

A Note on Methodology

JC Spender

Background

The background to this note is the move to 'multi-method' approaches in social, economic and managerial studies. 'Methodology specialists' such as Lincoln & Guba (1985), Miles & Huberman (1994), Teddlie & Tashakkori (2009) or Van de Ven (2008) have argued that quantitative (QUAN) and qualitative (QUAL) techniques differ but are converging, providing today's researchers the opportunity to 'triangulate' and so capture more of the 'richness and complexity of reality'.

This move, a criticism of the starkly QUAN approaches typical of, say, the *AMJ (Academy of Management Journal)*, may well be part of our academic community's response to the 'rigor and relevance' debate that has attracted so much attention in recent years.

It may also be implicit criticism of what some see as 'physics envy', the impression that the social sciences generally and management in particular have generated little useful knowledge, especially when compared with the advances of medical practice. If management is to be a results-oriented profession like medicine, and BSchools are to be this profession's training grounds, what is the body of relevant professional knowledge and is our research producing it? The problem, physics-thinking critics such as Pfeffer, is that management's research methodologies are too weak. They need to be more like the methods of the natural sciences and our journals should be managed accordingly.

Behind these issues lies a deeper problem for academic researchers. Should they be problem or method driven? Those who feel the academic function is to serve the rest of society, such as practicing managers or government policy makers argue for a 'problem-first' research strategy. But there are many 'pure academics' who feel their clearest function is to drive the discipline forward, letting the chips fall where they may. The proof of Fermat's Last Theorem was major for mathematicians, a once in a century event, but has, as far as one can tell, no immediate impact on everyday life, the healthcare crisis or global warming. For the first, the problems chosen drive the degree of relevance, the methodologies and the

appropriate levels of rigor and precision. For the latter, rigorous extension of the theory targeted is the objective. This seeming dichotomy frames what is probably your most basic search strategy issue.

You have spent some time looking at QUAN and QUAL so I have no need to explain them. But the differences between them may still be less than completely clear - and without knowing these you will have a problem knowing whether to believe 'multi-methods' offer 'convergence' and 'triangulation' or whether Smith & Heshusius (the second reading I sent) are correct when they argue this is a misunderstanding. I think Smith & Heshusius are right and the fashionable notion of convergence is incorrect, though for reasons their paper does not completely grasp.

A caveat; I am no expert in either QUAN or QUAL, plus I have done little empirical work since my PhD. From my website (www.jcspender.com) you can download the resulting book *Industry Recipes*, 1989, and have a look at my methodology chapter. Earlier, in *Theory Building and Theory Testing in Strategic Management*, 1979, I suggested QUAN and QUAL are incommensurate (fundamentally different) but complementary. I think this something of a mistake.

So this session is about a view of social science methodology that suggests neither (a) that QUAN and QUAL are convergent nor (b) that they are incommensurate, as Smith & Heshusius suggest. In contrast I shall try to persuade you that they are more or less the same, though in un-obvious ways. This conclusion, if correct, has some major implications for your research project. Indeed, I hope to help you reconsider what your project is really about.

Knowledge

Research is supposed to generate knowledge, right? We associate knowledge with 'theory'. In this section I want to go over what we think this is supposed to mean and to argue that the science-based ideas we were schooled into when young do not help us very much when it comes to the social science, i.e to the study of human activity. In fact they may prevent us from seeing what is really going on.

My first career was as an engineer (nuclear) so I took a fairly 'realist' view of knowledge - that it was about a reality 'out there' that is independent of us, which has universal invariant

properties. The high energy neutron cross-section of cadmium is so much, melting point of pure gold is 1946 degrees F, and so forth.

There are several problems with this perfectly ordinary view and they can get in the way of doing research. First, words have no 'correspondence' with or 'necessary and sufficient connection to' reality. This is obvious - different languages use different words for unambiguous things like 'dogs' or 'gloves' - 'chien' and 'hund' or 'gant' and 'handschu'. Words seem more like arbitrarily chosen sounds and spellings applied in ways that are shaped by social conventions - which we call being able to speak the language.

Second, words remain in our heads (the mental domain) while the things they refer to are in some other domain - outside, in 'reality'. Plus language itself is 'inter-subjective', going on between us (though we know we can have conversations with ourselves), outside us again but maybe not in the same domain as objects and phenomena. When we share a sentence like 'Jack's dog is brown' some call this a 'representationalist' view - our knowledge as a representation or picture of what we are seeing or imagining (as a mental picture) - or hearing from someone else who is seeing or imagining.

In today's Information Age, we take the idea of 'information' as pretty obvious, but the lack of clear and certain correspondence between our sentences and the reality we are representing is a REALLY major problem. Amongst other things it forces us to distinguish between 'data' and 'meaning' as different components of information. If I say '1946', that is a piece of data. Yet what does it 'mean'? The beginning of the post-war period in Europe? The melting point of gold? The year someone you know was born?

Meaning is about the framework into which data must be fitted before it becomes information, something useful and applicable to our decision-making.

This forces us recognize that there may be at least two kinds of knowledge - knowledge-as-data and knowledge-as-meaning. We can be short on data and we can be short on meaning, something quite different. US Defense Secretary Donald Rumsfeld famously quipped about 'connecting the dots' - which is about meaning not data.

When we have a system of meaning in place, as we might when considering the time of the last Sunday bus to Malmo, '1946' is just before 8pm. We can 'research' for this data in the

ROUGH DRAFT - 10/22/2008

bus company's timetable. A lot of management research is about looking for data which we have no trouble fitting into a framework of meaning - the price of oil, the number of cars sold in 2Q2008, etc. Ultimately QUAN is about looking at data and condensing or extracting its 'bottom line'. Quantitative methods are data reduction devices, helping reveal hidden significance in a mass of probabilistic or contradictory data.

'Meaning' is totally different, a bit like encryption. So long as you have the code, the signal's data can be received, decoded and its practical implications understood. Without the code you can still receive the data but you don't know what to do with it.

How can one research meaning? Ask someone else who knows how to connect the dots, who can tell you what a body temperature of 105 Fahrenheit 'means'? There is some complexity here. Think encryption. You cannot transmit the code unencrypted and preserve the information's integrity, so how do you get it to the recipient? Which is another way of illustrating the rather complicated point that you cannot send someone who does not have 'the code' a message that says 'the meaning of this message is thus and so'. This kind of inconsistent meaning-based communications failure is common in organizations - the R&D people cannot get their message across to the marketing people - and in politics everywhere. It is not about getting the signals through, it is about the recipient's inability to 'make sense' of what s/he hears.

Everyday language is pretty sloppy when we ask 'what does this or that mean?' We may not be asking about the framework - focusing more on the conclusion we are supposed to draw from the data. I might say 'the last bus leaving at 19:46 'means' that I shall miss my dinner appointment. There is no doubt about the framing here. In more formal terms I can say that even though I have a decision making algorithm, which is my 'meaning system', you can still ask what data 'means' because I have not yet computed it.

This is not at all the same situation as being without the algorithm. This 'lack' is what we focus on when we seek 'meaning'. You know that qualitative methods have been used to research the ways in which others 'make sense' of things - how Eskimos make sense of snow, or of their tribal rituals, or why bankers dress and talk the way they do.

Thus there are two very different ways of understanding what QUAL is about. (1) It is

about collecting and 'reducing' or discovering the significant parts of wordy - non-numeric - data or (2) discovering the meaning which attached to some specific data, turns it into useful information.

Likewise QUAN is not simply about numeric data. You may collect data - say the numbers of red cars, blue motorcycles and black bicycles in the car-park - without being able 'compute' it, without 'connecting the dots'.

Note that QUAN and QUAL cannot be easily distinguished by saying QUAL is tied up with data and QUAL only with meaning. We can have narrative data which is handled quantitatively and numbers which are handled qualitatively - which implies the relationship between QUAN and QUAL is problematic, to say the least. Perhaps there is no difference and they are commensurate and convergent - or there may be no relationship at all (i.e. they are incommensurate)? While Smith & Heshusius incline to the second - that the methods are not alike - they are not entirely clear and cannot tell us how to manage our research.

Narrative

Before we get into more complications you might be thinking we need a bit of commonsense here. Why do we not speak of QUAL and QUAN as complementary (as I did in 1979) and leave it at that. A questionnaire generates data. The frame is what you have in mind when you design it. The frame draws on one or more 'theory' about the answers you are expecting. For instance you might hypothesize that people from different socio-economic backgrounds have different attitudes to professional degrees so you ask about both and correlate the answers to support or refute your 'theory'. How do you choose the theory to be used? This is what goes on in the 'pilot' phase - you look at the relevant literature - or you go and ask some friends and acquaintances how they 'theorize' the situation. This is a QUAL process. So we can argue that QUAL and QUAN are simply different phases of a 'research project'. End of story.

Well, yes and no to this. How can we test the validity or 'quality' of the QUAL phase. And if this is not good, what are we to make of our QUAN conclusions? Just because we have a big N and good statistics, if the variables we chose are nonsensical, our results are not good

'knowledge'.

When I argued for complementarity (not at all the same things as convergence) I was thinking in simple practical terms - you do a bit of this and then you do a bit of that, a kind of cyclical or iterative research process. It is simply not acceptable to assume these processes fit together without knowing precisely what each contributes to 'knowledge'. We must dig way deeper and get to the bottom of the supposed easy relationship of QUAL and QUAN.

QUAN seems easier. We have no difficulty 'knowing' quantitative data; speed, temperature, skidoo accident rates, etc. We need a measuring frame because there are differences between miles and kilometers, Celsius and Fahrenheit (and Kelvin). There can be no data without a frame. Likewise there are differences between HK dollars and Swedish krone. In the case of speed and temperature, the frame is stable and invariant. In the case of exchange we know it varies and you may get to the bank and wish you had gone there the week before. Note that arguing data needs a frame and is 'theory laden' is not the same thing as saying data is 'value laden' because researchers make selections on grounds that are often not revealed.

Does this mean that quantitative data (which means the same as quantitative data) can never be 'objective'? Perhaps. But the main point is that the meaning of data is completely dependent on the method of observation. Quantitative data mean only what the observation method used tells us it means. We can be measuring the temperature, but if the thermometer is damaged its reading may be 'incorrect'. How do we know when the reading is 'correct'? There is a Government Weights and Measures agency that deals with temperature standards and they say what 1946 degrees means. But because we have no necessary correspondence with reality no-one can never know 'for certain' and not even the best stabilized quantitative data is beyond question.

There is a useful legal notion here - that of 'what reasonable people consider' as the standard or basis for judging. In the case of temperature, of course, the reasonable people are going to be physicists of some sort, probably working for the government. In the US, I worked for a while at NIST - the National Institute of Standards and Technology - and among other standards they provide the country, they will tell you what time it is

ROUGH DRAFT - 10/22/2008

<http://www.tf.nist.gov/service/its.htm>. They use a cesium clock

<http://www.tf.nist.gov/timefreq/cesium/fountain.htm> that is not at all like your grandfather's windup clock - but will be rendered similarly obsolete and 'unofficial' in due course. It is hard for engineers to accept that there is no objective measure of time or anything else. What they treat as objective is ultimately tied up with what they have agreed to, what they 'value' as correct. Here I am suggesting that the idea that data are value-laden is actually grounded in the notion that there is a clear distinction between values and 'facts'. And if there are no such facts the distinction does not work. Both values and facts are grounded in collective agreements.

It follows that there is a precision about numbers that may or may not be meaningful. You know there is always an error term in the measurement as well as some doubt about the standard. But broadly speaking QUAN is about dealing with data whose framing or meaning questions we have decided ignore or 'background'. This is a collective agreement among a specific group of people, perhaps those we call 'experts'. But the sense of precision may well be misplaced. How accurately do we need to know someone's age to forecast their life-expectancy?

Against the precision of numeric data we tend to regard words as imprecise, so many regard QUAL as about dealing with words rather than numbers. But again this sense of imprecision may be misplaced - especially when the possible states of the phenomena being observed are binary. You are either dead or not, pregnant or not, even married or not. There is no lack of precision here.

So if QUAL is not about words rather than numbers, what is it about? Actually it is about 'narrative'.

This is a complex matter - notice though that through this note I am trying to change the meanings you attach to these terms (I'm assuming you do not know much of 'narrative theory' and its struggles to 'make sense' of narrative).

We can help clarify the concept of narrative (which is more or less about telling a story) by differentiating it from a 'chronicle', a listing of unproblematically framed 'facts', such as the dates of famous Swedish battles. What could this list of facts 'mean' - other than as an answer to an exam question?

ROUGH DRAFT - 10/22/2008

One of the most curious aspects of narrative is that it incorporates a time dimension - a story has a beginning, middle and end without which it cannot make sense. QUAL typically surfaces connections through time, which QUAN ignores. When we are collecting survey data the timing is typically considered unimportant - we frame the data as a 'cross-section', suppressing the time stamp. We do not need time because our data is in a stable set of categories - cars, trucks, motorcycles and so forth - whose meaning is not problematic. We have a hypothesis that, say, rush-hour traffic has a different composition than mid-morning traffic and set up our categories accordingly - even though there is a difference in time here there is no 'connection' across the data.

QUAL - as 'a story' - has dimensions that QUAN lacks and these are the narrative-oriented methodology's real focus. Note that it is not simply about QUAN calling for a framing hypothesis that, being un-problematic, allows one to work with greater precision. Before we collect our traffic data we have to define truck, car, and so forth unambiguously - in a way that allows the measurement system to work smoothly, without ambiguity. What is a three-wheeler, a car or a motor-cycle? In the UK 3-wheelers are designed specifically as tax-dodging, being rated as motorcycles rather than cars. But if its category is not specified ahead of time the measurement system cannot handle observing one.

The other way of looking at this is that QUAN is ultimately about setting up the data collection in ways that insulate the researcher from anything 'surprising'. Everything gets worked out ahead of time, everything that could possibly qualify as data has been anticipated.

Note that we can use the notion of anticipation to handle stories 'quantitatively'. We might want to research why people get married, and we decide to let them tell us their 'marriage story' rather than fill in a questionnaire in which we offer them only categories such as 'for money', 'because I'm lonely', 'for children', etc. So we might decide to use NVivo, NUDIST or some other textual thematic analysis tool to detect the words 'money', 'lonely' etc. These 'qualitative tools' have to be told what to look for. This is not really what QUAL is about - rather QUAL is about finding meanings which the researcher does not already 'know' and cannot, therefore, use to set up a data collection and reduction frame.

Why might one want to do QUAL research and find previously unknown-to-the-researcher

meanings?

There is something VERY fundamental here to do with the notion of being a researcher. We might say it is about the researcher's self-image. QUAN research puts the researcher in the position of presuming to 'know' the meaning of everything that gets considered as data. Everything else gets chucked out as irrelevant. In our traffic survey we did not think to find out where the vehicles being observed are registered - yet the whole crux of the different rush-hour and mid-morning pattern may be in where the drivers are going.

Often, in QUAN projects, the data anticipated is being gathered about people who do not know its meaning, or at least the meaning that the researcher gives it. For instance we might hypothesize that companies' failure rates are inversely proportional to their age. If entrepreneurs knew this would they go into business? Much management research is about finding relationships and mechanisms that we then pass on to business practitioners, assuming they do not already know them. This is research that is 'relevant' - and we hope to conduct it in a 'rigorous' way so that we do not mislead them.

The important point is that QUAN research necessarily places researcher and subject in an asymmetric power relationship, in the sense that 'knowledge is power' - as Francis Bacon famously remarked. Business school professors often seem to think themselves 'superior' to business practitioners.

QUAL - if it is about finding meanings that the researcher does not know - sets up a different relationship. Here the researcher is conceived as more like the rest of his/her 'subjects', relatively ignorant and un-knowing. Philosophers speak of the temptation for the QUAN researcher to adopt an all-knowing 'God's Eye' view.

QUAL is about narrative rather than words because it is about the struggle to communicate meaning from those who seem to have it to those who do not. It gets us to the tricky question of telling how a story can ever 'make sense'. You know what I mean? Some stories make no sense and leave us puzzled, others can be very odd but still make sense. When I worked at IBM one of my office chums killed his parent with an axe. That's odd, right? What is the meaning of this little story? But when I tell you that he had a long history of psychotic behavior going back to the brutality of his 'British public-school' hazing it makes more sense,

right? Narrative theory is all about this 'making sense'.

I have mentioned time as an essential thread running through facts (events) if the story is to make sense. The QUAN researcher is not interested in temporal connections because s/he already knows what the data mean - there is nothing that needs to be extracted from the data that has not already been anticipated.

But what does it mean to say a story 'makes sense'? This is a huge question. But for the sake of simplicity I suggest it basically means that we 'make the story ours', we 'identify with the story's characters'. Those who have experienced hazing will have a sense of how it can induce psychosis and this will help them identify with my poor office colleague.

Narrative theorists offer three basic explanations of why stories 'work'. First, some argue that all human stories follow similar patterns - Joseph Campbell's *Hero with a Thousand Faces* is a wonderful popularization of this idea (he advised Steven Spielberg on the *Star Wars* stories). Second, some argue that language is not arbitrary but is structured in ways that make certain stories possible, others impossible. We can tell stories about parents and children and love and violence because language is rooted in the structures that are embedded in our existence. Third, yet others argue that while there is no necessary 'deep' structure to language or social life, we make stories our own whenever we integrate them into our experience of life. The difference between the second and third positions is that in the third we may have stories that are comprehensible to one group or culture (chess players) but incomprehensible to another (football enthusiasts).

When someone 'gets it' - which is 'discovering' the story's meaning - they have arrived at a place of finding or learning a new meaning. This is every teacher's objective - data is easy to transfer, especially in the Internet Age. But the problem with the Internet is that it does not tell the user what the data means. We teachers want to help our students discover new meanings - the 'lightbulb goes on'. Note that Google's responses to a query are not based on meaning but on hit frequency. The 'semantic web', on the other hand, aspires to deal with meaning (which raises all kinds of questions).

OK, so far I am suggesting that QUAN and QUAL differ most fundamentally in that the first assumes the researcher knows what the data mean, in the second s/he does not. Note that if

one is struggling to 'connect the dots' asking someone else who seems knowledgeable is not one's only research strategy. You can also sit and ponder like Rodin's *Thinker*. But what ponder-method are you to use? Techniques like 'lateral thinking' or brainstorming are not what we normally mean by 'research methods', though we probably should include them.

Now I want to highlight another difference between QUAL and QUAN, also fundamental. If we ask what something means rather than what it is (a matter of data), it is because we do not already know. That seems obvious and pretty trivial. But it is absolutely fundamental. If the meaning of things is always uncertain (the point raised earlier about temperature standards) then how does one arrive at the point of thinking you know what things mean? Clearly this is to do with the exercise of the imagination. We imagine what something means and then, maybe test that out. Thus a theory is a meaning system and a hypothesis is like a model, an operationalization that can be tested. Science progresses because researchers use their imagination to generate testable hypotheses. You may have touched on the differences between deduction, induction and abduction, the first requiring only rationality, the second and third calling for the human imagination.

My point here is that if you want to research how we humans engage and deal with the irremediable uncertainty of the human condition, you are driven to QUAL methods. QUAN follows deductively from a meaning-system that has been accepted by the researcher rather than by the 'subjects'.

QUAL is necessary and unavoidable if you are investigating what is properly known as 'human agency', the ability human beings have to step outside the closed framework of complete causality in which every effect has a discoverable cause. For engineers like myself this is a really difficult 'head trick'. But if you want to research how people act on uncertain information you have to address it.

Uncertainty comes in many guises, as we have seen already. The idea of uncertainty is obviously problematic for if we could define it unambiguously it would no longer be certain. Here we are playing with the difference between closed and open systems. Herbert Simon, our discipline's only Nobel-prize winner, put uncertainty into play in his book *Administrative Behavior* (1947). He illustrated it by saying either some data is missing or the meaning of the

data we have is unclear.

The QUAN researcher puts him/herself into the God's Eye place of complete rationality precisely by ignoring these information shortcomings which, if Simon is to be believed, affect all of us because of our 'bounded rationality'. To model someone's behavior - or that of a firm - rigorously is to presume no such uncertainty. The subject is reduced to an object (like a billiard ball being pushed this way or that).

Many management researchers presume the absence of uncertainty - or simply ignore it - and with that the possibility of a 'rigorous model'. But as they set this up researchers close themselves off from discovering how their subjects deal with uncertainty. Note that few researchers are reflexive enough to model their own 'model invention' process - and here we are digging into creativity.

I have spent my career on these issues so they seem very familiar, but I appreciate that lots of other people are interested in rigorous models and do not want to tangle with uncertainty. Indeed I believe the lack of general interest in how people such as senior managers (the strategists) handle uncertainty is the absolute heart of why the managerial sciences are regarded as so irrelevant. So this concept - and its methodological implications - goes to the heart of what you think your research project is to be about.

I am saying there are two great classes of management research project - those that treat subjects (people and firms) as objects without agency, and those focused on agency. QUAN is appropriate for the first, but QUAL is for the second. We can also contrast this by saying the first assumes the behavior can be modeled rigorously while in the second it cannot; the first is what we think about as rational decision-making, the second is about managerial creativity and innovation. I do not understand why most people seem interested only in the first - so you can see that the meaning-system behind my research interests is incommensurate with that of most of the researchers whose work ends up in *AMJ* or *SMJ*.

QUAN depends on the researcher setting up a closed system of complete causality. QUAL allows for an open system, one in which new meanings can emerge. Ultimately a narrative is about how some actor or actors handled an uncertain situation, deploying their agency, and their story only makes sense because it resonates with the listener's experience of their own

agency.

I once held a Chair of Entrepreneurship and if you are researching this topic why would you think of building a rigorous 'model' that 'explains' it, rather than exploring how individuals engage the uncertainties presented by the economy? Likewise I argue that leadership and strategy studies should investigate others' agency. To approach these subjects from a QUAN perspective is transform the phenomena we all know about from our own everyday experience into something else, no longer to do with human agency but re-positioned into a mythical closed world of complete knowledge and causality driven by knowable independent variables.

The Research Project

Let me summarize where we have gotten to and why it matters.

QUAN and QUAL clearly differ as tools and techniques. There are different books, journals and professional meetings for the two communities too. QUAN and QUAL differ in their targets - the kind of knowledge that can be produced (you may not be too happy about my separating data and meaning). QUAN is clearly about checking whether the data gathered are effectively anticipated by the theory (meaning-system) the researcher has adopted (there's much more to say about this, of course). In contrast QUAL is about dealing with the researcher's lack of a theory and her/his belief that someone else's meaning system may help lead to a theory. Therefore QUAN and QUAL differ in the relationship created between researcher and 'subject'. All told it would seem that Smith & Heshusius are correct and that the multi-method movement's assessment of the relationship between QUAL and QUAN is deeply problematic. It is especially difficult to see how complementarity can be theorized and the more complicated issues of validity, significance and reliability addressed. The equally conventional idea that QUAL is 'exploratory' while QUAN is potentially 'scientific' or rigorous is also suspect.

At the same time we see that QUAN and QUAL are not simply about the difference between numbers and words.

So, as you set up your research project, what is the bottom line here? What is to be done? Why is methodology important - indeed strategic.

ROUGH DRAFT - 10/22/2008

This is where my views have changed most. Part of this is the result of looking more closely at the history of business schools and of trying to work out what BSchools really contribute - if anything - given the knowledge being generated and published seems to be of little relevance to practicing managers. Yet we can presume the world is not simply irrational in allowing them to exist and prosper. But if they do not add to the proposed 'body of rigorously evaluated professional knowledge', what do they do?

Observe how I had to wriggle above to avoid saying QUAN is about 'theory-testing'. Before getting into why I do not think QUAN does this, and exploring why this is a crucial misunderstanding, I want to turn back to QUAL and think about what it really can achieve.

Everything methodological actually begins with the notion of uncertainty - or, to speak more precisely, everything begins with the 'Model of Man' being adopted. This is generally implicit (not spelled out). Most Academy-style research adopts the micro-economists' model - full rationality, full understanding of the situation, and full understanding of the self (utilities and how they coherent into an integrated calculable view). No uncertainty. This, of course, is the same model that Simon set out to criticize. Though his book is widely read and much more widely referenced, the tragedy for our discipline is that in the intervening 60 years no-one seems to have been able to advance his insights into a new theory of the firm (or of organizations or markets).

Absent the obviously naive assumption of complete individual rationality most QUAN research is unworkable. Behavioral economics seems to be an important recent variant and Daniel Kahneman won the Economics Nobel in 2002 for helping promote it. But it is not a theoretically significant departure from the Rational Man model. It simply proposes the individual's rationality is 'biased by recency' and so forth, changing the notion of rationality from something purely abstract and logical to something which could, perhaps, be established empirically. Notwithstanding that the jury is still out on whether this 'behavioral' rationality can be established, the theory still asserts the resulting rationality is universal and thus supports the building of universal models - which is what QUAN people mean by rigor. But this rigor is what they put into the models as they assume they know the meaning of the data to be gathered.

In this sense QUAN researchers tend to have little interest in what their subjects have to

say - what their narratives might offer - because they have already decided who their subjects are and what they think. They are rational self-maximizers and their other attributes - age, schooling, religious beliefs etc - are not theoretically relevant. No no, you say, this does not describe my research, I am very interested in what managers and employees think, especially in such attributes as their utilities, how they rate, say, salary against job security. But isn't this simply exploring how they apply their presumed rationality in their specific bit of the world? Human agency is neither admitted nor considered. Specifically these researchers are not interested in the subjects' responses to the uncertainties of their situation.

OK, let's say you follow along with my argument and, like me, are interested in defining management as the task of shaping the organization's responses to the uncertainties of its situation rather than supplying the necessary reasoning computing power to process the certainties of the data and meanings available and determine the rationally-made decisions they drive. Where does this redefinition lead?

First, it leads to a different Model of Man (by which, of course, I include women, so we do better to use a phrase like Model of the Individual or Mol). This Mol has agentic capabilities as well as rationality. It raises cultural and political issues that go back several hundred years in European philosophy, specifically to the Enlightenment and today's widespread belief that (a) we can make a difference in the world and (b) we can therefore be held accountable for our actions. Here we shift from the a-moral framework of perfect rationality into what is technically known as a 'humanist' one. In this we have freedom, but that means nothing until we appreciate its limits, whether they be social, legal, physical, psychological or otherwise. Since human agency, freedom and responsibility are ideas basic to contemporary society, why would we want to do management research using a Rational Model that treats people as passive billiard balls, every action explainable in terms of maximizing in response to some arbitrarily chosen external factor, be that class background, upbringing, IQ, economic incentive or risk-propensity?

Second, let's say we get interested in what our 'agentic subjects' have to say - and we want to know how they deal with the uncertainties they confront. What does their narrative tell us? If they communicate an algorithm as a rational system for working out the meaning of

data it does not tell us about how they confront uncertainty. Rather it presents them as Mr. Spock-like, coldly rational and inhuman.

The power of a good story that can help us see the world in a different way lies in its encompassing the deeper a-rational human aspects we recognize most clearly in ourselves. Seeing Shakespeare's *King Lear* probably changes our sense of old age and the existential rage that often accompanies it. Indeed the whole argument for arts education is that it can help us learn about the humanity and inhumanity of our world without the pain of having to experience it firsthand.

What I am edging towards is that QUAN and QUAL actually grow out of different Models of the Individual, that Smith & Heshusius are more right than they know and that researchers need to be very careful to pick an MoI that is consistent with their research project.

How does this get to matter?

A lot of this note is about coming to terms with never being certain of our knowledge - whether that be about data or meaning. The real question methodology must answer is that if management research does not (perhaps cannot) produce 'certain knowledge', what philosophers call JTB (justified true belief), what is the research activity about?

Narrative actually works and leads us to accept a different meaning system because it appeals to the more human parts of us, not solely the abstract rational parts. This is not to say that our capacity for rationality does not matter - in practice or in our theorizing. On the contrary, it matters a lot, but it is not the only aspect of the human condition and contribution that matters. This is where narrative differs from statistics. Some researchers call the a-rational aspects the 'rich' or 'thick' part of the narrative. Note that this is not about 'irrationality', or the curious notion that 'emotion' is a mode of thought and action that, being other than rational, is irrational. On the contrary it is about a mode of thought that goes beyond rationality and into morality and aesthetics - among other things and places. You know this is what politicians reach for when they are exhorting us to vote for this or agree with that - and this gets us into 'rhetoric' otherwise known as the 'art of persuasion'. If you are interested in this <http://en.wikipedia.org/wiki/Rhetoric> is a good place to start. Believe me, if you are an engineer as I am, it may change your view of social life and set you wondering how rhetoric got

ROUGH DRAFT - 10/22/2008

'forgotten' from the university syllabi it used to dominate until a century ago. That is a long story but the short version is that the methodology of natural science killed it. But now, post-Kuhn and post-'science studies' which look into how science actually works, we appreciate better the limits of rationality as the grounding for our methodologies and are groping in different directions.

So here is what is going on. Research is about people are being persuaded of the rightness or acceptability of things that can never be known in any objective or certain way. Who are these people? Your academic colleagues. Why is it important to persuade them? Well, you have passed beyond being assessed by regurgitating 'facts' such as the dates of the designated 'important Swedish battles'. Now your senior colleagues want to know what you think i.e. they are interested in your meaning-systems (or what they may call theories). Are these to be rigorous pictures of reality? Ah well, though that is what we might tell each other and our students, we really know that they are not. So that test provides no way of evaluating your 'quality' as an academic. Notice I am not saying you have to persuade practitioners. They do not determine whether your thesis gets accepted or are offered a post-doc or junior faculty job. Of course, you may have to pay more attention to practitioners when you have tenure and are looking for research funding so that you can take on and support another generation of PhD students.

Testing is an interesting idea. Does QUAN really 'test' the theory behind the hypothesis? The idea of falsification, due to Popper, is popular here. The observation of a single black swan falsifies the theory that all swans are white. But does it? There is a famous methodological dispute here known as the Duhem/Quine thesis. The issue is that you have no doubts about your observations theory - you have to know for certain that the large black bird you observed is indeed a swan. But you know you cannot ever be certain? Consequently the only thing a critical experiment can achieve is to increase your doubts, it cannot prove anything one way or the other. Yet the notions of verification and falsification underpin QUAN. So what's really going on here?

This is the point at which I say QUAL and QUAN are the actually the same. They are both about narrative. They certainly differ in the languages they use. But - and this is the deeper

point - neither offers certainty, and neither can jump the chasm between persuasion and proof. For those of you who get interested in the theory and history of rhetoric this refers to the gap between rhetoric and dialectic (syllogisms and so forth).

The QUAL narrative is conducted in a language that is attached to a specific body of theory and is comprehensible only to those trained into it - and incomprehensible otherwise. It presumes all kinds of things about the world being discussed, stability of the meaning-system and its terms being one, certainty being another. Research does not discover something previously unknown about reality. On the contrary, it is about persuading academic colleagues of your intellectual prowess.

This activity is not without professional risk, and to manage this it is helpful to understand the difference between data and meaning. Academics, like most of us, are more ready to be impressed by research which essentially confirms them in what they already know; in my terms, research which fits comfortably with their current meaning system. It is useful to spice this up a little by revealing conclusions that were not previously appreciated. Paul Krugman, who won this year's Nobel, made his name with a theory of international trade based on product heterogeneity. As with Kahneman, his work supports the basic economic model by suggesting that it is, after all, completely rational for Germany to import Citroens while France imports BMWs - in spite of the fact that we all know cars would be cheaper if they were of only one design. Krugman's theory works because buyers do not regard Citroens and BMWs as identical products.

A Kuhnian anomaly is quite different. This is something such as an empirical finding that does not fit with the current meaning-system and therefore threatens to destabilize it - what Kuhn called a paradigm-shift. Those who held to the Ptolemaic Earth-centered view of the universe as a matter of faith - specifically the post-Galileo Roman Catholic Church - did not appreciate the Copernican Sun-centered view. It led to, shall we say, hard feelings and hard doings. Disciplines tend to ignore anomalies and brush them under the carpet. Thus Simon's bounded rationality is a great elephant in the middle of our common room that most of us tip-toe around as if it was not there.

Research that provokes a change of meaning-system is likely to be contested and resisted,

which is not unreasonable since we know that neither the new nor the old theory can be 'certain' and thus qualify as JTB. It is especially reasonable when one appreciates, as you may be starting to, the huge personal investment in time, sweat, and life-chances academics make in the meaning-systems they adopt.

OK, we are getting to the end here.

Ultimately all academic work is about persuasion rather than proof. How does this work? What are its means? Rhetoric tells us that first step in persuasion is to sense what the audience is prepared to and able to hear. This is not about reasoning, it is about feeling. If you want to write about management ethics or environmentalism this is your time. Yet these things were being written about and mostly ignored before World War II. Today people want to hear about this stuff. You may say for good reason and is obvious given the reality of what we see going on about us. But what is going on? Do we know for certain? Is our part in global warming completely certain, or simply a now increasingly conventional view?

Rhetoric's second step is 'invention', which used to mean establishing the terminological frame of the persuasive discourse - what we now call establishing the variables. The subsequent steps deal with surfacing the contrary arguments and tying up the conclusions.

Bu now you can sense that what we think of as the normal structure of an academic paper is actually a particular interpretation of these standardized rhetorical steps. In fact the story is that when the Royal Society was new Sir Isaac Newton, no mean rhetor himself and, of course, a classical scholar who had read Aristotle's *Rhetorica*, laid out this format for those intending to submit papers. It stays with us.

QUAN and QUAL use different languages and vocabularies, but their stories are the same. Thus those trained into the positivist modes of discourse have, perhaps, really convinced themselves that their statistical manipulations reveal certainties. In fact they are simply rhetorical devices for assisting the process of persuasion that they find convincing. Those trained into ethnographic or discursive modes of discourse find narrative more compelling. In this sense the methodologies are the same in that they are simply about persuasion. They differ only in the audiences towards which they are directed.

Which get us back to the choice of Mol. We tend to think of this as an abstraction. Far

ROUGH DRAFT - 10/22/2008

from it. It is the very practical and moral matter of the researcher's identification with his/her human subjects – or lack of it. So the deeper question here is how can it come about that management researchers are divided into these distinct linguistic and methodological communities? Is it, as many argued in the 19th century that the natural and social sciences are incompatible, and the QUAN is about a natural science 'objectified' approach to human activity while QUAL is an interpretivist or humanist approach - somewhat along the lines of the difference between 'etic' and 'emic' approaches? Or is it that physics envy is simply the externalization of some people's urge to suppress their own a-rational characteristics?

Finally there is a reflexive element here. In this note I am trying to persuade the seminar attendees – or the reader – of the possibility that methodology is primarily about the development and manipulation of rhetorical tools. It is not more about Truth than it is about religion, even though it seems to slide uneasily between the two. My method for persuading you about method is essentially qualitative. I could equally have taken a QUAN approach.

Bibliography

- Dyer, W. G., & Wilkins, A. L. (1991). Better Stories, Not Better Constructs, To Generate Better Theory: A Rejoinder to Eisenhardt. *Academy of Management Review*, 16(3), 613-619.
- Howe, K., & Eisenhart, M. (1990). Standards for Qualitative (and Quantitative) Research: A Prolegomenon. *Educational Researcher*, 19(4), 2-9.
- Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic Inquiry. Newberry Park CA: Sage.
- Miles, M. B., & Huberman, A. M. (1994). Qualitative Data Analysis: An Expanded Sourcebook (2nd ed.). Thousand Oaks CA: Sage Publications.
- Smith, J. K., & Heshusius, L. (1986). Closing Down the Conversation: The End of the Quantitative-Qualitative Debate Among Educational Inquirers. *Educational Researcher*, 15(1), 4-12.
- Teddlie, C. B., & Tashakkori, A. (2009). Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences. Thousand Oaks CA: Sage.
- Van de Ven, A. H. (2008). Engaged Scholarship: A Guide of Organizational and Social Research. Oxford: Oxford University Press.