RESEARCH ARTICLE

DECISION MAKING AND 'MESSY' METHODOLOGICAL RESEARCH APPROACHES

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ARTICLE INFO	ABSTRACT
	This article looks at the theories behind how organisations and individuals make decisions which impact on the environment in which they operate. The processes that are involved in making these decisions can be both linear and non-linear. It is argued that these differences need to be taken into accounted in any programme of research that is undertaken that looks at the social world. Traditional views of how a methodological framework for undertaking this type of research have emphasised the importance of standardised approaches which follow a linear format. To include the non-linear way in which individuals and organisations approach decision making a methodological framework needs to be flexible enough to be able to reflect this non-linear pattern. This would require the researcher to embrace a 'messy' approach to their programme of research which is more reflective of the social world that they are researching.

INTRODUCTION

The operational environment in which organisations work and in which we all live is affected by political, economic and social changes which influence the decisions that are made by individuals and organisations. Following the Global Financial Crisis (GFC) of 2008 the pace of change within the operating environment has become continuous. It is dynamic and fast moving influenced by factors such as technological advances, the globalisation of trade (Van Den Berg & Pieterma, 2015). Decisions made by people as individuals and as employees in organisations follow linear and non-linear processes. These need to be looked at by academic researchers when they are undertaking research into the problems and issues of the social world. Traditional views have presented a view that only a linear approach can be undertaken by the researcher. However, to truly reflect the social world that is being researched then the research design needs to be methodologically 'messy'.

MATERIALS AND METHODS

Decision Making: Organisational Approaches

There is a significant body of literature that looks at how organisations adapt to change, including the processes of decision making that are undertaken and the choices that are made about how to respond to change.

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One view is that the operational environment itself deselects organisations despite their efforts to adapt to change (Hannan & Freeman, 1977). Other literature looks at how organisations adapt to change through changing their strategic approach (Ansoff, 1965, 1984, 1987, 1988) or by the positioning of the organisation within their sector / market (Chakravarthy & Doz, 1992). Ansoff (1957, 1965) developed a product and market growth model and this can be used as the basis for organisations to set their objectives and direction for future development to a way for firms to identify options for changing their organisational approach (Bennett, 1994). The model provides four options for an organisation across the two core areas of markets and products; market penetration, market development, product development and diversification. Market penetration is an option which focuses on existing products within existing markets and presents least risk as products are already established. Market development looks at existing products being applied to new markets and assumes that existing markets have been exploited. Different approaches can be used to introduce existing products to new markets such as geographical expansion, new pricing / distribution methods or segmentation of the market. Product development relates to the application of new products to an existing market and can relate to the modification of an existing product. The final option is diversification in which new products are applied to new markets. This is the riskiest of the four options as it involves two unknown areas (new products and new markets) being dealt with at the same time and can involve an organisation diversifying activity which is related or unrelated to their core functions.

Present Products New Present Markets New

Market Penetration	Product Development
Market Development	Market Diversification

Source: Ansoff (1957, 1965)

Figure 1 – Product Market Grid Model

The model has been modified and applied to other service sectors (public and third) as opposed to just the business and commercial private sector. An example is in the two dimensional typology developed by Osborn (1998) to look at innovation within the public sector and built on the traditional split of innovation between product and process allowing for 'innovation to occur at any stage of the life cycle thereby highlighting discontinuity (innovation) and continuity (organisational development) along the dimensions of services and users' (Walker et al, 2002, p 5). This was then modified and applied to two studies that looked at innovation in social housing which were undertaken by Walker & Jeanas (1999) and a further study undertaken by Walker et al (2002). Both used a two dimensional typology put forward by Osborn (1998) to look at innovations within their research studies. Within the two dimensional model, the first dimension focuses on the impact of organisational change upon the services that are delivered and these are identified as existing or new ones which also includes the discontinuity of services. The second dimension focuses on the relationship of an organisational change to its users both new and existing as well as how their needs are met 'which involves end-user discontinuity' (Walker et al, 2002, p 5).

Table 1. A Typology of Public Services Innovation

Services	Users	
	New	Existing
New	Total Innovation	Evolutionary
Existing	Expansionary	Developmental

Source: Walker & Jeanas (1999)

Four types of innovation were identified: the first is total innovation which includes 'discontinuous change that is new to the organisation and serves a new user group', the second is expansionary innovation whereby 'the change involves offering an existing service of the organisation to a new user group', the third is evolutionary innovation whereby 'the change involves providing a new service to the existing user group of an organisation' and the final classification is developmental innovation where 'the services of an organisation to its existing user group are modified or improved' (Walker et al, 2002, p 5). In comparing Table 1 with Ansoff's original model at Figure 1 the two core areas of analysis, products and markets have been replaced by services and users to produce four options.
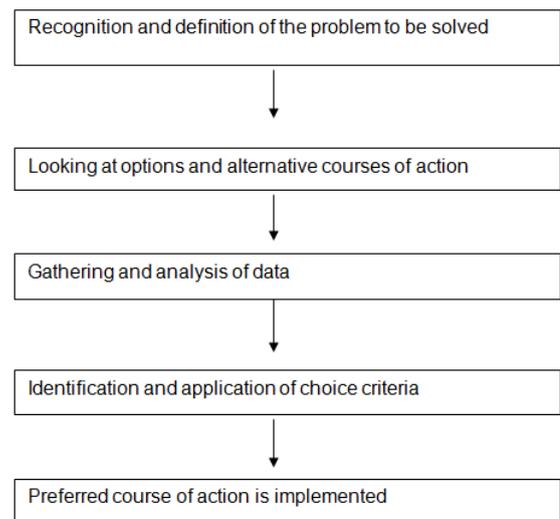
Table 2. Comparison of two models

Ansoff's Product Market Grid Model	Typology of public Services Innovation
Market Penetration	Developmental
Market Development	Expansionary
Product Development	Evolutionary
Diversification	Total Innovation

Source: Adapted from Ansoff (1957,1965), Walker & Jeanas (1999)

The options identified through these models present policymakers and managers in organisations with choices upon which to make decisions about the future direction of their organisations (Macmillan & Tampoe, 2000). Van Den Berg & Pieterma (2015) see the strategic decision making process as one in which policymakers and managers are motivated to aim for achieving objectives for the organisation through discussing all the factors before choosing and implementing an option. Within the literature other models such as Porters (1985) Value Chain Model, have been developed that assist the organisational strategic decision making process. This model enables the effectiveness of an organisation to be considered by looking at the value of each activity undertaken.
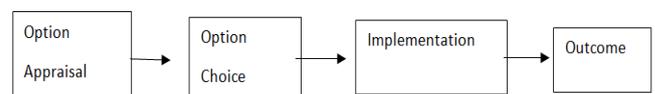
Decision Making: Models

Demands, pressures and influences are experienced by the policymaker who is `at the centre of the decision making process' (Fernando and Burrows, 2005, p3). The policy and decision making processes have been developed through a number of models based on a rational system of working and influenced by classical management and economic theory assumptions such as objectivity, analysing and assessing all options (Huczynski and Buchannan, 2001). Models would take into account steps that follow each other involving specifying the problem, assessing options, selecting a course of action, taking the action and evaluating it. This is shown in Figure 2 below.

Recognition and definition of the problem to be solved
↓
Looking at options and alternative courses of action
↓
Gathering and analysis of data
↓
Identification and application of choice criteria
↓
Preferred course of action is implemented

Source: adapted from Hopwood (1974, p 124)

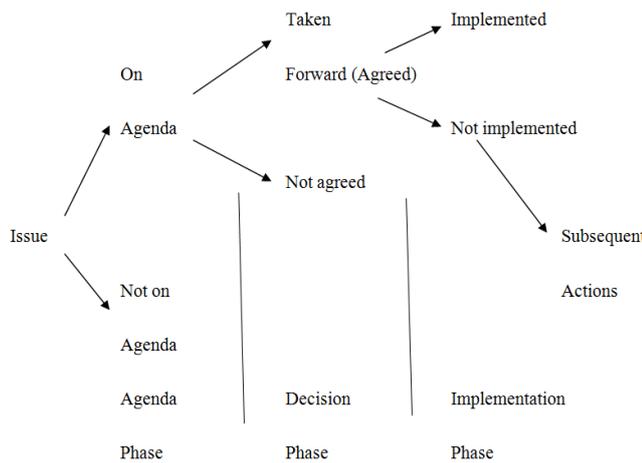**Figure 2. Steps for a rational decision making process**

One of the most used forms of rational decision making model that has been developed is the Linear model, which is process led with one step following the next. According to Sutton (1999) the linear model is 'a problem solving process which is rational, balanced, objective and analytical' (p 9).

Option Appraisal	→	Option Choice	→	Implementation	→	Outcome

Source: Adapted from Meier (1991)

**Figure 3. Linear model of decision making**

An alternative model type put forward by Grindle and Thomas (1990, 1991) added three specific phases within which the decision making process is undertaken; the agenda phase, the decision phase and the implementation phase. This is presented as Figure 4 below;

Source: adapted from Grindle and Thomas (1990)

Figure 4. Alternative model of rational decision making

Gigerenzer & Todd (2000) say that rational decision making models require rationality in the decision making process. The Linear model assumes that the cognitive capability and rationality of the decision maker is unlimited. Simonsen (1994) states that the 'rational model does not exist in reality' (p 1) and Li (2008) views such assumptions are not being realistic in the modern age. Simon (1960, 1984) had recognised the potential limitations of the policy maker through human behaviour and had called this approach 'Bounded Rationality'. This allowed for the human traits of subjectivity, inference, irrationality and focuses on the human abilities of reasoning, judgement and decision making. Lindblom (1959) had also noted the limitations of human policy maker's analytical capabilities and ability to solve complex problems. Theoretical approaches to decision making such as probability and incremental theory are based on this work. Within these approaches Simonsen (1994) views rationality as a variable within the decision making process. An adapted model of the decision making process with the variable of rationality is presented in Figure 5 below.
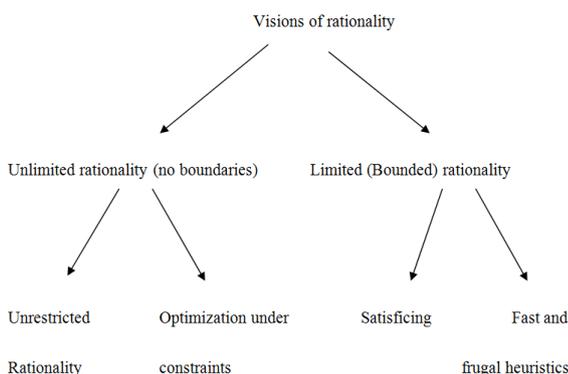
Source: Adapted from Gigerenzer & Todd (2000, P 729)

Figure 5. The decision making process and rationality

Gigerenzer & Todd (2000) say that 'Unbounded Rationality' or unrestricted rationality is the only one of the bottom four options in Figure 5 where the decision maker is not fettered by limiting their search of options or alternatives to an issue. This option is unrealistic when looking at the limitations within human capability. The 'Optimization under constraints' option recognises the limitations of the human mind and the constraints of time in finding information. Under 'Bounded

Rationality' the 'Satisficing' option relates to making a choice based on the information available and 'Fast & Frugal Heuristics relates to the accurate and simple forms of collecting information (Gigerenzer &s Todd, 2000).

Three major strands of development in the area of political science have been identified by Volden (2008) around rationality in decision making, policy diffusion and social policy reform. These relate globally to countries, societies, political systems and the decision making and policy making processes associated with them. Weyland (2006) examined the behaviour of policy and decision makers through the processes of policy making and diffusion from social reforms enacted in countries across Latin America. He found that policy makers employed 'Bounded Rationality' to their decision making processes when enacting policies transferred or diffused from somewhere else. Feinberg (2008) states that Weyland is identifying that in policy terms local choice still prevails in an era of globalisation. Volden (2008) states, that Weyland sees policymakers as taking the available examples as opposed to assessing all the relevant information prior to making a decision. Shipman and Volden (2012) say that Weyland (2006) demonstrated how national policy in Latin America was influenced by 'biases' as opposed to a rational decision making process. To Weyland (2006) this local choice in the decision making process has been enacted against a background where market forces, liberal economic policies and neo-liberal political principles are sweeping across the globe impacting upon policy making and the provision of public services.

DISCUSSION

The Research Process

In undertaking research into the aspects of the social world the researcher is presented with a multitude of methodologies, theories and philosophies from which they can pick. This can be like a maze leading down different, twisted and varied pathways. In the past 2-3 decades there has been a significant expansion in the number and nature of research processes available (Cresswell, 2003). There can be a lack of clarity in how methods for carrying out research, theoretical perspectives and wider philosophical approaches relate to each other. This can often be further confused by the inconsistent use of terminology to describe philosophies, theoretical perspectives and methodologies by academics and researchers. The processes and language used within researches can also appeared to be contradictory in their usage (Crotty, 1998). Crotty has put forward a model for the research process (Figure 6) encompassing four aspects which he identifies as the 'basic elements of any research process' (1998, P 2). Cresswell views this model put forward by Crotty as providing the background work upon which a framework for the whole research process can be developed that provides the researcher with guidance from 'general philosophical ideas' to 'the detailed data collection and analysis procedures' (2003, P 3).

The four stages that Crotty puts forward are;

Methods: the techniques or procedures used to gather and analyse data related to some research question or hypothesis

Methodology: the strategy, plan of action, process or design lying behind the choice and use of particular

methods and linking the choice and use of methods to the desired outcomes

Theoretical Perspective: The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria

Epistemology: the theory of knowledge embedded in the theoretical perspective and thereby in the methodology (1998, P 3)

Each of these stages is related to a question about what specific aspect the researcher to going to use in their study (what method?, what methodology?, what theoretical perspective? and what epistemology?) as these are the basic elements of the research process.
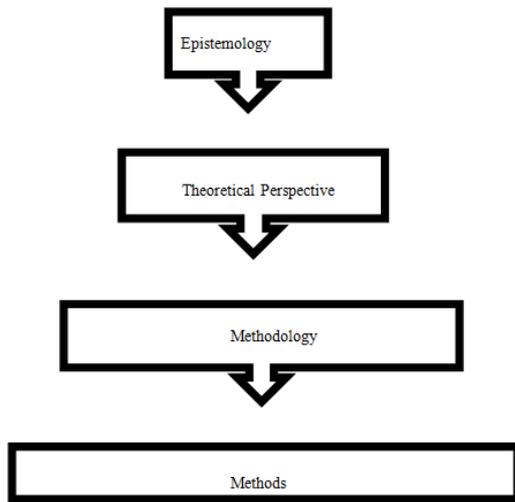
Source: Crotty, (1998)

Figure 6. Crotty's Model to the research process

Cresswell (2003) takes the issue of research design further by posing three questions that he says are 'central to the research design' (P 5) which are

What knowledge claims are being made by the researcher (including a theoretical perspective)?

Figure 7. Research Onion *(Adapted from: Saunders et al, 2009)*

Qualitative research has as its focus the 'contexts and meaning of human lives and experiences' and is inductive while quantitative research is deductive and is focused on testing 'theories or hypotheses, gather descriptive information, or examine relationships among variables' (Cresswell et al, 2011, P 4). Historically, a quantitative approach has been linked with positivism and a qualitative approach with subjectivism. A comparison of both 'core' approaches is provided at Table 3. The 'third' way is to use a mixed methods approach to undertake research and this has become more common within the academic and research community, it combines elements of both approaches either as separate or integrated within the research process. An alternative to Crotty's model is provided by Saunders et al (2009) through the 'research onion' (Figure 7).

Table 3. Characteristics of positivist/quantitative and subjectivist/qualitative approach

Positivist – Quantitative	Subjectivist – Qualitative
Single reality that exists independent of the observer	Multiple realities that are symbolically constructed with meaning being observer dependent
Researcher engages the world objectively (value neutral)	Researcher engages the world subjectively (value laden)
Knowledge is based on measured observation and analysis	Knowledge is based on observation
Emphasis is explanation and control	Emphasis is discovery
Validity – project and instruments measure data	Credibility – establish that the results are creditable
Generalisation – applicability to other areas achieved via sampling	Transferability of research findings to other settings
Reliability – findings are replicable	Researchers account for the ever changing context of the research
Objectivity – researcher limits biases and interactions with participant	Reflexivity – researchers examine their own biases and make them known

Source: Adapted from Borregio et al. (2009) and Brannigan,(1981)

What strategies of inquiry will inform the procedures?

What methods of data collection and analysis will be used? (PP 5-6). Cresswell (2003) identifies that the researcher can use the fundamental elements for the design of their research that are within these questions (knowledge claims, strategy and methods) to choose one of three approaches to enquiry, either the qualitative, quantitative or mixed methods.
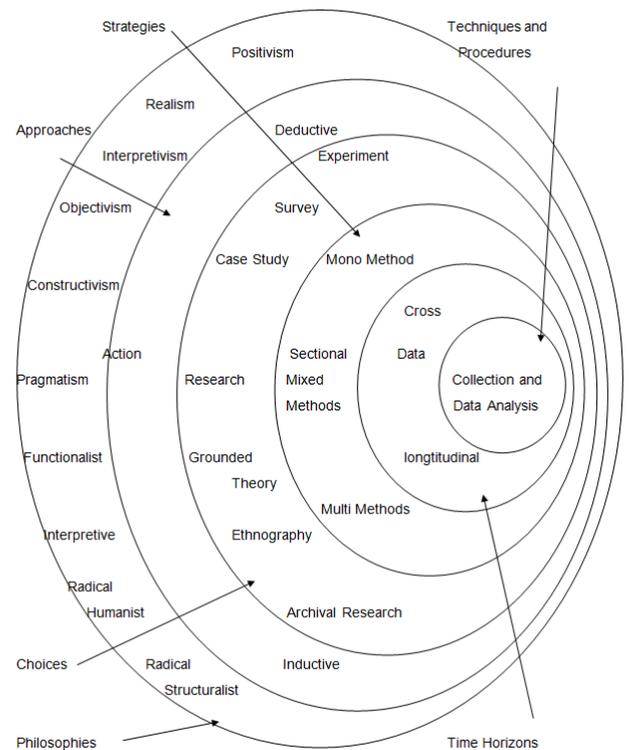
They divide the overall research process into 6 stages to include: philosophies; approaches; strategies; choices; time horizons; techniques and procedures whereas Crotty (1998) narrowed them down to be: epistemology; theoretical perspectives; methodology; methods. Saunders et al (2009) have mixed 'epistemology' and 'theoretical perspective' within their model as the outer layer of the 'research onion' under philosophies whereas Crotty's (1998) model has clearly

differentiated between 'epistemology' and 'theoretical perspective'. Furthermore, 'ontology' is not specifically stated in either of these models. The model presented by Saunders et al (2009) shows the design of the whole research process in the form of an 'onion' with 6 layers, each representing a key part of the process and each requiring to be peeled off to reach the next layer. Dawood and Underwood (2010) criticised Saunders et al (2009) for not identifying, differentiating or positioning epistemology, ontology and axiology on their model or including 'abduction', as another approach, within the layer with deduction and induction. Saunders and Tosey (2012) state that it is the researchers 'understanding and associated decisions' (P 58) about the outer layers of the onion that influence the research design, selection of data collection techniques and analysis tools. Their aim in developing the 'onion' seems to be to make the process of selection within the research design easier for the researcher.

Conclusion

'Messy' Methodological Framework

Decision making is important in the lives of individuals, in the way organisations operate and in the interactions between individuals that make up the social world. The way that decisions are made has been discussed by academics and researchers. They have identified rational, non rational, linear and non linear approaches. To understand the decisions made by individuals impacting upon phenomena within the social world research is undertaken by researchers using a variety of philosophies and methodological approaches. To be able to fully account for the different ways that decisions are made the research approach needs to be flexible to embrace them. A 'messy' research framework allows the researcher to adopt methods that are flexible and can be shaped to research the subject being explored.

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