

Appendix 1: Notes from conversation of applications of (Holmgren) permaculture principles in Durham Local Food research project

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Observe and Interact

WR: (repeating statement just made before recording started)

My naïve view of research is a lot is just observation, not interacting

TH: You said that participatory research involves interaction...

WR: You also call that action research, don't you...

AM: and just anthropology...we rarely just sit and stare at something

WR: my university background is in strict science – plant ecology - where you really just observe

TH: there is another field of experimental ecology that involves interaction as a method...in a different way, as Amy was saying Anthropology traditionally involves not detached observation but participant observation, where you actually get involved in stuff...that again anticipates the interactional element of observation.

[in this project] and in PAR more generally there is another element, that is interaction towards co-determined aims, and that being built in to the research process. I think there is an affinity with permaculture there in that there are design aims within the research that are based on observation and extended through the interactions.

WR: I was just reading Jo Miller's dissertation (Anthropology Masters), based on observing and interacting with us at our smallholding. It's quite funny, it's written like a story about him coming out to our smallholding, and clearly the observe and interact is very strong there. It also includes him saying that he has interacted too much, and might have influenced what people are saying...

AA: I find the interact interesting, because in traditional research there can be a level of detachment, even covert observation, but I am thinking how the observe and interact method relates to participation, inclusion: does it mean the same thing in permaculture.

WR: the principles are open to interpretation: the principles were are discussing were written down by David Holmgren, who was there at the start of permaculture when Bill Mollison published his original work, but spent 20 years working on his on smallholding, observing and interacting, before he published this book, having come to new conclusions and refined the principles to these 12. A lot of the older [Mollison] principles can be slotted into these twelve. But a lot of the interpretation is really open.

AA: I am just thinking who is doing the observing: in PAR we are asking where the research is coming from, if it has come from the community...

TH: ...there's a logic to it being mutual research, as opposed to the assumption that research is just one-way, and that's more in line with the community development aspects of research. [in permaculture] it depends how much agency we give to nature, as the natural system you are in is also responding to you: you have an ecological influence that is mediated by it.

WR: is that a bit like the Schrodinger's cat thing...Schrodinger or someone who said that just by the fact of observing something you are interacting with it whether you like it or not.

The other extreme of the science that I was brought up is that it was either observe, or manipulate, which is the classic genetic engineering or biochemistry that I was being encouraged to do. I felt quite repulsed by that because it wasn't about observing or even slightly interacting, it was just like get something out of nature and just like do this to it, make it up..

TH: it's all based on prior observation, or you wouldn't know what to do, but I suppose there is a detachment between the observation and the interaction.

WR: I remember often when I talked to lecturer's about permaculture ideas they would ask me in what way can you exploit nature or manipulate nature in order to make a profit out of it...that was

quite blatant, that was what they encouraged me to do.

TH: Another aspect that occurred to me is that there is a parallel between this permaculture idea of prolonged observation, for a year or so, before you do anything, and the effect of background in this case – how a prior relationship enabled this to work successfully.

2. Catch and Store Energy

WR: Examples commonly used in permaculture would be capturing and storing energy in water, it might be food, might be energy as in solar energy or wind power, things that are necessary for our survival. For example at my smallholding we have no mains water so we have to catch all the water we can – we have a lot of rainwater collection – and no mains electricity, so we have a bit of solar power, and wind turbines, to catch that kind of energy, and obviously we are growing food and storing some of that, so we are storing food energy. How you apply that in terms of this research... energy as information, energy as knowledge?

AM: as social networks, capturing the 'scene' as I call it in my thesis, trying to be a hub of information of sorts

WR: I suppose there is also capturing and storing email addresses to build up the local food network

TH: I suppose that's capturing energy in the sense that an effort has gone into actually doing that and the storage is that you have documented those in a systematic way so that you don't, when you want to communicate with that interest group you don't have to go back out and find them again, you have already stored that energy as a form of organising information.

WR: As the local food directory on the website, is that what you mean?

TH [and] as the register of email addresses, as the research data, as the contacts and so on...even knowing someone involves an investment of energy, just in knowing each other and establishing the common ground, and making the linkages among people, the whole formation of a network, which is mainly stored in your head, in your knowledge, and in your relationships with people.

WR: One of the things that I think is quite important is the second line, that's not written down there, about capturing and storing energy when it is in abundance, so that when you've got a deficit or drought, a lack of that particular energy, you've already stored up your abundance so you can release it from your battery on your solar system, or your reservoir. So that second level in terms of research can refer to an abundance of information coming in...

TH:...and in this case we had a grant and that enabled Amy to put a lot of time into this, so we translated that energy into this stored resource through the development of the network, the website and the insights we derived from having done it.

AM: As Wilf was saying about when energy is in abundance: I certainly felt that when I joined the website team was when it needed me, there was a lot of energy but everyone lacked time, I had that support around me and the timing felt right for me to suddenly appear and do stuff

WR: So in that sense there was already energy flowing around the group but we lacked the capacity to capture and store it...

TH: I think the analogy with rainwater harvesting works really well: it was raining, there was not only the website team there were all the producers and everything else that has been integrated into the network. So like when it is raining on the ground and you have no control (over the dissipation of energy), but when you capture it you have it ready to direct exactly where you want it when you want it.

3. Obtain a yield

WR: That flows on – if you are capturing and storing energy one of the things you have caught is a yield, so you can then

AA: with the research I suppose this is the outcomes and outputs

TH: the data, the outputs, and again in this case the social capital that has been built up, and the personal capacity, and that of the network – Amy's in particular, but I think everyone involved has

advanced their capability in some respect, including us, the website team, and the producers. Another aspect is how the yields are defined and what they're used for. In permaculture something I don't think is in this brief explanation is the desirability of multiple yields. The success of this has been both in identifying common yields, useful from both an intellectual and practical point of view, and in deriving a variety of yields. For example, in a conventional project, the ethnography is a data production process: it isn't a yield in itself, it produces a yield of data, but here it has been a yield in itself: Amy being around as a local food activist, doing what she has been doing and the consequences of that...

WR: Sharing the yield seems important to me, because there is a risk that a report is made, then it just goes on a shelf: maybe a few people see it or read it, but the yield from [Amy's] work has been shared, so a lot more people see it and can access it, use it or develop it, it's kind of like almost an overapplication of that principle.

TH: And diversity of yield too: I'm thinking of the contrast between an agricultural monoculture, where there's only one yield – profit via production of maybe one or two products – whereas in a permaculture project biodiversity, amenity value, quality of life [etc.] are all important yields. In the same way a conventional academic project that's just about academic outputs has this narrow focus on academic data, whereas this one has a much broader range of yields.

WR: Maybe we should propose to Holmgren that he change the title of that principle to 'obtain many yields' rather than obtain a yield. When you read the chapter he definitely talks about that...

TH: And in writing this up and relating it systematically to what he said we can propose advances, because this is a new application of the principles. That's another yield – we should put a couple of pages into permaculture works.

AM: It's also related to stacking: there is so much edge that yield is ultimately going to be greater. I'm not sure if this would be automatic...

WR:...encouraged maybe, more likely...

AM: And the yield personally I feel is far greater than what I could have obtained through a taught masters or a research project that didn't use the methodology we chose: I've got new life skills, new interests, and am more employable I think – which is ultimately what universities should be helping people with at the moment.

TH: A slight sidetrack in terms of principles, it made me think of the everything gardens idea, that everything is interacting with its environment in productive ways, and in enabling everything to garden – to realise its own self-development to the maximum – you achieve a lot of benefits – and I think maybe that applies to you because it's been an opportunity for you to take a role that was more or less defined but that you very much made your own and developed in that: you were able to garden yourself.

WR: a bit of mulching around, the website team...

4. Apply self-regulation and accept feedback

WR: well applying self-regulation is pretty straightforward. It has an overlap with one of the permaculture ethics, which is fair shares, it's about accepting we can't have everything and do everything and that we have to limit our impact on the planet. So applying self-regulation is about self-discipline, and accepting feedback is a form of evaluation, really. Well the worst case scenario is someone criticising you positively and then you adapting yourself accordingly.

TH: There are lots of instances where we've done that – in writing up it might be useful of us to systematically record all the yields, and identify instances of feedback. Like in the questionnaires, things that didn't work as well as they initially might have and modifying them, and in how you approached contacting potential directory entrants. And in a positive sense, things you didn't anticipate doing, like having a market stall and this having all sorts of unexpected yields.

AM: From One North East's forms you might have thought they were disappointed with the lack of jobs I created...

WR: yes that form was absurd...

AM: there was an evaluation form I had to fill in for every person I interacted with for more than two hours or something.

WR: There was an assumption that you would provide training to me...and that you would be training our employees..

TH: I think we've surpassed [their expectations] because we've made a tangible ongoing contribution to a particular sector.

WR: It just shows the difference in our culture...maybe they need to learn about permaculture principles.

TH: well any bureaucracy in having to reduce and generalise to these series of very crude measures

AM: And the yield in the amount of interviews and questionnaires I conducted: I would have liked that to be higher, but I asked as many people as possible and not everyone had free time to be interviewed and things. It was disappointing at the time, but was what I had time for in the end.

TH: and adapting to your environment, in terms of self-regulation and feedback – you did a smaller number of hopefully higher quality interviews, and in terms of how this has advanced the local food sector you might have got more out of this small number of people who are really engaged and got the idea.

WR: to some extent the accepting feedback overlaps with observe and interact, because some of that feedback you're picking up on is like: it doesn't seem like anyone wants to be interviewed, and putting out loads of information about joining the directory and it seems like there is a handful that doesn't seem to want to join the directory even though we know they fulfil the criteria, but we just have to accept that that's their position and where they're at, and that's part of their interaction.

AA: and that feedback is going to be fluid and ongoing throughout the project, not just at the end.

TH: and we did ask people what they want from the directory and modify the aims as we went along, and the form of the website has responded to who has turned up and their ideas, so it's all been a flexible, organic process.

WR: It's a funny one, one of those principles I don't feel entirely comfortable with...but it's good to talk about it.

TH: And its good to look at it and criticise it if necessary, and we're not necessarily going to pin it down today, it's more of an ongoing process.

AA: And when it says apply self-regulation, it's like you can develop self-discipline.

5. Use and Value Renewable Resources and Services.

WR: This is at the heart of sustainability really, includes things like wind, solar, growing more sustainable food...

AA: applied to a project, it could include thinking about the sustainability of the project beyond the term of funding, for example.

TH: It's relevant now in that grant funding, and especially RDA grant funding, is becoming a non-renewable resource, and we were aware at the time that it was most likely a one-off opportunity.

We're seeking to build in sustainability through this social enterprise approach, and looking to generate the resources it needs on a renewable basis through harvesting, in a low-key and sustainable fashion, the cash flows it's going to bring.

AM: I could be seen as renewable: if I were to suddenly depart, relocate there wouldn't be a gaping hole in the groups I've been working with. Because we've been working in teams there would be other people ready to take on from where I've left it. The outcomes are renewable in the sense that I've been disseminating my findings not only as a hard copy of my thesis, but hoping to get it out online as a working document, a living document that will be used, not just an artefact.

TH: And that's creating a living resource also in terms of the tools around it and the website.

Thinking again of the everything gardens principle, a concept I want to explore when we get deeper

into this is that of autopoiesis, or self-development, the idea of maximising everything's inherent potential for growth and development. Taken literally this might seem too narrow to be all that useful, but if we reinterpret it in the light of this principle as promoting everything's 'renewability' [capacity for self-renewal] and autonomy – in other words, renewable flows of matter and energy and information – it perhaps makes more sense.

WR: when we were talking about the website, and trying to source the electricity it uses from green sources.

TH: The service provider he uses 1and1, claims to use green energy, and he does have a south facing roof – [solar revenues] could be an income source for the website team if we act on it before [the FIT review in] March.

This principle seems more productive in a lateral than a literal sense.

AA: It fits with social capital, in terms of being renewable socially.

WR: Is it renewable in the sense that the university is constantly bringing new people in, like the next generation of masters students.

AM: And also that this could inspire somebody someone else to do a similar project.

TH: And more than just setting a precedent, the research framework we have set up could help someone to do that, and be a way to make use of that constant throughput of masters students as a renewable resource, which is also set up in a way that can help them to obtain increased yields, both academic and non-academic.

6. Produce no Waste

WR: Commonly in a permaculture system we're talking about gardens and buildings and food production, encouraging cycling and composting and so on, so something that is an output of one particular system is not wasted, but becomes a resource, whether that's through reuse or reprocessing or recycling or changing its form in some way, or even moving it so it becomes an input to the same system or another system.

TH: Looking at it more broadly, minimising useless outputs and closing loops. Going beyond the physical, information is one of the most important currencies here – one example is the thesis: rather than sitting in the library, never being read, as a one-off activity. People don't necessarily build on their masters thesis, it's not conventionally input or applied in any other way, but that's not true here as we're closing the loop back to the overall project and the local food network both by having built in that application through the website and through [Amy's] continuing involvement and the extent to which it's shaping your current aspirations and how it has developed your skills set.

AM: I think there might have been ways, if I had gone in with presumptions as to what exactly I wanted to find out, that the collaborative forming of the aims and objectives, meant that when I finally wrote the thesis it was about things I wanted to write about because I had been inspired by that process.

TH: and in terms of feedback and self-regulation, I think that for the better it has turned out different from what any of us were expecting because we've allowed it to develop as this organic process.

WR: so there's a link with obtaining a yield, because the yield has become useful rather than a document that sits on a shelf, which could be a waste: it's not really a living document.

TH: and the feeding in of outputs through the co-inquiry case study, which is now on the [NCCPE] website as a case study that can hopefully feed in to other local food research. The development of Transition Durham that has gone on alongside it and a lot of which is directly attributable to Amy's work, and in turn can feed in to the Transition network as a whole. In terms of waste, when someone just does their thesis and that is the extent of their involvement it doesn't really go anywhere. They might have a good time and write an interesting dissertation, but in this case it's being directly input back into the system overall.

AM: emotionally and psychologically, the feeling that I was useful and had a purpose in life helped with my motivation and enjoyment of the whole experience, that I felt I wasn't wasting my time...

TH: or the time of collaborators, which is important and tends to be another unused yield: when people do interviews and so on they rarely get anything tangible out of it, but in this case it's feeding into something that should hopefully have direct benefits for them and their business, and in other respects as well as the values they are putting into it. [not sure what this meant]

AA: and did you manage to use all of the data you generated? Because when you are doing interviews and things some of it doesn't appear in the final thesis, and that's a waste isn't it.

AM: I felt that my examiners commented on how it wasn't sufficiently ethnographic to include 'ethnography' in the title: I felt that I had immersed myself enough that it was ethnographic, but most of my data was actually from questionnaires and interviews. Even though I was in a context of ethnography.

TH: They pointed out that the ethnographic component didn't have any direct contribution to analysis, so there was no yield in that respect, but we've already mentioned how that was crucial to all the other yields so this broad approach we've taken, in all respects but especially in terms of taking multiple yields, meant that could have been seen as a waste if it was a normal piece of academic research, but actually wasn't because it was a source of a great many other important outputs.

WR: asking about ethnography, in Joe Miller's study he just hung out with us and his thesis was like this story about that, he didn't use any questionnaires or anything but he constantly had a pen and piece of paper in his back pocket and would write these quotes down.

TH: So in that case the ethnography was directly productive in terms of the thesis, but there weren't any other yields, apart from the document you got.

WR: the yield for us was that he volunteered for us – it must have been about the equivalent of 60 days – and he was also very entertaining to be around

TH: but you got no extra yields from the fact that he was doing a research project...it hasn't advanced understanding of permaculture, of local food systems, there are no practical applications. Typically they're only read by the supervisor and examiners.

WR: I think reading it, it could have value in terms of defining what is meant by community supported agriculture and people like myself, who are perceived as farmers although we don't see ourselves as farmers.

TH: we're creating a yield for him by writing this up and you using it as a reference point, which might mean that I actually read it! It's a useful point of comparison because it's a more conventional masters study.

AM: And now he's left the country, he's gone home now but he's got his masters.

TH: There's only one yield, which is his masters.

WR: And in the case of your work Amy, it would take us a while to list all the yields....

7. Design from Pattern to Details.

WR: At the simplest level, when you are designing you start with a broad stroke and then work through to the nitty gritty.

On another level it's about identifying patterns in nature and in our behaviour as humans and working with those patterns.

AA: So it covers the research design and the research process: you start with the proposal and then go into detail when you gather all the data and everything.

WR: An example when it wouldn't be designing from pattern to detail would be if the proposal is imposed or manipulating, [if it's] very much directing the situation. That's definitely not the case with the work you did: get to know the team, help form the team, observe and interact with the team, see what the needs are and develop the research aims from that. We just had a broad brush stroke to begin with, that it was something to do with local food in Durham and the website might

be one possibility.

AA: I've just noticed the next one, because it links to that: integrate rather than segregate, so that would be the collaboration.

TH: the contrast you identify there is one of the differences between participatory research, co-inquiry especially, where you are supposed to have this long period of joint reflection, of observation. To an extent you go from pattern to details in all research, but in co-inquiry the patterns are deliberately as weakly defined as possible at the outset, and the details are specified as a dialogue, and that dialogue involves everyone.

I suppose there are different levels of details – from how we first interpreted the funding opportunity from ONE to how we then set it up, then going through the website team and the existing local food network, but it also being refined through the input of participants and collaborators.

You could say that One North East provided a pattern – masters projects with business collaborators. They wouldn't have expected a collaboration like this – we came up with the detail in terms of the nature of the collaboration between the university and Abundant Earth. Before [Amy] got involved our idea was to have a masters studying local food activism, and get someone who can be hands-on, to design a website as that was a priority, and improve the local food network. Another pattern was that we wanted somebody who would get into the applied aspects of the role and take on the activism – [Amy] fitted that pattern, but then the details of how you did that were very much what you brought to it, how you shaped it and in your interaction with the rest of the team.

AA: even in analysing data I suppose you're looking for the patterns initially, then you get to the detail which is the detailed findings applicable to the work.

WR: one of the other ways in which this is expressed is can't see the wood for the trees.

TH: I wonder if data analysis doesn't go the other way: you look to identify patterns, but on the basis of the details...

AA: yeah you could say its a circle continually...

WR: so you look at the details and from them find the patterns, then you look [again] for details that fit those patterns...I suppose there's a risk that you preconceive the pattern you are looking for and then find the details that fit that pattern

TH: the pattern needs to come from somewhere, and there is an extent to which this is an observation for future research, in which we've brought patterns out, and those patterns can help define future research which will explore other aspects in detail.

WR: I'd say one of the patterns we've identified in terms of businesses that have joined the local food directory is that some of the larger, more established businesses aren't interested in joining the directory. Maybe they don't need the publicity, maybe they are just too busy – we're not sure of the detail – but there is a pattern in the results, and clearly the younger, newer, smaller businesses have been keen to join because they've seen it as free advertising. I'm sure there are lots of other conclusions and patterns there.

TH: I wouldn't be surprised if that's more than just free advertising: I'd expect newer businesses to be more values-driven, and for there to be more space to express those values, and a more established business to be more dominated by its own aims. It's a bit like the adaptive cycle, when a system's at it's stable [K] phase, what used to be called the climax, it's all interconnected and there's no flexibility, it's not open to change, but when everything is building up and it's seeking to define itself, there's latitude and flexibility and scope for values to be built in to how it works.

WR: I think there's almost scope for another bit of research on why certain businesses have not joined the directory

AM: yes I think we're assuming that

WR: so we'd have to ask them...I'm not sure they'd even be honest in their replies, how could you be sure they'd be honest when they might just worry they'd be offending someone.

AM: slowly slowly they might come round...we need a critical mass.

WR: It might be a cultural thing – we're looking at the details aren't we?

AM: when their competitors or their friends join, they'll consider it more

TH: or when they see the yields – when the potential financial yield is only a potential, it's a bit of a risk, and perhaps much more useful for a new business than one that's comfortable in a large stable turnover...it's peanuts really so maybe they wouldn't bother wasting their time. Their existing advertising and marketing is probably much more effective...but again, speculation.

AM: You would expect that in the economic climate they would take something free that's offered to them on a plate.

8. Integrate rather than segregate

WR: well that's easy to see – you're completely integrated into the local food website team, and the local food network

AM: socially and value-wise. I think maybe I was a bit passive in that I went along with things. But on the other hand that was because I was open to ideas, and I happened to agree with them.

TH: again that's self-regulation and feedback. I don't know where it comes in to the Holmgren principles exactly but you don't intervene in a system where it doesn't want to change, you look for the areas of flexibility where you can make the most effective change. So you weren't just going with the flow, you were finding areas where your input could make a difference.

WR: There's a little bit about self-regulation there isn't there?

TH: that's part of integration – integration with flows and system dynamics – if you have a river running through your land you design around it, you don't bring in a bulldozer to straighten it or concrete over it. You don't grow something that can't live there. If we think about integration of process rather than just spatial integration it fits.

WR: This has a lot in common with Bill Mollison's ideas about edge – integrating is about putting the bits of the jigsaw together and putting the rights bits of the jigsaw next to each other, so you integrate the bits of the design in such a way that they encourage some of the other principles to come to the fore – like obtaining a yield, capturing and storing energy. Like in the last couple of years we've moved our henhouse to next to our sheep enclosure, so that when we're capturing water off the henhouse the water can be used for the sheep as well as the hens, so I've integrated the two housing systems together and they will over the years I think integrate more and more. Placement of things within a design is quite critical to making that integration happen more smoothly.

AA: Is companion planting part of that?

WR: yeah a lot of permaculture designers use companion planting, and that would be an example of integrate rather than segregate because you're bringing those plants into your garden rather than having a flower garden, and a herb garden, and a vegetable garden, you're overlapping them.

TH: and the broad concept of putting things together, whether plants or any other element, that go well together and mutually benefit each other.

AM: so in the early days when I was learning – well I was learning right the way through – but when I was almost bewildered by the work and wondering where to start as everyone had different definitions about local food and different motivations, so running a market stall with volunteers from the Durham Local Food Network often I'd learn a lot more from the person stood next to me on my side of the stall just by discussing local food, but got to overlap that with discussions with the general public too.

WR: do they appear in your masters, or are they just things that informally shaped you rather than being formally recorded?

AM: yeah well some of them I have used, like in meetings I was so keen to be the activist rather than the researchers in a way, not just collecting data for the thesis, I was taking minutes for the group I wasn't taking minutes for the thesis.

TH: that's stacked as well then.

WR: they are different types of observation through – minutes are quite formal, what was said and

what was agreed, not observations of perception and culture

AM: I did use the discussions in the website team about who to include in the directory and what local food was.

WR: so there's a possibility there, in terms of these principles, that you over integrated and did more interaction and observation

AM: It felt like that when I had to sit down and write a thesis...

WR: you were so integrated you couldn't step out of it and start to write...you couldn't see the wood for the trees

AM: sort of, maybe that's me I struggle with that anyway

TH: getting ahead of ourselves in the principles, using edges [implies] making sure the boundaries are there when they need to be. It probably makes more sense in this case to overintegrate, because in my experience the fact of being a researcher does a lot to segregate you and create a boundary that prevents you from interacting. So coming into the group as an activist, when everyone knew she was a researcher but that being in the background, was probably a crucial part of the success in terms of reconciling these aims and achieving multiple yields.

AA: it's probably that multiplicity of roles that helps you integrate – like if you come in and say I'm a researcher that doesn't help, it could make you more segregated.

WR: the other extreme is a researcher as observer and struggling to interact...

I'm very aware and interested that the principles can be over applied – I'm aware of it especially with some of the older principles like stacking and edge, you can have what I'm calling overstacking and too much edge.

TH...overintegration in this case.

WR: yeah...an example of stacking is not going out in your car to do just one thing, but waiting to do 3 or 4 things, or more common for me is just going from one end of the land to the other, if I have to do that to get something instead of going immediately I might wait half an hour, and most likely 2 or 3 more things will come up that I need to do. But if you leave it too long suddenly you find you've got 5 or 6 things to get and it becomes two journeys or you're carrying too much.

TH: or there could be a danger you don't get the thing done when you need to because you're waiting for the other things to come up but meantime you miss the opportunity.

WR: and there's something quite valuable in going from one end of our land to the other, even if I do only need that one item, because then I have a hand or both free so I'm open to the spontaneous opportunity if I see something that needs doing or picking up, because I'm not loaded up with lots of things already.

AA: that unexpected thing is important in community-based participatory research, you often find that some of the outcomes are unexpected or unanticipated.

TH: also in that group people have constantly referred to appropriate boundaries in relationships with researchers, and not being everything to everybody, and guarding against unrealistic expectations about researchers in terms of what you can do and your capacities.

WR: the expectations and capacities are lateral examples of these principles but I think they're important – like with the 'we've got to save the planet ethic' you can end up stressing yourself out by trying to do too much too quickly.

AM: overstacking is related to excess yields - if I had just used ethnographic data then perhaps I would have had so much of it I wouldn't have known where to start.

TH: generally in anthropology they call this overintegration going native – it has caused problems in activist research in the past when researchers have lost sight of their roles, and failed to produce most of the desired yields.

AA: there's a branch of geography now called guerilla geography where you really play an activist role

WR: is there something similar in anthropology

TH: engaged anthropology..

WR: well that's not as interesting as gorilla geography

TH: there's biological anthropology, a lot of them work on gorillas

there's a difference that anthropologists tend to work across cultural boundaries and geographers less so, so geographers are more likely to have a direct role and direct stake in issues.

9. Use Small and Slow Solutions

WR: this overlaps with stacking, there's a risk of overintegrating, going too big, too quick, doing too much too soon

TH: not worried, for example when the first wave of contacts and enquiries didn't produce much response – again responding to feedback, but also just getting on and being happy with what yields did come and thinking constructively and realistically about [our approach]

WR: there's something there about needing to build the local food network before the website could really take off, and there's a massive frustration about actually applying for grants to pay for aspects of the website...a lottery application that seemed to take ages and then didn't happen, getting money from the council seemed to take about 6 months, then we didn't have a bank account sorted so we had to wait even longer...we were forced to be slow at the time

TH: although we didn't really need the money at the time...

WR: no we're still struggling to spend it a year later

TH: there's a difference in perception with steve, who started a project around the same time as amy and has been providing some IT input, and saw this as a disorganised community process that wasn't getting anywhere very fast

WR: he needed something quick and corporate that he could get his teeth into and we weren't it, is that it?

TH: steve's a good example of overstacking, like many of us, of trying to do too many things at once.

WR: part of obtaining a yield is coming to the end of something, finishing something off. In this case there were multiple yields along the way, and even now you've finished [completed the bigger project] it's still possible for people to see the end results and carry things on.

TH: in terms of future steps, the thesis had to be finished and submitted before those future steps were viable – you need patience and to a certain extent be methodical in your approach. These intermediate yields also give us an idea of what is realistic, and allow us to go step by step and reflect rather than wanting some fantastic website right from the start. When you start it looks like nothing is happening, but now a great deal has happened.

WR: that's easy to forget with the small and slow solutions approach: I constantly find this on our site, I see things and think well, that's not being finished or that needs to be done, and it take someone to visit our site who hasn't been there for a year or two to come along and say how much you have done – that wasn't there, or that's changed...

TH: the longest journey starts with a single step.

Looking at the parallels [with research], we can learn from the literature reviews andrea has been working on recently...co-inquiry, for example, involves a long slow process of getting to know each other

AA: All the literature says that, and that it often underestimates how long that takes

WR: so it's all about building relationships, opening that communication up. That's really valuable, it's a great application then.

TH: and going at the pace that people can [manage]

AA: making it mutually beneficial

TH: in ethnography, a long-term anthropological project if you have a couple of years [for fieldwork], you're supposed to go there and for the first few months just hang out without any particular aim, you're just there so people aren't freaked out by the sight of you. You don't feel like anything is happening but it actually it is

WR: yes those subtle, invisible relationships being built up

TH: then the yields become visible much later on when you have the types of conversations and interactions that could never have happened otherwise

WR: yes because you've built up that trust and understanding

10. Use and value diversity

WR: I think straight from day one with this project the boundary on the local food network had been that there was limited diversity in it, in that it was primarily local food enthusiasts. Even the number of producers and retailers was pretty low, and there was very little involvement from university or academia or professionals in any way. That was a breakthrough in itself, that suddenly there was this opportunity to bring the diversity of the university into that network to support it.

AA: that works both ways when you think about co-inquiry, bringing the diversity of the community into the research partnership.

TH: and you're respecting everybody's skills – researchers have specific skills but they are most useful in complement with the skills base and knowledge within the community, and what everybody has to offer is equally valuable – not this traditional idea that we are experts because we have phds and work at universities.

WR: which is one of the things that made that form for ONE North East so ridiculous, partly their bureaucratic systems and partly the assumption that the university is giving to the community without any suggestion it could be the other way round.

TH: Though it has been useful to the network. Any reflections on what you have found useful for Abundant Earth, in terms of allowing this diversity to flourish?

WR: there have been indirect benefits to abundant earth, like self-publicity to our veg bag scheme – definitely more people in that circle know about what we do.

TH: the broader thinking, beyond the co-op itself the broader circle of volunteers, veg bag customers, it's designed in that you are drawing on that diversity

WR: yes all of us [in the co-op] are quite different really, we've got a lot of similarities but we can have plenty of times when we don't see eye to eye or are baffled by one of the members' opinions or something.

TH: and also that you have such a broad mix of people coming through – volunteers, wooffers, veg bag customers – and I imagine that's a valuable resource for the land and the business.

WR: some people are just coming for the day, some for weeks, some for months.

AM: I must have meet hundreds of people who I've had conversations with about my research

TH: it's interesting how you put that – about your research, not just in relation to data gathering but input into the research process too.

AM: I'm trying to think about overapplication, if we might have had too much diversity?

WR: I don't think so, no.

TH: That could also be the case in terms of overintegration – like we knew that Amy was great as a local food activist, but we also had to remember she's got a thesis to write.

WR: I'm not sure you can have too much diversity...I suppose you could

TH: respecting those boundaries is an aspect of diversity because also that did specify and to a certain extent constrain [Amy's] role in the project, and that was also crucial to the outcome, which depended upon it being your job to produce a thesis. That could have been a barrier if we didn't take the other [needs and yields] into account, but given the way it was designed that was an important part of the diversity. Use and value diversity again links to this idea of autopoiesis, self-realisation and against domination, so when the university dominates a project it is just useless, it can't achieve any practical aims. As just an equal partner, whose particular capacities and resources came in as appropriate, then it had a valuable role to play

WR: there's an overlap there with the fair shares ethic, in that if there is a low level of diversity it might imply one person or one institute dominating, and a power different or power imbalance, but

then the ultimate diversity is that equality. So in that sense you can't have too much diversity because you get to a point where everybody, everything is equal.

AA: that's complexity: a lot of the literature talks about group interaction, group dynamics, and complexity is when groups, communities are working together in all different partnerships. There's all that part of it as well, which isn't saying diversity is a bad thing, but it's just saying it's much more complex. There are lots of personalities to take into account, different emotions; if it's a particularly sensitive research topic it raises all sorts of issues.

WR: What comes to my mind there is the exponential number of relationships according to the number of people...so if you've got ten people all of a sudden there are a hundred different possible relationships, and if you've got 20 people it's not twice the number, it's more like a hundred times.

TH: on the point of domination, you could imagine that had it been a project that was dominated by Abundant Earth – if for the sake of argument you imagined that you had just thought about your direct yields, for example if you had just considered it an excuse to have someone working as a volunteer and not thought about it in any other terms, or if ONE had controlled it in terms of their particular view of economic development rather than just handing over the money and requiring some silly forms to be filled in, or if the council had taken control, or if it had been sponsored by Tesco's or even Riverford...it would have been very very different. There's a huge wealth on that in the participatory research literature, perhaps a more technical/academic angle for us to take forward.

AM: you read about engineers that have done collaborative research, but have effectively just been used as an intern by the company – just free labour really

WR: the opposite of that comes to my mind, when a couple of people recently have been volunteering for us, and they've had so much spare time they've also been volunteering for more official community/voluntary sector groups. One of them was telling me recently that they have had an interview to become a volunteer with that particular organisation – rather than the organisation saying, we have this this and this that needs doing, the organisation wanted to ask them what were the skills you need to learn about, how do you want to develop, you know, so the organisation was trying to find out what it can give to the volunteer rather than what the volunteer can give to them, more like you're not here as a volunteer you're here as an apprentice and we're going to train you up, and whether or not you stay on is another matter.

TH: the New Economics Foundation [do a similar thing] they don't list the criteria they want, they ask you to tell them why you would like to work there.

11. Use edges and value the Marginal

TH: we've covered this to some extent.

WR: inevitably these principles aren't separated..

TH: ...it's very linked with valuing diversity. We've often thought of it in terms of edges...Amy being on the edge between the university and local food network.

WR: Like a venn diagram with lots of overlapping circles. And new ones that have emerged, like the fruit group has emerged whilst you've been involved and you've ended up getting involved in that.

AM: it's not technically a venn diagram, because in a venn diagram you can't have different forms of overlap. So once you involve your third circle, you can't do it statistically...so this is more of a cluster diagram that shows [qualitative] overlap between the different groups, showing the whole scene as overlapping.

TH: that's an effective demonstration of edge

valuing the marginal...again it's well-established in community-based research, a lot of which is linked to empowerment and enfranchisement

AM: originally I was rather obsessed with the policy side of thing and seeing how policy is failing us, but then I changed approach totally and just looked at the grassroots activism, so that's marginal in the sense that it's just everyday people doing everyday things, it's not just the powerful or the

government.

WR: I agree, but it's funny being in the middle of it...you can almost see all these institutions that are ignoring local food as being in the marginal area

AM: marginal to us!

WR: things like the sustainability team in the county council they've supported us but I almost think you should be doing a lot more on this, it should be part of your day to day living. Things around what we have to get sustainable are like food, shelter, warmth, fuel, energy. These are like main users of our carbon economy and they're doing nothing about food at all – it comes down to us. Sort of valuing us as the marginal because we're grassroots, but at the same time they are marginal because they aren't doing anything about it.

TH: we are valuing that margin because we have gone to them when it's been useful. You might also have thought before this collaboration the university was marginal, in terms of its contribution to community action, apart from this college, the CSCJA, and some other bits [which are marginal relative to the university]...and this is a marginal project within the research landscape.

AM: yes when doing my literature review I was really struggling, because I thought no-one's done anything like this really – or maybe a couple – so I wondered how this fits in to the literature.

Amongst anthropological literature about ritual of food and taboos

WR: quite different stuff

AM: climate change is quite a new thing in anthropological research...

TH: yes, though it is growing, mostly indigenous responses to climate change and more recently on sociocultural critique in the light of climate change

WR: does amy's work count as studying indigenous responses to climate change?

TH: certainly grassroots responses. In my book I define indigenous as people who retain economic autonomy from the national and international financial systems. So you could say that to the extent that a lot of the economy of abundant earth relies on barter, voluntary work, it's sort of neo-indigenous. There's a deliberate marginalisation in what you've done, as I interpret it – you've not gone and got jobs, in order to live and work according to your values you have to marginalise yourself because the system contradicts those, and the rest of us are working within it to varying degrees.

It's interesting the point you made that the marginal very much depends on perspective, so you create edges everywhere. From the point of view of the mainstream, the centre, the margins are very well defined, but from your point of view they are very different.

WR: Another example to my mind recently has been the economic crisis and the looting – who's at the centre there, is it the bankers or the people who are suffering financially, or the looters, who's in control now? Who's at the centre and who's at the margins now – it's part of the world being turned upside down, even if only temporarily.

TH: that's leading us on to the last one...

12. Creatively Use and Respond to Change

WR: this is one I've not quite got my head round as a permaculture designer. I don't think I've actually read this chapter in holmgren's book!

AM: adaptability...

TH: creating resilience...

WR: there's something about preparation for, not eventualities but possibilities.

TH: it's part of going with the flow – when there is a change in circumstances there is an opportunity to change things, to do things differently...

WR: ...rather than seeing it as a problem, something positive

TH: making the problem the solution too, rather than always attempting to maintain the same organisation – the point we made earlier that a stable institution seeks to self-perpetuate rather than to fulfil externally defined goals, tends to be inward-looking rather than outward looking. I'm

struggling to think of any concrete applications in this project, except the responses to feedback as part of getting to know the context better rather than any change

WR: I suppose the lottery example is one, when we expected to get that funding and then didn't. It was a bit of a shock at the time, because we'd put a lot of time and energy into it...

AM: we'd done two at the same time, overlapping, so at least one would go through

TH: was one of the responses there to pay for programming and things like that?

WR: yes, well the lottery funding would have employed two people part-time to do all the work

TH: and one response to that was to get the team of computing students in to help with programming ...we didn't know that existed before, but that meant we used a renewable rather than a non-renewable resource, rather than paying we've got this connection which we can hopefully renew every year. We're hoping to turn it into a renewable project by developing the income streams that can pay for Neil's and [Amy's] input, but those needs will be lower than they would have been if we had shelled out and paid for everything, we might have had a less efficient business model and not tapped into this free, renewable resource.

WR: and when we found out it wasn't going to quite work out with steve it meant that neil had to step up to the opportunity to learn how to do that programming himself and take a massive lead on that, and inevitably if we'd paid somebody he probably wouldn't have that skill now

TH: so we've captured and stored energy too, in terms of the skills he can now apply

WR: it's been quite empowering in that process too – I'd never messed about in the back end of a website before myself.

AA: [one parallel in community based research more generally] is the unpredictability, awareness of the unexpectedness of what can come out of the research process and having a more dynamic response to change, rather than being crushed by it

TH: there's a big overlap there with responding to [accepting] feedback.

AA: so there's a big contrast with traditional research where you try to predict everything and have expected outcomes.

TH: and building that in to the research, in that it has to be responsive to unexpected aspects of context and so be more responsive to change

WR: so there needs to be something in the original aims of the research about that.

AA: yes well this is difficult from an ethical perspective – to get institutional review board approval you've got to try to anticipate ethical issues, and very often you can't...

TH: and it's often a difficulty with grant application, when you are supposed to tell them everything you are going to do, and you're thinking well we don't know what we're going to do! And if you don't do that it gets chucked out because it looks vague...so either you have to get your community partners fully engaged – and if you get them fully involved before the start you've drawn a lot on their time and energy [at a point when] you might not get the yield, because you might not get the grant, and even so you're not going to know everything. The best way I have found is pretend you are more certain than you actually are, to give them what they want.

AM: My proposal said I would collect statistical data and analyse it on CO2 emissions or something, but because I found that farms really weren't that bothered about the number crunching of how much carbon is involved, they just said, we know we're sustainable because we use sustainable practices – they didn't need the confirmation of the statistics to confirm that. So I adapted to what I found and changed the process.

TH: I'd also see that as the response to feedback – it's only a couple of years, and there weren't major changes in the context. I wonder for example if there was carbon accounting around farms and they needed to produce figures about emissions then, now there's a network with a relationship with the university, we could talk to researchers who have those skills and implement it through the network. It's a principle that seems more valid over decades than a couple of years, so its perhaps conjectural at this point.