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A Pattern-Generating Tool for Use in Semi-Structured Interviews

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Abstract

This paper, the first in a pair, describes the development and use of a research tool designed to not only derive the “usual” research patterns from analysis and synthesis of data, but also to extend that research outcome into useful lessons and instructions for others to act on in the non-research world. Research is essentially about finding and explaining patterns to help us understand phenomena and to measure similarities and differences. Pattern also has other useful attributes – as tools, templates, and instructive advices – that tend not to be given as much attention in research. The tool discussed in this paper seeks an easy-to-use “close fit” between these two uses of pattern. It enabled maximum engagement by the research participants, in-depth exploration of the area between the abstract (theory) and the concrete (practice) of the issue at hand, and development of useful instructive advices for others to use. It comprises an original design that can be adapted for use in other research with similar aims. A second paper, in a subsequent edition of The Qualitative Report, describes the development of the subsequent “pattern language” of instructive advices.

Keywords

Pattern, Qualitative Research, Research Tools, Semi-Structured Interviews, Dialogue Space

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A Pattern-Generating Tool for Use in Semi-Structured Interviews

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This paper, the first in a pair, describes the development and use of a research tool designed to not only derive the “usual” research patterns from analysis and synthesis of data, but also to extend that research outcome into useful lessons and instructions for others to act on in the non-research world. Research is essentially about finding and explaining patterns to help us understand phenomena and to measure similarities and differences. Pattern also has other useful attributes – as tools, templates, and instructive advices – that tend not to be given as much attention in research. The tool discussed in this paper seeks an easy-to-use “close fit” between these two uses of pattern. It enabled maximum engagement by the research participants, in-depth exploration of the area between the abstract (theory) and the concrete (practice) of the issue at hand, and development of useful instructive advices for others to use. It comprises an original design that can be adapted for use in other research with similar aims. A second paper, in a subsequent edition of The Qualitative Report, describes the development of the subsequent “pattern language” of instructive advices. Keywords: Pattern, Qualitative Research, Research Tools, Semi-Structured Interviews, Dialogue Space

Objects and events, along with their arrangement into a seemingly endless array of shapes, relationships and repeats, fill our world. Getting to know these repeated arrangements – or patterns – is our way of understanding and working with that world, using pattern as a mental mode of operation rather than as simply a material object or arrangement. Two ways in particular assist us. One is to make visible some otherwise “hidden logic” between elements or processes, to allow us to then negotiate and work with those processes (bringing pattern to the fore, as “figure”). The other is to establish a “neutralising backdrop of ordinariness” against which the exceptional we seek, that which is different, stands out, pattern as “background” (Araujo, 2007, pp. 11-12).

In this way, pattern is fundamental to research – the diligent and systematic enquiries we make to determine trends, make predictions, or just get to know the world better. Braud and Anderson (1998) note that “The test of the validity of [any research] exercise will lie in its ability to discern pattern, to offer coherent understanding of human experience at its most profound” (p. 224). Pattern is also central in both principle approaches to the development of research findings – deductive and inductive reasoning. In deduction, patterns are identified from the research data and then compared with the predicted pattern of a hypothesis or established theory. Inductive analysis also discerns patterns from the research data, but not via a comparison with predicted patterns sitting “outside” of that data. Rather, induction looks deeply into the data itself to find *connections*, between phenomena of equal importance, or between a puzzling item and other items in the data, or within the *whole* of the data itself. Induction is fluid and continuous, with identified patterns subject to change as new data become available.

There are though some critical - and curious - deficiencies in our use of pattern. There is relatively little assistance on how to find patterns and how to create them. Discussing pattern in design, Justema (1976) notes that “After the five or six centuries during which designer-craftsmen have made patterns, the mechanics of pattern construction... remain strangely

mysterious...” (p. 2). In research, the literature tends to be restricted to the discernment of pattern within data sets, and then usually with emphasis on only two means of doing so – observation and intuitive awareness, neither of which are given much elaboration. For example, Strauss and Corbin (1990, p. 130), when describing the role of pattern within grounded theory (and defining pattern as “repeated relationships between properties and dimensions of categories”), list three ways to identify patterns. All seem to rely on some form of “intuitive insight,” not further explained in any detail, where researchers either:

1. “immerse” themselves in the data for an extended period and “can’t help but notice the differences or emerging patterns,”
2. engage in an exercise of deduction following detailed analysis of the individual attributes of the matter, and/or
3. come to a conclusion through “fortuitous chance,” an insight prompted by an external source, or by suddenly noticing something different in the data.

Another deficiency is a lack of the use of pattern in the development of recommendations and lessons from research findings. In effect using pattern as a guide or template or recipe rather than simply as a tool in the discerning, via analysis and synthesis, of information. We now have no shortage of information about things, and that information is becoming increasingly accessible to all. Our task now is to develop ways to process that information into practical knowledge and to encourage ourselves to act on that knowledge.

New Additional Ways of Looking at Pattern

There is now a growing commentary on how an extended view of pattern can play a role in this task (for examples, see Appendix A). A leading practitioner in such uses of pattern is the architect Christopher Alexander, who has worked over 40 years to distil the complexities of our built and social environments into a series of manageable-scale lessons or templates for the way we construct and manage those environments, and which he refers to as patterns. Combined, they form a “pattern language” (for an example, refer to Alexander et al, 1977). Alexander actively seeks out those patterns that make us comfortable and have a close fit with desired behaviour, and are also generative, so that the action-ing of individual patterns coalesce into whole environments that support our total well-being. A key attribute of such pattern languages is that they are to be developed collaboratively so that they are understood and used by all not just by design professionals, and as such would yield more inclusive results than if developed only by small specialised groups.

As such, Alexander’s work appeared to provide a “good-fit” model to guide a research project I was to undertake that sought to similarly distil the complexity of the concept of sustainable development into practical actions able to be undertaken by individuals in their everyday lives in the spirit of “thinking globally and acting locally.” However, a curiosity in Alexander’s work soon became evident. Despite his stated intention to make the design of our environments accessible to all, he has yet to produce a workbook condensing his practical knowledge about how to actually discern and work with pattern using this approach (as compared to his extensive publications on the pattern languages themselves). Mollison (see Appendix A), while contending that pattern requires skills of “sophisticated design,” also notes a general lack of models for the application of pattern to “practical life matters.” He lists the following areas requiring further work to better realise its potential (Mollison, 1988):

1. a more general understanding of pattern, including models in general and as exhibited within natural phenomena,
2. a linking discipline applying to the pattern design process and to the transfer of patterns between disciplines, and
3. the development of guides for the application of pattern to assist in achieving desired ends within everyday life. (p. 71)

Mollison's own use of pattern in permaculture, or "permanent agriculture," does include some guidance for the discerning and use of patterns in this way, but it is quite specific to its purpose – the derivation of patterns from the natural landscape and their application in cultural designs. It meant that for my project, I had to develop a new purpose-designed methodology that would both access the data patterns and assist in developing the "lesson" (or template) patterns I sought to generate. This paper (and the sequel "Title" forthcoming...) describes this methodology with a view to encouraging others to explore its application to other research projects. Since my research, a project to develop a pattern language relating to "civic intelligence" has been published in the United States by the Public Sphere Project. The project used web-based systems to source the individual patterns from a wide range of international contributors, to establish guidelines for contributors, and to make them widely available for use (<http://publicsphereproject.org>). Although submitted patterns must demonstrate a grounded-ness (and hence practicality), the project differs from Alexander's processes in that it is reliant on individual authors to achieve this, and there is no particular requirement that the individual patterns themselves be developed via participatory processes with users.

Developing a New Research-Based Pattern-Seeking Tool

My research utilized an environmental education project ("Living Waters–Living Communities") that worked with voluntary participants keen to improve the environmental impact of their behaviors. This project used discussion groups based on the learning circle methodology whereby the participants took it upon themselves to research best practice and then discuss out problems or other issues they were encountering when seeking to put this into practice in their own lives. Their efforts allowed me to access the complex whole that is sustainable development *and* to generate useful lesson-patterns for others. In particular, they shed light on the on-going and everyday practical dilemmas that arose from their personal commitment to live more sustainably. The research (Paine, 2004) comprised:

1. observation of group discussions about their efforts,
2. structured one-on-one interviews with 29 participants, and
3. following this, further engagement with 10 participants as a group, working with the resultant data to generate "lesson-patterns."

This paper describes the design of the tool for the one-on-one interviews, in particular its explicit orientation to the generation of data patterns that would then be easily developed into subsequent lesson-patterns for use by others. This latter stage is described in a subsequent edition of *The Qualitative Report*.

The "Pattern-Making Game": The Need for a Purpose-Designed Interview Tool

An initial design of a tool for the one-on-one interviews resembled a structured questionnaire. This had immediate limitations. It was closed-ended, and yet the participants' approaches to the dilemma of living sustainably were, as evidenced from their group

discussions, wide open. A questionnaire was unlikely to reveal the rich range of participants' experiences, expressed in their own words. I was also mindful of a need in social research to transcend the needs of the researcher in order to better reveal those of the (other) participants. McKnight (1991) for instance, in promoting what he calls asset-based community development, suggests social surveys aimed at facilitating change should be designed to seek out what the participants have to offer, not what can be offered to participants. Further, it contained no explicit orientation to the whole of the participants' experiences, thus replicating a deficiency within our current kit of tools which tend to dissect. As Kellehear (1993, p. 1) notes, questionnaires are a "blunt instrument" with which to read the complexity of human living.

However, an unstructured interview also did not appeal. The research *did* go beyond the needs of the interviewee. I was also uncomfortable at the need to place too much of my own interpretation in later analysis. I wanted the interviewees themselves to distil, as far as possible, the essence of their experiences that might be of use to others. There was also the realization that, having placed themselves in a public position as "practitioners," the interviewees might be tempted to be less critical of themselves than what might otherwise be the case. The approach needed to retain rigor, "testing" to an extent the interviewees' experiences.

A new purpose-designed approach was developed. It seeks to discern both the whole and the parts of each participant's experiences, and work equally well in the data collection, the analysis and synthesis, and the subsequent pattern-writing components of the research. It comprises a semi-structured discussion and a mind-map. The design of the semi-structured discussion is of most interest to this paper. It is facilitated by a specially-designed graphic tool to which written responses are added by the respondent. Conceptually this tool:

- First establishes two "poles," in effect "prising apart" the "whole" that comprises sustainable development as described in that term's linked pair of words: the abstract universal of "ecologically sustainable living" (i.e., the word "sustainable") and the concrete particular of the participants' "current living impact" (i.e., the word "development").
- Second, it establishes a "middle ground" or "dialogue space" between these two poles, allowing and stimulating discussion and revealing lessons about the inevitable tensions and ambiguities present within this whole (i.e., the *practice* of sustainable development), as experienced by the participants themselves.

This middle ground was of particular importance to my research. It comprised the "gap" between our concern for the need to live more sustainably and our current lack of rigorous action in establishing a regime of sustainable development to address that concern. It was hoped that discussion "within" this gap would reveal a series of patterns derived from the experiences of the participants themselves about those things that were either assisting or hindering them in their efforts to live sustainably. Making explicit these patterns for use by others might assist in moving sustainable development from its current unresolved state to common day-to-day practice. As noted by Jim Ireland of the WHO Collaborative Centre for Environmental Health at the University of Western Sydney during a trial of the tool, "It is the conversation between the abstract and the concrete, and often prefaced with the word "but," where the gains can be made." Williams (2002), a psychologist, has referred to a similar space between what he calls the rational mind and the emotional mind, and representing the "wise mind."

The interview tool has six steps. The graphic component comprised a sheet of paper (A3 size to allow sufficient room for participants to draw on) with seven blank text boxes aligned down each side of the page, with a large area of blank space in the middle. It was neatly folded so that it appeared as A4 size and with the text boxes turned outwards. A question was added to each side above the text boxes.

1. First, the participants are handed the folded sheet with the first question to the top. This question, also asked verbally by the interviewer, asks them to ‘name seven things that, to you, best characterize ecologically sustainable living for the society in which you live.’ The participants are asked to aim for a single word, or as few words as possible, and write each in a text box.
2. The participants are then asked to turn the page over. Here, they are presented with a similar arrangement. This time they are asked to ‘name seven things that best characterize your current living impact on the earth’, also in a single word or as few words as possible. Particular emphasis is placed on the words “your” and “current.”
3. Next, they are asked to open the folded sheet (in my project, this was often the first time they knew it was larger than A4). Participants are instructed to draw lines between the boxes on either side of the page where they think there are links. Different colored pens are used for links showing a “consistency.” and for links where there is “no current consistency.” Another color is available for links not fitting these two categories (these color options are also displayed on a separate sheet of paper to assist).
4. Participants are then asked to describe the reasoning behind each of the lines. Where necessary, clarifying questions are asked by the interviewer. Notes are taken during the discussion. Each line is also progressively numbered.
5. When it appears that most of the information about the lines has been obtained, the participant is then requested to think of a word, or as few words as possible, to sum up the discussion and write it on the line, prior to moving on to discuss the next line.
6. When all the lines have been discussed and key words allocated, the participant is requested to hold out the page in both hands (as if taking a deep breath, thus also assisting to “re-energize” themselves if necessary) and think about all the key words, and then summarize them in another word at the bottom of the page.

The interview concludes by asking participants to mind map on a new sheet of A4 paper the summary key word which is written again, in the middle of the sheet, listing ideas, concepts, feelings, and so on as prompted by that word using lines, circles or the like to show any relationships. Any comments are recorded. Where necessary, questions are asked about the inclusion of certain words, or about the way the mind-map is drawn. An example of a completed “pattern-making” tool and the subsequent mind-map is included in Appendix B. In my project the interviews generally lasted for between one and two hours, with the average being 1¾ hours.

The Design of the Interview Tool: Particular Influences

In addition to the importance of exploring this “middle-ground” and a desire to maximise participant engagement and ownership, and as such a need to be interactive, there were two particular influences for the adopted design:

1. the idea, suggested by Christopher Alexander (Alexander, 1979), that a “lesson-pattern” comprises the resolution of a set of forces, and
2. Personal Construct Theory, developed by the psychologist George Kelly (1955).

These influences were not sequential. Rather, they coalesced at a similar time to form an initial structure subsequently refined through review and discussion.

One goal in any problem-solving exercise is creating an accurate definition of the problem itself. But how does one do this when the complex nature of many problems means they are not singular or linear, but made up of any number of forces pushing each other around? Alexander’s solution was to conceptualise problems as “pressure patterns” generated by those forces. A problem is properly defined (i.e., the “shape” of the pressure-pattern is correct) when these forces are accurately delineated and hence in static tension with each other, and thus able to be given due attention. The next step is to derive, from this pattern, a solution. Alexander also conceptualises such solutions as a pattern, now directly related to and in effect embedded within the tensioned “problem” pattern. But this time the pattern comprises the *resolution* of those forces - pattern as “generative rule.” “Forces have a characteristic pattern,” he says, “and the good form [i.e., solution] is in equilibrium with the pattern, almost as if it was lying at the neutral point of a vector of a field of forces” (Chermayeff & Alexander, 1966, p. 109).

I too would need to discern such tensions if I were to establish similar “lesson” patterns from my research. I considered that if I could establish with my participants a similar set of forces operating within discrete, manageable-sized components of sustainable development, we might then also be able to discuss the attributes, helpful or hindering, of the resultant “tensioned field” (or pattern) these forces established. In the interview tool, these forces are represented by the lines drawn by the participants linking the various boxes on either side of the page (see Appendix B).

Here the work of George Kelly (1955) comes into play. Kelly’s proposition that we come to understand the world through dichotomous constructs coupled with his Role Construct Repertory Test provides an example, both theoretical and practical, of Alexander’s field of tensioned forces. Kelly uses the Role Construct Repertory Test as a tool to elicit from his patients the dichotomous constructs they hold about particular matters. It requires patients to nominate a “construct” and then a “contrast” in response to questions (in Kelly’s work these relate to the influence particular people have had on their life). There are differences though: Kelly establishes a bi-polar spectrum, while Alexander’s approach can have as many “poles” as applicable to the problem at hand; Kelly’s interest is in the relative values that patients placed on the two poles, whereas Alexander (and me in my own research) is interested in what might be revealed in the (tensioned) middle-ground. In this inquiry, I was interested not only in any negative tensions that might arise from opposites but also, and more importantly, in gleaning lessons from where (in my tool) the abstract and the concrete have come into some symmetry. Structurally then, the tool sought to establish not so much dualities but rather the nature of the tensioned links themselves as identified by the participants. It was here that important “lesson patterns” might arise.

A second point of interest in Kelly’s tool was prompted by comment by Bannister & Fransella (1971) that its structure had a close correlation with the theoretical propositions (i.e.,

Personal Construct Theory) against which the data it generates is analysed, meaning that the need for further “intermediate” working with the data is reduced. This characteristic encouraged me to design a “pattern-making” tool that also had close resonance with the background theory I was using (Alexander’s pattern-language). I wanted the data collected by the interview tool (which would form the “ingredients” of the intended pattern language on sustainable development) to be expressed by the participants themselves without the problem of “misinterpretation” by me as the researcher.

The third point is Kelly’s notion of the “enquiring man” – that we all actively experiment, in the nature of a scientist, with our predicaments. As such, individual constructs should be seen as fluid, including (in Kelly’s field) those made by patients undergoing analysis. This fitted well with the characteristics of my participants, who were actively engaged in a continuous process of practice and learning. There has been commentary by others (e.g., Maddi, 1989) about the efficacy of Personal Construct Theory and citing various limitations. However I considered that these concerns did not raise sufficient reason to not use those parts of Kelly’s work chosen to inform this research – and which was adopted not so much in terms of its theory on personality but as a tool to assist the gathering of interview data. Further, Kelly’s work also has its adherents who have adapted it for use within different fields (e.g., Bannister & Fransella, 1971; Kalekin-Fishman & Walker, 1996).

The dynamism of the “enquiring man” supports the intention that the interview tool be interactive and participatory. The resultant design means that both the participant and the interviewer have before them a visible summary of the evolving discussion. As such it provides continuous feedback that can stimulate further reflection on the information being given. It also addresses a limitation in my initial, unsatisfactory attempts in drafting an interview design - a lingering tendency to want to impart information to the interviewees as a continuation of the “educational” aspects of their learning circle, rather than opening the opportunity for the participants themselves to impart information to *me* first, as part of a collaborative discussion and reflection.

Resolution of Outstanding Design Issues

As the design of the tool progressed and following trials with colleagues, a number of lingering issues were apparent. Appendix C details the ways in which these were addressed.

Positive Attributes of the Resultant Interview Tool

The interview tool proved successful in defining issues and drawing out discussion. Importantly, it is able to both maintain a view of the whole and open up the “joints” of this whole to explore the intricacies of what might be revealed. As finally developed, it:

1. Is both structured and semi-structured. It allows both direct questioning (the initial filling out of the seven boxes for Questions 1 and 2, and the requirement to summarise the various discussions in key words), and indirect questioning (the wide-ranging discussion around the lines drawn in the middle of the page).
2. Establishes a “middle-ground,” allowing elucidation of any “tensions” or “easings” between the real-life dilemma of reconciling the conceptual (the notion of “ecological sustainable living”) and the concrete (the practical “current living impact on the earth”) – being where resolutions to outstanding dilemmas are often found.

3. Produces both “gut” reactions (the initial quick filling out of the boxes in Questions 1 and 2 in as few words as possible) and reflective responses (in the subsequent discussion and the concluding mind-mapping exercise).
4. Is challenging, and therefore likely to be interesting and thus elicit thoughtful and creative responses.
5. Is graphic and participatory, so that the participants see the results of the interview being built up before them as a “rich picture,” thus allowing them to look back at, reflect on, and add to the discussion.
6. Retains for the participant a visible ownership of the information. Further, the continuous summarising of the discussion into key words by the participants themselves reduces the possibility of the researcher mis-representing the data during later analysis.
7. Allows the interview data to be transcribed in a (3-column) format that correlates with the design of the tool itself. This simple layout assists review during analysis.

Research as Trickstering?

A final aspect of the interview tool became evident after the interviews were underway: that in the particular ordering of the questions and by hiding the intention to compare participant’s answers until a later stage, it contained, in a sense, a trick. However, once I realized this, I considered that this was not a trick in the sense of a deception or ruse. Rather, it was a positive attribute in that, unlike a questionnaire format, the interview could not be completely “read” by the participants at the beginning. Like a game, it revealed its format and intentions gradually. In doing so, it achieved both interest for the participant and, importantly for the rigor of the research, a degree of the unknown such that participants were less able to provide responses they might have thought were expected of them.

Carl Jung (1964) and Briggs and Peat (1999) have described the positive side of “trickstering” and trace its manifestations through time and cultures. Braud and Anderson (1998, p. 84) transfer this idea to research, suggesting that trickstering can “open gateways of awareness and insights” in both the gathering of data and its analysis. Based on these understandings, my initial concern about this aspect of the interview tool dissipated. In this I was also influenced by the positive, un-prompted comments that were received as the interviews progressed (Box 1). Most got the “trick” in the tool once the two halves of the page were opened out – but this seemed to generate interest in what would come next, not annoyance.

Box 1: Some Participant Responses to the Interview Tool

- How did you think of it? It’s a really good game. It really makes you think.
- This is very interesting. Did you design this? You don’t know as you are going along. ...
- An incredible process. Very powerful. It’s great. One of the reasons I like it – it deals with the visual side of stuff – everything is so text based in our society – it’s interactive. And it doesn’t alienate other learning styles. Prompts the subconscious as much as the conscious.
- At the beginning I thought: uh oh, more paper work. Then it gave me the opportunity to think about the positive things. Thought provoking.
- Well, I’ve found this therapeutic ... challenging as well.

Once all the interviews were completed, subsequent reflection on the process revealed other lessons about the tool and the research process in general. These are described in Appendix D.

Conclusion

The pattern-making tool and overall interview process described here were purpose-designed for a particular project. However, and although similar on first appearances to standard “gap-analysis” techniques, the tool is more wide-ranging and could be easily used for collaborative data collection in a wide range of other research. Its design is also likely to yield a greater richness of data.

The design can also be amended to fit different needs. In the subject project it proved successful in the participatory prising-apart of a complex real-world dilemma by tensioning in a positive and realistic (not contrived) way desired outcomes against what is actually happening – and then exploring the in-between to find and discuss consistencies or inconsistencies. Given that the participants themselves were able to express their own experiences, the data set from the discussion is entirely practical, allowing for future translation into useful lessons. Where relating to assessed consistencies these would comprise descriptions of things that others in that situation or with similar aspirations can adopt. Where relating to assessed inconsistencies they would comprise lessons for remedial action.

Alternatively it is possible in other projects for the researcher to determine the content of one or other of the poles. For example, if the intention is to investigate actual experience or action against a known or pre-determined set of desired outcomes, the “desired outcomes” pole could be established by the researcher. In this situation the interviewee would fill out the “what is actually happening” pole before the sheet is unfolded to reveal the (already completed) “desired outcomes” pole. Conversely, a set of actions or behaviours may be known and what is being sought is an appraisal of why this situation has arisen. In this situation the “what is actually happening” pole would be established by the researcher and the interviewees would be asked to detail desired behaviors about the particular matter before being shown the already completed “what is actually happening” entries.

The second in this pair of papers will describe the subsequent process to translate and express the “middle ground” data patterns about consistencies and inconsistencies into another type of pattern not yet commonly used in research – pattern as “lesson” or template for others to use in applied research and problem solving.

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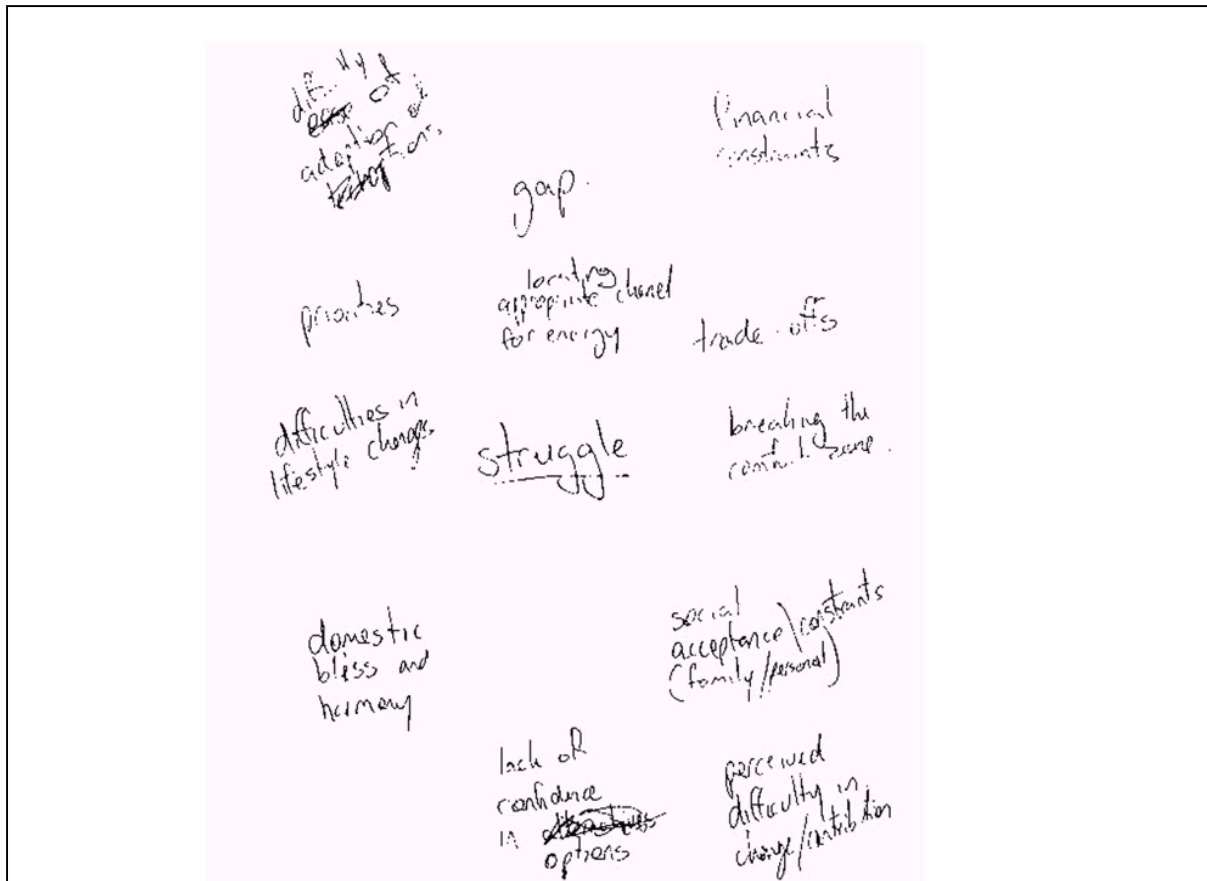
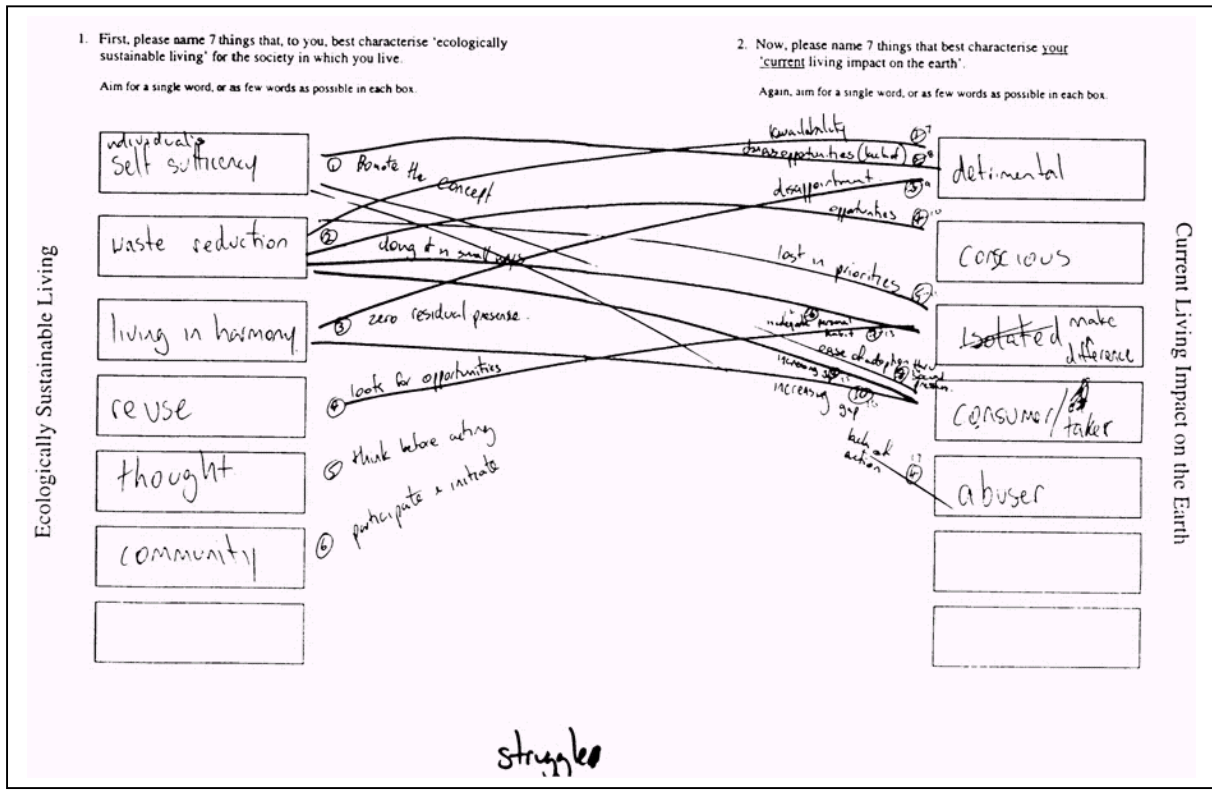
Appendix A

Some commentary on an extended role for pattern within research and practice

Mollison (1988), an educator who has used pattern in both “conventional” analysis and synthesis modes as well as also to derive guides for action contends that “...patterned and rhythmic knowledge is unforgettable; [while] symbolic knowledge [as in the alphabet] is unmemorable;” and even that “applied patterning” can provide an “antidote” to current limitations generated by the failures of “rote learning [and] linear thinking” (Mollison, 1988, p. 67). Similarly, futurist Anthony Judge (Goonatilake, 1998) in advocating the need for a broad sharing of knowledge (from philosophy, the sciences, folklore and “traditional wisdom”) to support the development of new ways of responding to multi-disciplinary and multi-faceted problems, proposes this be done via a global “pattern database” – drawing on pattern as a way to distil, order and synthesise large masses of information while maintaining meaning and legibility to a wide audience. What Araujo (2007, p. 12) describes as the “connective and interstitial” nature of pattern, making it particularly effective in generating “interdisciplinary” outcomes; and what Jason Silva (n.d.), futurist and “epiphany addict,” refers to as “expanding our associative net” – teaching ourselves to look for patterns across seemingly disparate areas.

Appendix B

Completed "pattern-making" tool and mind-map from one participant



Appendix C

Resolution of outstanding issues in the design of the “pattern making” tool

Issue	Discussion	Decision/Design Change
<p>1. What to request in Q.1 and Q.2 –<i>ideas</i> or <i>feelings</i>? (I.E., should participants be asked what they <i>think</i> or what <i>feel</i> about the matter?)</p>	<ul style="list-style-type: none"> • The first draft confusingly mentioned both “feelings” and “concepts.” • Participants should be able to respond with what they are most comfortable with. 	<p>The questions avoided either term, by asking for “seven <i>things</i> that, to you, best characterise ...”</p>
<p>2. For Q.1 and Q.2, should the participant or the interviewer write the words onto the page?</p>	<ul style="list-style-type: none"> • Getting the participant to write the words gives “ownership.” • Writing can help the thinking process. 	<p>The participant was asked to do the writing.</p>
<p>3. Should the question seeking the abstract or the concrete be asked first?</p>	<ul style="list-style-type: none"> • The actions requested in the “concrete” (or practice) pole would be more personal to participants and a more relaxing way to commence the interview. • However, the potentially more fluid responses to the abstract pole might then be open to manipulation – with participants “tailoring” responses to accord with what they had written about personal action. • There was a logic in commencing the interview from the broader perspective. 	<p>The interview commenced with the abstract pole (as Q.1).</p>
<p>4. Should a <i>single</i> key word be insisted on, or will a phrase be acceptable?</p>	<ul style="list-style-type: none"> • Requiring one word only might be too difficult. • But a phrase is too wordy. 	<p>Single words were strongly encouraged, but multiple words accepted.</p>
<p>5 Should the participant be offered a page of key words or phrases to choose from to answer Q.1 and Q.2?</p>	<ul style="list-style-type: none"> • This was suggested as easier for the participant, and for later analysis. • But this risked pre-determining responses, perhaps making respondents less interested in exploring their own thoughts and actions, and lessening the “true” nature of the inquiry. 	<p>It was decided not to offer a list of words to choose from.</p> <p>(In the event, even participants who initially said ‘I’m not good at words’ found after the first couple of lines that subsequent key words came quite easily – sometimes even writing a key word before discussing the line).</p>

<p>6. How many boxes of keywords should be sought in Q.1 and Q.2?</p>	<ul style="list-style-type: none"> • The greater the number of boxes the longer the interview, perhaps to the annoyance of participants. • The first draft had 5 boxes plus 3 optional ones (in dotted outlines). • However, more in-depth responses might be obtained if participants are “pushed” beyond their “comfort zone.” 	<p>Seven boxes seemed reasonable to:</p> <p>(i) fit comfortably on the page, (ii) not appear too daunting, and (iii) elicit responses beyond comfort zones.</p>
<p>7. How many different categories of connections between the boxes should be sought?</p>	<ul style="list-style-type: none"> • More categories add potential “richness” – but is more work for the participant and in later analysis. • There were a number of attempts to draft suitable categories: <i>consistencies</i>, <i>gaps</i>, <i>blocks</i>, and <i>dilemmas</i> were considered. 	<p>Two categories were chosen: <i>consistency</i> and <i>no current consistency</i>, plus a further, open category if participants thought these were not sufficient.</p>
<p>8. Should the discussion about the connections between boxes seek suggestions as to resolutions for any gaps or “blocks” identified, or should it only be about the dilemma/tension?</p>	<p>The explicit aim of the research was to seek patterns that contained advice as to the dilemma <i>and</i> the resolution from the perspective of the participant.</p>	<p>The discussion sought each participant’s experiences, plus suggestions as to resolutions.</p>
<p>9. What should be my response if participants, in response to the request to draw lines between boxes where they saw connections, state: ‘but it is all connected’?</p>	<ul style="list-style-type: none"> • This is the dilemma of systems and holistic outlooks. It had to be anticipated this outlook would be held by some participants. • But a myriad of connections would prolong the interview and may not elicit the depth sought (connecting all the boxes would yield 49 lines). 	<p>This perspective needed to be accommodated; with participants advised to draw in all connections they saw.</p> <p>(In the event, only two participants drew a large number (42 and 45) of connecting lines. The most common number was 12 to 15).</p>

Appendix D

Observations and lessons from the process of conducting the interviews

Observation	Lessons and Conclusions
<p>About half the participants found it difficult to confine themselves to key words, though if pressed, they got better at it.</p>	<ul style="list-style-type: none"> • The distilling of one’s ideas is not easy. • It is worthwhile being insistent – it simplifies the data, and can lead to better insights for the participants as they generate “essences.”
<p>Those who drew many lines, often stating that ‘everything is connected to everything else’, generally did not have much more to divulge than those who only drew a few lines.</p>	<ul style="list-style-type: none"> • Maybe even large entities, even with an holistic view of things, can be distilled to a manageable number of attributes (patterns).

<p>Often the choice between “consistent” and “inconsistent” connections (lines) did not represent true feelings. Some put down both lines in parallel.</p> <p>Further, even when a definite choice between the two lines was made, subsequent discussion did not necessarily follow this categorization. Rather consistencies and inconsistencies were discussed together.</p>	<ul style="list-style-type: none"> • Things are not either/or entities, but continuums. • Representing things as either/or is an easy way out when pressed, but does not reflect actual understandings when tested.
<p>Even so, people did not use the line color given to cover such ambiguous situations.</p>	<ul style="list-style-type: none"> • We are not used to <i>representing</i> something (the middle, the continuum, the ambiguous) that is not a duality.

Author Note

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