

Revisiting the term “research culture”

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The term “research culture” is widely referred to, especially in relation to the “new universities,” polytechnics and professions in transition from a non-research environment into one that demands research activity. However, the term “research culture” remains ambiguous. Do we mean an organisational culture in which research plays a significant role? Do we mean “the way we do research round here?” Or do we mean a culture of the type found in a petri dish – an environment in which research grows and multiplies? Using a seminal work by Schein (1991) as the foundation, this paper examines “research culture” in the same way that we examine “organisational culture” - a notion widely studied and written about. The author found this approach to be enlightening and capable of providing deeper understanding of research culture. Taken paragraph by paragraph, it is claimed that this paper provides a useful tool for contemplating and analysing the nature of specific research cultures.

As organisational theorists and practitioners, these days we know a great deal about organisational culture. Much of this understanding comes from anthropology and sociology and the study of culture per se. Essentially, it is argued in this article, that what we mean by “research culture” can be viewed in the same way as “organisational culture.” In the transitional tertiary education institutions we hear speak of “developing a research culture.” By this, do we mean, incorporating research into an organisational culture that has not previously considered that activity as part of its culture? Do we mean, that within an organisational culture that can be characterised as having a distinctive teaching sub-culture and management sub-culture, we wish also to establish a research sub-culture? Or, is the concept similar to that of a culture in a petri dish - an environment into which we toss research and expect it to grow, just as we expect bacteria to grow in a petri dish? In this paper I shall follow the lead of Schein (1991, originally published 1981). Schein is one of the foremost names in the study of Organisational Culture. He is by no means the only one, but does seem to be cited in management literature more than others. His 1981 article is considered a classic on the subject, later expanded into a seminal textbook (Schein, 1985)

Lets begin by examining what we mean by this term “**research culture**” and then examine the parts of the definition we identify.

It might loosely be defined as “**the way we do research round here.**” When speaking of a research culture there is a common perception that we mean, having an organisation culture where research is a prolific and dominant feature. Under the definition provided above, however, we refer more to the cultural characteristics of the research process and research choices within the institution.

Commandeering another definition: “*A common perception about research held by the organisation’s members; a system of shared meaning about research.*” (Based on Robbins, Waters-Marsh, Cacciope and Millet, 1994)

Following a definition provided by Hauer (1993) we might interpret research culture as: *the many, often subtle, 'point-sized' rules and customs of research activity picked up and repeated by organisational members until their actions 'blend' into a collective attitude. Within this community the accepted research culture - even if it is unconsciously accepted by many - defines how each individual should think, act and make decisions about research.*

Schein (1985) indicates that when talking to colleagues they agree that Organisational Culture exists, but can't agree on what it is. Schein goes on to list 6 common meanings found in the literature. If we, again, retranslate these in relation to research, we arrive at the following:

1. *Observed behavioural regularities* when people engage in research, such as the language and the rituals used.
2. The *norms* that evolve in research groups or research environments.
3. The *dominant research related values espoused* by an organisation such as 'applied focus' or 'leadership in qualitative research.'
4. The *philosophy* that guides an organisation's policy towards research.
5. The *rules* of the game for getting along with research in the organisation, "the ropes" that a newcomer must learn in order to become an accepted researcher.
6. The *feeling or climate* about research that is conveyed in an organisation by the physical and administrative facilities as well as the way in which researchers in the organisation interact with others.

Using Schein (1985) as the template these might be summarised into the following definition.

A pattern of basic assumptions about research - invented, discovered, or developed by a given group as it learns to cope with the external and internal problems of research - that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to research problems.

Research culture reflects the values, ideals and beliefs about research within the organisation. They, in turn, are reflected in the research behaviours, research actions and research symbols of the organisation. Just as the "teaching culture" of the institution is found in the teaching values and styles, and the "management culture" found in the managerial values and styles then the "research culture" would reflect the research values and styles.

Pattern of basic assumptions

An important start point is that research culture is manifested in overt behaviour - what we can see. But research culture goes deeper than behaviour. Indeed the very reason why we talk of a notion such as research culture is that it is too difficult to explain the research that goes on in organisations by staying merely at the descriptive behavioural level.

Research culture refers to a pattern of basic assumptions about research. Not only is it the study of what researchers do, but **why they do it**. When we speak of why, at one

level we may find ourselves discussing their motives, but at a higher level we may find ourselves discussing their overriding values and philosophy of research.

Values are seen by Schein as taken for granted, invisible, preconscious concepts held at the upper, superordinate levels of an individual’s cognitive system, and tangible manifestations of those at the lower, subordinate levels - visible patterns, artefacts, symbols, objects. This conceptualisation is very similar to the hierarchical cognitive systems that are central to Personal Construct Psychology (Kelly 1955).

Eden (1978) sees personal values as sets of constructs that encompass our ideals, objectives and goals. He sees these as being hierarchically organised, and manifest as “role” - the roles we play. Eden’s use of the terms goal, objective and ideal, is rather subjective, and doesn’t necessarily conform to other people’s use and meaning of these words.

However he chose these terms simply to have labels he could apply to the levels in the value system hierarchy, which he construed as reflecting short-term, medium term and long-term intended outcomes. Reinterpreted in research terms the **lowest** in the hierarchy that defines “**research values**” would be research *goals*, which have **short-term, immediate intended outcomes**. Next research *objectives* lie in the **middle** regions of the hierarchy, and are **long-term intended outcomes**. **Highest** of all are research *ideals* which are ultimate pursuits, which **may or may not be attained but which are deemed worthwhile pursuing all the same**. This entire system would be reflected in the roles that individuals engage in as researchers.

Some of my own work as an organisational psychologist has been involved in helping people clarify their personal value systems, and helping organisations recognise those values **that are shared or common** in order to identify their definition of their culture or their community. The same procedures could be used to help identify research ideals, and express those ideals in terms of long term objectives and immediate goals. At an even lower level, we would contend that these are manifested in role - the research roles that people play and indeed, whether or not research features in their roles - in terms of overt research behaviours they may engage in, symbols they may use, objects they may manipulate to reflect those higher values, and environments they may approach or avoid.

From the definitions already provided then, we can see that identification of shared or common research values, and research behaviours that manifest these, means much the same as identification of the research culture.

Identification of these is really quite simple. To identify values we might carry out a procedure called “**Value Laddering**” (See Hinkle 1965, Little 1983, Hill 1994, 1995). This procedure simply involves asking people to list what they do, ask why they do what they do, and then continued asking of related **why** questions. We follow this with “**Act Laddering**” - basically the process, having asked “why” is to then ask “**How**” do you do it, intend to do it and how else might you do it? **How questions and why questions**. Laddering technique is presented in more detail as appendix A.

In summary, **a basic ingredient of research culture includes the system of shared values, or shared basic assumptions concerning research.**

Cultural paradigms

Different cultures use different models to make sense of their world. They have some culturally different constructs for looking at the world. We refer to notions such as “socially constructed realities” - sometimes likened to socially or culturally tinted dark glasses. These are an element that differentiates cultures. We refer to this as “world view”. Research is an area where different paradigms currently do co-exist, as we move from modernist thinking to post-modernist. Whether an institution practised predominantly positivist research or predominantly constructivist, or realist research would be a manifestation of the research culture.

A useful summary of the varying research paradigms can be found in Perry, Alizadeh and Riege (1997), Slife & Williams (1995) and also in the opening pages of Miles & Huberman (1994). It is not possible to do justice to these paradigms in this paper, and the reader is referred to these summaries. It should be noted, however, that these are just a few of numerous possible examples of the different ways cultures might create order and consistency to view and make sense of research in their world. The ways they use models to express their world. But, no culture’s model is more or less correct than any other’s. The bush people of Papua New Guinea practice under their own unique scientific or research model - and it works for them. Their model may not be acceptable in the western university research laboratory, but a model that is aptly suited to the world of the bush people.

The given group

Since culture must be seen as a group phenomenon then research culture must also be seen as a group phenomenon. Indeed one of the common construals of “developing a research culture” seems to be that it means moving from being the domain of a sparse number of isolated individual researcher projects to an environment where research is so pervasive that it appears to be the activity of a large number of interconnected colleagues. An activity that is pervasive among a department, project team or entire institution. The strength of a research culture is viewed as a product of how similar the researchers in the group are in terms of their values, how stable the group is, how long and intense its history and tradition. Groups might be viewed as problem solving collectives of people. Research culture may be viewed in terms of the values and assumptions that the group develops in the process of handling research related problems.

Problem solving is an important aspect of research behaviour. It may be pertinent to briefly address problem solving.

A problem occurs when we’re not on the same wavelength with something in our environment. When we can’t locate a concept to think about the circumstance, or where we’re using the incorrect concept. That's why it’s a problem. When we’re doing a crossword puzzle and can’t answer a clue, its because we’re not using the same concept as the puzzle maker. The same with a riddle.

The process of problem solving is essentially the same as the process of research (or is it vice versa). It involves discovering the concept that is applicable. It often begins as trial

and error. But more than just random trial and error, there is some pattern to what we do. We trial and error, by generating ideas, hunches (creative acts), putting them to the test and seeing if they work. If they work once we might try them again. But what worked the first time may not work the second time - and hence the problem has not been solved! We generate some more hypotheses, and this usually requires some creative thinking, some lateral thinking and perhaps some intuition. We put our new hunches to the test. Sometimes they work, sometimes they don't..... until at some point we have an “Ah! Ha!” experience. We see the connection. From that point we generate pointed hypotheses, and they work every time. If so, then we've solved the problem.

This is similar to Kelly's (1955) notion of the creativity cycle in research, as described by Bannister (1981). Kelly named the form in which we under take construing of events, or inquiry, as the creativity cycle comprising, circumspection, pre-emption and control. Research follows a cyclical pattern as follows:

- Circumspection: A phase that holds no rules, and which allows for imagination, fantasising and daydreaming as legitimate research tools.
- Pre-emption: The phase where we invent, choose, discover and begin to unravel the kind of question we want to inquire about.
- Control: A phase where we put our question into operational form, then put it to the test so as to seek a specific answer, to see if our hunch is confirmed or denied.

A key point is that it is a cycle, and not a one shot “do it and write it up” process - it might even involve smaller sub-cycles within the context of a larger overall creativity cycle. It represents a cycle of thinking and dreaming, selection of key notions, hypothesising, planning and then action - engagement in some overt research behaviour such as writing a proposal, or collecting data. Action is followed by further circumspection, pre-emption and so on.

Problem solving, lateral thinking and creativity are basically linking together two or more hitherto unconnected concepts. Some people appear better at it than others. Schein refers to problem solving as involving some inventing, discovering and developing. Schein indicates that to solve a problem the group tries out various responses until something works. They continue to use it until it ceases to work, then try something else. And these solutions to problems become “the way we do things round here.” In some cases, research may be “one of the ways we solve problems round here.” Or maybe, we refer here to “the way we do things round here to solve research problems.”

Some organisations generate the scientific hypothesis testing model presented here. That is part of their culture. Others may operate by a different paradigm - say collective brainstorming. That is part of their culture. For others, problems cause anxiety. They may have a culture of procrastinating in the hope that the problem will rectify itself.

Schein notes that this “way we do things round here” may persist as ritual, long after the actual problem has been solved. For instance the **handshake** has persisted as a ritual when two people meet. It was originally a gesture designed to signify friendship and diffusion of hostility - since it was designed to occupy the right hand - the sword drawing hand - thereby removing the **problem** of being stabbed to death by a person smiling at you, nodding their head in a friendly manner while holding your left-hand. In an established research culture we can expect to find research rituals. These might take the

form of rituals to gain approvals or funding, annual registers of publications or even the graduation day events surrounding PhD's (the last to be capped, the first to leave the auditorium following the staff, the gesture to join the staff in a brief procession, the departmental luncheon to celebrate the researcher's achievement).

For there to be a research culture there is need for cognitive order and consistency - common language about research, some semblance of shared agenda and shared categories of perception. These might be depictable as "cognitive maps" - ways of thinking about research. Research culture formation involves shared cognitive maps. It is quite apparent that one of the difficulties we experience in our attempts to establish a research culture from new is the lack of common language and shared construal of research. Indeed a series of research methods workshops that I attempted to conduct with colleagues in 1996, failed to be productive since sessions frequently regressed into arguments about the roles of specific methods in the various research paradigms, debates about what the term "research" actually refers to and philosophical disagreements.

Much of this relates also to **territoriality**. We refer here not only to physical territories but also psychological territories. Where one piece of knowledge, one research paradigm or the right to engage in a specific type of research is one person's territory and not another's. *This is an information technology way of researching - not a management way - leave us to it. Get off our territory - (but give us money to proceed)*. Boundaries to territories and territorial behaviours are also part of the manifestation of an organisation's research culture. Do we have cross departmental collaborative research teams - or is everyone hidden away, researching on their own in closed offices? What does that suggest about the research culture of the place? Do we have jealousies or criticisms from one academic discipline about the research methods used in another discipline? What does that suggest about the research culture of the place? Do we have enclaves or in-crowds of researchers who shut others out? How do we treat those enclaves - with tolerance or irritation? What does that suggest about the research culture of the place?

Leadership plays a crucial role, to provide guidance when the habitual ways of doing research no longer work. When there is newly discovered ambiguity or when the research environment changes. A group's research problems are usually of the task oriented and person oriented type - a common conceptualisation found in the study of group process and leadership. There tend to be internal versus external problems too.

External: These are the problems of survival and adaptation in relation to the external environment. This relates to the role that government, other funding agents, competing institutions or technology plays for instance, as well as other contingency constraints.

Internal: Problems of internal integration - such as learning the research language, learning the boundaries, learning the rules of the game, learning the rules of organisational politics and so on. This highlights that research culture is a learned process. The principal source of this learning comes from significant others, perhaps role models. We adopt some behaviours and opinions as "the right ones to have round here" and others as the "wrong ones to have round here." In time we may internalise these, and take ownership for them - this is when they become basic assumptions as mentioned earlier in the article - cultural elements that seem to have always been part of us. This

process of learning is known as socialisation. In the traditional university research environment these significant others may have been thesis supervisors or research team leaders. In institutions of higher education, that do not have a post-graduate programme but which are going through transition from non-research to research requirements these role models are not as readily apparent. It has been conjectured that such institutions might employ internal research consultants, leaders or mentors to fill the vacuum (for example, Hill and Barnett 1997).

Schein proposes that from the problem solving process we develop assumptions that work well enough to be considered valid. Basic assumptions that we take for granted - and for Schein that “**taken for granted**” quality is the key quality of culture - of the research culture too.

These assumptions are so taken for granted as valid that we teach them to new members - we seek to socialise new members to also take on these assumptions. This point suggests the important role to be played by the induction and socialisation process of new staff members in enhancing or establishing a research culture. If a research culture does not exist, one way of establishing one is to socialise the concept of a research culture through the staff induction process.

It is interesting to note that in academic disciplines and professions endowed with a strong research culture (for example psychology, chemistry or biology), undergraduates are formally taught research methods. Research is seen as a valid subject matter to teach to new members hoping to join the profession - namely the students.

Before continuing any further, we must distinguish **dominant culture, sub-culture** and **counter-culture**.

This paper has been largely concerned with discussing an organisation’s **dominant research culture**. The generalised basic assumptions, ways of doing research and core of common meaning across the whole organisation.

Within dominant cultures we find **sub-cultures**. That is any group within the dominant culture that has in some respect a different value system. Sub-cultures provide options within dominant cultures. In society in general we find youth sub-cultures, with the language and dress-style of the day. In our organisations sub-cultures may be found in the form of different departments, or academic disciplines. Sub-cultures make plenty of sense, since different types of people, with different configurations of upbringing, experience, personality, interests and motives tend to congregate towards specific families of occupations and professions. People who hate mathematics and precision wouldn’t choose to work in quantitative scientific fields. People who hate physical labour would seek to avoid it. Consequently there will be different research related values, held in some degree of commonality within sub-groups of an organisation. There may be a discernible Science Department research culture, compared to the Accounting Department research culture and the Design Department research culture. It is interesting to note that in the academic and research domain these subcultures may be reflective of the dominating school where staff members received their degrees, and also reflective of discourse positioning.

Some subcultures do not sit along with or comfortably within the dominant culture. They might actively and aggressively fight against it. We term these **counter-cultures**. Counter cultures are often seen as threatening to the dominant culture, and can be powerful change agents if they gather sufficient momentum. Insufficient support and momentum, and they'll continue to fester away within the dominant culture.

Within educational organisations, counter-cultures may be those departments or groups of researchers who buck authority and thumb their noses at the dominant culture. They may wish to change the dominant culture. In recent years academic disciplines and science have experienced a paradigm crisis. Post-modernism and particularly fields such as critical theory, discourse analysis and feminist research have indeed been seen as a threat to logical positivist scientists.

How might we investigate research culture?

Schein takes the view, supported by the current author, that an organisation's culture is inherent in it. The trick is to identify and decipher it. Much organisational culture literature discusses instead, the creation, development or change of an organisation's culture. I believe there's more to be gained from identifying the inherent culture and attempting to get that to work optimally for you.

It seems to me that the same applies to research culture. An organisation's research culture is inherent in it. The trick is to identify and decipher it. Much talk about research culture literature has connotations of the creation, development or change of a research culture - or do they mean a culture like that found in a petri dish? There maybe something to be gained from identifying the inherent research culture and then getting that to work optimally for you - perhaps making the inherent research culture more highly valued and more active

Deciphering an organisation's research culture means more than identifying surface assumptions. If the research culture investigator is a member of the overall dominant culture, then identifying an organisational research culture probably means identifying the sub-cultures that render this organisation different from the dominant culture and different from other organisations. The particular pattern of values, perceptions, and behaviours that express the research culture will not leap out at an outsider, will not be given on a silver platter, since they are elements that are taken for granted. For an outsider to identify an organisation's research culture might therefore involve identifying the research assumptions and activities of the sub-cultures (different departments, different academic disciplines) in the organisation and then analysing the similarities and differences in these. This would probably serve to not only identify but also legitimise the research sub-cultures within the institutions dominant research culture.

To decipher an organisation's research culture may require an organisation intervention or at least a specific investigative project to that end. But the investigation needs to be of a particular type, which we refer to as organic (in contrast to mechanistic). These are terms coined by Chris Argyris (1976) to refer to the nature of the relationship between the investigator, and the organisation.

A mechanistic investigation is characterised by the investigator taking a prominent role in defining the goals of the project, maintaining the power of expertise and therefore maintaining some distance, aloofness from the client or participant organisation. Here the investigator is in control - controls the amount of participation of the organisation members, and sees the organisation as a source of assistance. The client organisation is expected to be an information giver, and any feedback to the organisation is intended to inform them.

In contrast, an organic investigation is characterised by both the organisation and the investigator defining and modifying the goals. The investigator's position as expert is neutralised by acknowledging that he or she is a stranger in the system - members of the organisation themselves are the experts and are invited to participate. The organisation should feel just as responsible for the project as the investigator. The investigator facilitates the process and asks questions, rather than trying to provide answers. Feedback to the organisation is intended to help them to develop rather than merely inform.

It is suggested that to work within a research sub-culture, say a specific academic department, and to seek to decipher their research culture requires an organic rather than mechanistic approach. It requires a high degree of collaborative effort, participation and input from all sectors within the culture. An alternative to an external investigator could take the form of an internal participant-observer.

Some additional elements on how to identify and analyse an organisation's research culture.

- 1a. **Examine the socialisation process of new members and its relationship to research:** Discuss how this happens. What new members have experienced? Does research even get mentioned? How heavily is research emphasised compared to, say, the teaching role? What did not happen in the early times of a person's employment? How, when, where, who and what of the socialisation process. Does this discipline/profession teach research courses to its potential new entrants?
- 1b. **Pin-point the status of the organisation in its life-cycle:** Is it too young or insufficiently through transition to have developed a discernible research culture? Is it in decline, or on the brink of decline? Has it stagnated? These all give clues as to what we might expect to find in the research culture. For instance a stagnating organisation may exhibit the research culture of "yesterday's people" doing out of date research and achieving little kudos. A growing or re-developing organisation may have a culture of innovation and flirting with change or new paradigms.
- 1c. **Examine the "selection self-selection" process.** What type of people is the organisation seeking to recruit into the organisation? Researchers, practitioners or teachers? What sort of people choose to apply for jobs with this organisation and why (self-select)? What sort of people avoid it and why (self-de-selection)? Researchers? This means examining outside the organisation too, to determine outsider's perceptions of it.

2. **Explore critical research incidents.** Seek similarities and differences in those incidents that explain them.
- 3a. **Examine research beliefs, values and assumptions.** This might be achieved by the value laddering technique, used to depict people's cognitive maps. This might mean asking people what research they do, why they do it then looking for common or shared features. (See appendix A)
- 3b. **Identify and examine the organisation's symbols, rituals, physical objects they choose to manipulate, characteristic behaviours, stories, legends, heroes, language and physical layout, territorial markers concerning research.** An organisation's research culture is manifested in these things. Organisations abound with stories and "heroes" or "stars" - some for positive reasons, some for negative (villains). What do these stories tell you? Does research feature among the stories, the stars and the villains? Has the research culture developed sufficiently to have stories and stars? What are the characteristic actions and styles of the key role players - such as leaders?
4. **Research climate survey.** A possibility would be to formally survey the internal and external environment for research perceptions. Such a survey might take the form of various dimensions within an organisation and examine how insiders and outsiders rate the organisation on these dimensions. Is the research process too rule bound? Do supervisors and Heads of Department know what, if any, research is going on? Does the organisation resource research ventures well enough and so on?

There is, however, a distinction between research culture and research climate. Research Culture represents those features that are seen to be relatively stable and enduring over time - from year to year. (Like the organisation's "research personality."). Research climate, by contrast is more like the mood of the organisation at present. It might change from season to season, from beginning to end of semester, from project to project, from old boss to new boss. It might be a function of current enrolments and workload - a factor that may not be present next semester. It might be a reaction to the latest announcements about government funding to tertiary education institutions.

5. Explore all this and synthesise it into some sort of depiction of the culture of the organisation.

Summary

We tend to speak of establishing a research culture without really taking any notice of the research culture that is already present. It is suggested that institutions such as the New Zealand polytechnics are probably not sufficiently through their transitions to have clearly identifiable research cultures. It is contended here, that those that have had degree programmes in place for three to five years are likely to have some semblance of a research culture forming.

Sometimes the concept of research productivity seems to get in the way of research culture, and some ambiguous tension develops between these two concepts. I think it is assumed that a healthy research culture will display healthy productivity. Healthy productivity in the form of one prolific international publishing star may not be reflective of a healthy research culture (although of course, that star would be a manifestation of the research culture).

This paper concludes by asserting that in addition to dreaming up initiatives to establish and enhance a research culture, it may be as productive to decipher the already inherent research culture of the institution, the culture that the organisation members already feel ownership for, and to then exploit the strengths of that culture. In New Zealand organisations we have a tendency to dwell on weaknesses and to pay relative neglect to strengths. In terms of research culture we tend to notice what is not present then devise strategies to establish them. If there is lack of productivity and lack of enthusiasm, then we are tempted to implement strategies to motivate productivity and enthusiasm. We have been much less astute in noticing what is already present and in establishing strategies to make mileage and progress out of those strengths.

I think also, the trick is to not only identify the manifestations of the research culture, but to also promote and publicise them. Those with responsibility and accountability for research in the institution would do well to have the research stories told, to publicly congratulate the heroes and stars, to manage research related symbols and so on. For instance, in the time I have been with my current employer I have achieved two reasonably prestigious international publications - yet very few members of the organisation are aware of that. In that case and elsewhere in the institution insufficient public mileage has been made of the international research players and the incredible value they add to the institution's reputation.

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Appendix A

Laddering technique

In more detail the procedure might look like this. People might be asked to list the research projects that they have done recently, are currently engaged in, and which they intend to engage in the near future or have dreamed about. They might be asked to list research projects of colleagues until we have between 7 and 12 items on the list. They would then be asked to compare and contrast these projects, three at a time, to elicit their research-related constructs - the way they view and make sense of research. The respondents would be prompted to ensure that the outcome was a bipolar construct or bipolar dimension (for example they may respond "I was the project leader vs. I was a team follower".)

Each individual would then be asked to imagine they had the opportunity to engage in two research projects. They must choose one as the appropriate one to engage in. They are to imagine that the two projects are identical in every respect, except that one is characterised by one pole of the construct (say, "I am the project leader") while the other is characterised by the contrast pole ("I am a team member, follower"). Having chosen one as appropriate, the respondent is asked why they made that choice ("Why did you choose project leader?" "*Because I am the most capable researcher around here and therefore should lead the project.*") The respondent would be asked further why questions until a response had been reached that expresses their general philosophy about research. "Why is that of importance?" "*Because, without my leadership I doubt that the project would get completed*" "And why is that important?" "*It is important that we be seen as finishers and not procrastinators or drop-outs?*" "Why?" "*To enhance our credibility as an academic department.*"

We might stop at that point, having identified that *credibility* is an important long term value or ideal. By asking how questions, we can see that it is a value that can be achieved by *ensuring research projects are seen through to completion*, in turn achievable by having *capable project leaders*. We might view these as medium term objectives.

We might continue from that point by asking "How can we achieve that?" "How else - what other alternatives are there?" and "How would we identify a capable project leader - what characterises these?" These questions are likely to generate responses that can be fashioned into more immediate goals. *By appointing Mary as the project leader. By ascertaining who the most capable researchers are. By checking researcher's track record of completed projects and perhaps dissemination of those projects. Hence, check their cv's. Hence, actually seek out those cv's. By not engaging an academic for the role, but an experienced project manager.*

Respondents would repeat this process 7 to 12 times to form an elaborate, interconnected cognitive map of research values, running from their general philosophies about research, through intermediary constructs and objectives down to actions and short term goals that can actually be engaged in. To identify the research culture, several of these cognitive maps, from several individuals, would be analysed for their similarities and differences. If you like, examined for their shared research agenda and their personal research agenda. The shared agenda would be an expression of the research culture, while the personal agenda would probably reflect academic freedoms within that culture. Or put in another way the extent that features of the cognitive maps are shared or are not shared, would be an expression of the extent to which a research culture existed and its strength.