares ethic): in addition to the academic yields required by universities and funders, collaborative research also requires non-academic yields, including the direct creation of social value in the community. The experiences of those involved in a collaborative research project, and the increased capacities for environmentally and socially beneficial work that accrue from these experiences, are also important yields. Stacking and edge are important here - designing multiple functions and benefits into a project, and lots of edges between researchers and community action. In line with the Mollison principle Everything Gardens, this ensures that all participants can flourish, both in their own right and in terms of the benefits they bring to others involved, directly or indirectly.

Apply Self-Regulation and Accept Feedback
Research aims, objectives and methods need to be flexible in order to adapt to unanticipated and changing needs, opportunities and constraints that inevitably arise in the messy and complex situations encountered in living communities and projects in the real world. This might mean compromising on or changing anticipated results, outputs and outcomes, and can also create space for new, better unplanned outcomes and learning to arise. This might conflict somewhat with the expectations of institutions and funders, if these are pre-determined in rigid or otherwise unrealistic ways.

Use and Value Renewable Resources and Services
Grant funding and research opportunities are often one-offs, and not renewable, but can be converted into renewable resources through appropriate outputs that build long-term capacities and structures within the community. This can also include developing frameworks and capacity for collaboration that can make renewable resources (such as a continuous throughout of research students in a university masters programme) available to the community. Working in teams also helps compensate if the involvement of researchers is time-limited, creating scope for long-term collaborators to take over key functions and roles once researchers move on.

Produce no Waste
Ensuring that the research is somehow useful, both in the course of delivery and longer-term, can help generate a sense of purpose for everyone involved. Diverse, living outputs can persist, provide value and develop further beyond the lifetime and social and geographical scope of the research project itself.

Design from Pattern to Details
This is a key difference between conventional research - whose details are usually pre-determined in advance - and genuinely collaborative approaches. Funders and institutions might define broad patterns, in terms of the kinds of projects they want, which researchers specify to some degree in translating them into a framework for collaboration, and details are defined on an ongoing basis according to the specific needs, interests, capacities and other emergent outcomes of the research collaboration itself. Longer term, research processes also reveal the ongoing dialogue between pattern and detail - an important part of analysis is identifying and understanding patterns in the data, which might be explored further and in detail in further cycles of research.

Integrate rather than Segregate
This can be thought of both spatially and in terms of process. Researchers seek to connect and collaborate with collaborators as far as possible, rather than remaining detached. Research processes align as far as possible with what collaborators are already doing or want to do, similar to how a land-based design seeks to align as far as possible with existing ecological processes. It's possible to go too far with this principle, and lose sight of the boundaries, and different capacities, that allow researchers to contribute meaningfully in community settings in ways that are also professional relevant.

Use Small and Slow Solutions
Collaborative research requires patience, particularly in terms of taking time to build relationships, develop a level of familiarity and cultivate trust and mutual understanding. This might not seem directly productive at the time, but is in fact essential to effective collaboration, and creates suitable conditions for more outwardly effective action later on.

Use and Value Diversity
This is another essential ingredient of collaborative research, which seeks to engage the diversity of knowledge, experience, perspectives and interests in the community. Researchers essentially add to that diversity through their specialised skills and access to institutional resources, which complement and work in partnership with that those exist elsewhere in the community.

Use Edges and Value the Marginal
The research process ideally can edge between researchers and their institutions on the one hand, and their collaborators on the other. It can help create edge among diverse people, groups, organisations and so on within the community. Many of these community stakeholders will be marginal in relation to the mainstream - poorly connected with universities, local government, powerful economic actors and the like, many of whom will also be marginal in relation to the experience and lives of community members. Action research interventions that bring such disconnected actors into appropriate forms of interconnection can be powerful forces for positive change.

Creatively Use and Respond to Change
Community processes are inherently dynamic unpredictable - that's what makes them interesting, as well as challenging. Research design needs to include the flexibiliy and adaptability to accommodate and respond constructively to unexpected change, even when that clashes with the expectations of funders; that's often where the most important opportunities for new knowledge and meaningful action arise.

3.5 Design
Based on our reflection and analysis, I devised the following application of the *OBREDIMET design process* in the design of collaborative research projects:

- Observation:
    - Set the design brief: state the desired practical outcomes of the project.
    - List who is involved and what interests and needs they bring.
    - Characterise existing relationships, if any, between the individuals and organisations involved.
    - Identify other potential participants who could have an interest in the project, and consider what needs they would bring.

- Boundaries:
    - Review relevant research in the area.
    - Identify any intellectual/academic constraints: for example, does the research have to lead to certain academic outputs? Are these constrained by factors such as subject area, academic discipline, assessment criteria, or professional demands?
    - List the main resource constraints? These are likely to include funds, and the time and energy of both community and academic partners.

    - Consider any practical and ethical constraints – for example, what activities fit within the practical programmes of community partners, and whether the outlook and aims of community partners raise any ethical implications.

- Resources:
    - Identify existing material resources, e.g. funds, information, access to equipment and facilities.
    - Identify personal resources, e.g. skills, knowledge, time, energy, enthusiasm, interpersonal connections, reputation (individual and institutional – e.g. does association with a university add credibility to a project?)
    - Identify potential resources – e.g. grant funding, study programmes, university outreach and public engagement initiatives.

- Analysis/Evaluation
    - Based on the observations, list the aims and objectives of the project
    - Based on the boundaries and limiting factors, identify the current barriers to achieving these aims.
    - On this basis, create a list of elements: research activities and associated outcomes, both achievable (on the basis of resources currently available) and aspirational (requiring additional resources.

- Design
    - Consider this list of elements through the lens of relevant permaculture principles (the twelve Holmgren principles and main Mollison principles listed above, and any others that may appear relevant). Identify any ways in which these lead to new understandings of the relationships between activities, outcomes, aims and objectives, and the resource requirements for each.
    - Assess to what extent the resources available allow barriers to be overcome, or transformed into opportunities.
    - Identify any outstanding constraints and unresolved needs, and either revise the design brief (intended outcomes, aims and objectives) in order to accommodate these, or incorporate steps to address these into the implementation plan.

- Implementation
    - Devise a clear research proposal based on the design, indicating what academic and practical aims the research will fulfil, and how. For formal research projects, it is likely that two versions will be necessary, a technical document in relevant academic language and a simpler plain English version with fewer or no references.
    - Agree an implementation plan (collaboration agreement) that clearly states the responsibilities of all partners, and what each expects to take from the collaboration, including realistic timescales for each of these and contingency plans in case these can not be achieved.

- Maintenance
    - Revisit the research proposal and collaboration agreement at regular intervals in order to evaluate progress and adjust as necessary.
    - Maintain regular communication among partners, ideally according to schedules/protocols addressed in the collaboration agreement.
    - Meet up and have fun together every so often.
    - Ensure both the process and findings of the research are written up and distributed in order to inform others. Include critical assessment to allow evaluation and tweaking.

3.6 Implementation
The design has been implemented in two major projects so far, a research collaboration with Transition Network (Design 3), and in informing development of the Transition Research Pattern Language (Design 4). It has also informed my contributions to the establishment and coordination of the Transition Research Network, my role in the Permaculture Association's Research Advisory Board, and my work as ECOLISE Research Coordinator, including development of a knowledge commons (Design 5).

3.7 Maintenance
Maintenance has consisted of the ongoing review of the methodology described here through its applications in new research projects (including the major EU-funded research projects UrbanA and CoMETs, in which ECOLISE was a partner) and its refinement in a series of academic publications. In addition to the conference paper already mentioned, I wrote two academic articles on the application of permaculture principles in designing collaborative research: a chapter in the *Para-Academic Handbook Anthology* (2014) and a paper in the scientific journal *Ecology and Society* (2018), and also contributed to a multi-author article Ten essentials for action-oriented and second order energy transitions, transformations and climate change research in the scientific journal *Energy Research and Social Science* (2018). Findings also, to some degree, fed into development of a Co-Inquiry toolkit and other resources for collaborative research produced by the Centre for Social Justice and Community Action at Durham University.

3.8 Evaluation
The design itself has many of the rough edges you would expect from its experimental nature, its location in a novel field, and its partly retrospective nature. This demonstrates the benefits of incremental design, and of conscious and deliberate use of a design process that makes explicit the use of permaculture principles and ethics.

The discussion described in the Analysis section, and summarised in more depth in Appendix 1, records how all of the Holmgren principles and many of the Mollison principles to some degree unconsciously influenced the design of the Durham Local Food Project. The key purpose of this design was, in essence, to make these influences explicit and operationalise them by adapting the OBREDIM method to design of a collaborative research project. This process revealed the following principles to be of particular importance:

- *Integrate rather than segregate*. This is the crucial principle that distinguishes this from conventional academic research projects, which would view community partners as external research subjects and/or stakeholders, rather than integral partners in the research process itself. This was an action research project, in which both Amy and I were actively involved in practical implementation through the work of the Durham Local Food Network and Wilf's intellectual contributions were fully recognised.
- *Use edges and value the marginal*. Integrating research and its practical implementation, and the roles of academic and non-academic members of the project team, made the project an edge between academic research and community action.
- *The problem is the solution.* This in turn meant that what are conventionally seen as the difficulties in collaborative research – where researchers and non-academic partners have different interests, perspectives and agendas – became the core strengths of this project. It derived increased academic value from its practical orientation, and the greater depth of analysis required to address its academic aims put the practical aspects on a stronger intellectual footing.
- *Capture and store energy*. Using the academic project as an opportunity to build *emergy*[2] in the Durham Local Food Network (collated and shared information about the network and its members) allowed this work to step up to another level. In a similar way, systematic

[2]A technical term for structures and processes that enable retention of energy in the system, and its useful application

documentation and analysis of the research process created resources that could be applied in other projects.

- *Use small and slow solutions.* In this way, a modest and bounded project became the foundation for longer-term and more elaborate work.

The permaculture ethics are prominent in the context in which this design arose, of the work of the Transition Durham and the Durham Local Food Project, which aim to: promote more sustainable forms of food production and consumption (Earth Care); raise availability of nutritious, seasonal local food, support better relationships between food producers and consumers, and improve livelihoods and working conditions of food producers (People Care); and ensure fairer allocation of responsibilities and benefits across the food system, for example by ensuring acceptable revenues for producers and affordable prices for consumers (Fair Shares). The research design process also addresses all three ethics, in different ways. It seeks to challenge power imbalances between researchers and community partners, and in doing so ensure that all benefit directly from the research process and the needs and expectations of participating community members are recognised and taken into account (Fair Shares). Key to this is quality of relationships: ensuring that everyone involved in the research collaboration has a positive experience of it, feels looked after and supported, is confident that their needs and interests are recognised and met, and has an opportunity feed their own skills, knowledge and experience into the research process (People Care). Drawing on the skills and experience of permaculture practioners and other sustainability activists creates a new model of participatory research where a research project is not just a way to find out more about permaculture, nor even solely to further the practical ambitions of community activitists, but to create a whole new model of participatory research that reflects the knowledge and culture of grassroots sustainability movements and itself provides an example of sustainability activism in practice (Earth Care).

4. Reflection

This ongoing process was the first instance of the pattern of 'fractal design' evident, to some degree, in each of my diploma projects (see Design 1, Action Learning Pathway). Design sequences nest within each other, so that any complete design is part of a broader design, and includes within it many 'micro-designs', some of them partial, but all capable of being captured as patterns. Some designs become survey phases for others, or generate other designs as their implementation and maintenance phases. In this case, the *Durham Local Food Research Project* that started things off – which we realised only retrospectively was a design project – effectively became part of the survey phase for a later project on Transition research (Design 3). Both of these, in turn, fed into the development of the Transition Research Pattern Language (Design 4) and later informed development of the ECOLISE knowledge commons (Design 5).

This design was thus the foundation for significant learning at at least three levels: in my knowledge of design processes and the idiosyncractic way in which I apply them, in my understanding of the practicalities of designing and undertaking participatory research, and in the specific applications of permaculture to designing and implementing participatory research projects. This learning has been implemented and communicated through the ways it is applied in my work and extensive documentation of that.

Supplementary Materials

- Beacon North East case study of the Durham Local Food Project as an example of Co-inquiry Action Research (no longer available online)
- Cultivating Community, Gardening Anthropology. A paper partly based on reflection about the Durham Local Food Project that I presented at the European Association of Social Anthropologists Conference in 2010.
- Edge, Empowerment and Sustainability. Extended version of a chapter in the anthology The *Para-academic Handbook* (HammerOn Press, 2014) on permaculture as a design philosophy and methodology for collaborative research.
- Designing for resilience: permaculture as a transdisciplinary methodology in applied resilience research. Paper in the peer-reviewed academic journal *Ecology and Society*.