Discourses Underpinning Decision Support

P.C. Humphreys

London School of Economics and Political Science

Houghton Street, London WC2 2AE, UK

Tel.: +44 171 955 7711, Fax: +44 171 955 7565

E-mail: P.Humphreys@lse.ac.uk

Abstract

Textbook accounts and case studies of decision making in the social and organisational contexts of decision support typically concentrate on modelling the representation of the decision problem, and/or of information which may be relevant in its solution and/or the motivations of interested parties, etc. They employ the discourses of the participants in the decision making, and of decision analysts and/or DSS designers, as accessories, useful in contextualising the representations which are the focus of the account. This paper attempts to invert this process, focusing on the discourses employed in decision making, decision analysis and the design of decision support, first, identifying the kind of discourse employed in negotiating and constructing decision problem representations, at five qualitatively different levels in determining prescriptions for action, and, then, investigating how these representations are employed as artefacts by those people who participate in the making of decisions and attempt to get them implemented in organisational contexts.

Keywords

Organisational discourse, power, discourse of truth, discourse of prestige, career discourse, levels of handling of decision problems, prescriptions for action, implementation of decisions

1 DECISION MAKING: FROM FEELING THROUGH DISCOURSE AND REPRESENTATION TO ACTION

Textbook accounts and case studies of decision making in the social and organisational contexts of decision support typically concentrate on modelling the representation of the decision problem, and/or of information which may be

relevant in its solution and/or the motivations of interested parties etc (Goodwin and Wright, 1991; Kleindorfer, Kunreuther and Schoemaker, 1993; von Winterfeld and Edwards, 1986). The problem situation comes neatly packaged as a problem statement which appears to suggest 'naturally' the way the decision problem is to be framed and how the structure might be developed within the frame. In fact, the whole enterprise of decision theory is based upon model construction and exploration within a structure that is assumed to be pre-defined (Humphreys and Berkeley, 1985; French, 1988) and the history of how those structures came to be developed is, generally, ignored.

In some case-based accounts of 'requisite' decision modelling (Phillips, 1984), it is recognised that these structures are negotiated between the participants in the decision making process (Phillips, 1989; Checkland and Scholes 1990). In these cases, some account of the discourse between participants may be given but, in general the discourses of the participants in the decision making, and of decision analysts and/or DSS designers who may be involved, are presented as accessories, useful in contextualising the 'decision problem' representations which are the focus of the account. The history of the constitution of these discourses is naturalised (Barthes, 1972) within these accounts.

In the following section, I will attempt to invert this way of describing decision making and decision support, focusing on the discourses employed in decision making, decision analysis and the design of decision support, and considering the 'decision problem' representations employed, or constructed, through this discourse as adjuncts and artefacts, constructed and negotiated through five qualitatively different levels of decision problem handling.

2. FROM FEELING TO ACTION: LEVELS OF REPRESENTATION OF DECISION PROBLEMS.

The fundamental task facing a decision maker is how to resolve uncertainty about how to go about developing a prescription for action and get it implemented. The desire to take some action is generated from a feeling that there is a lack (or a gap) between the actual state of affairs (as perceived by the decision maker) and some imaginable preferred state. In theory, the decision maker starts out, at the level of feeling, with complete freedom about how to think about how to translate this desire into action; until structural constraints are placed on the way the problem is represented, all imaginable courses of action are candidates for implementation.

The decision maker, in order to act, must first strengthen the constraints on how the problem is represented until only one course of action is prescribed: the one which is actually embarked upon. Five qualitatively different levels of constraint-setting may be identified, each associated with a different kind of discourse concerning how to structure the constraints at that level. The nature of the knowledge represented, and, progressively, structured at each level, and the

cognitive operations involved in generating these knowledge representations has been discussed in detail elsewhere (Humphreys, 1984, 1989; Humphreys and Berkeley, 1985, 1986). Here I will only give a brief outline of the kind of operations carried out at each level in processing the decision, and the kind of discourse which informs and constrains these operations, following the scheme shown in figure 1

Figure 1 Five levels of representation of decision problems

At the top level (level 5 in figure 1), aspects of the decision problem are *imagined* through exploration carried out within the 'small world' (Toda, 1976) whose bounds are defined by what the decision maker is prepared to retrieve from his or her semantic memory or 'unconscious' in thinking about the decision problem. Explorations within these bounds are made within what Sandler and Sandler (1978) called 'the background of safety', and are themselves beyond language (Lacan, 1977), which can only be used to describe what is found during such exploration. Attempts, in social context, to persuade decision makers to explore beyond their background of safety can be highly distressing to them, and

are usually countered with what others (who consider such exploration to be 'safe') experience as *paranoid discourse* as described by Colby (1975).

The results of what is encountered in this exploration form the material basis for the content elements of problem representations which are manipulated in problem structuring at lower levels. At the next level down (level 4 in figure 1), *problem-expressing discourse* may be employed to make claims to 'prove' (Toulmin, 1958) that particular elements of what was explored should (or should not) be included in the representation of the decision problem. Claims need to be backed up in problem-expressing discourse in order to gain their acceptance by those party to the decision making process. Hence, much of problem-expressing discourse is argumentative or persuasive, constituting the 'because' part of the argument that backs the claims in this discourse (Freeman, 1991).

A variety of studies of organisation and rhetoric, mainly following Toulmin (1958), have explored how participants use warrants and backings to support their claims in this discourse (Vari, Vecsenyi and Paprika, 1986, Humphreys, Oldfield and Allan, 1992, Van Eemeren et al., 1997) There has been some criticism on exactly how to distinguish warrants and backings in analysis of problem-expressing discourse, but the important point to note here is that the successful establishment of the claims of 'what to include in the representation of the problem' is promoted, and accepted through the use of *discourses of truth* (Foucault, 1981). These focus on establishing 'unquestionable' or 'natural' status for the backings for the claims in the minds of those participants in the decision making process who need to be persuaded to accept them.

The claims thus established through problem expressing discourse need to be linked into frames, so that their collective implications for the decision can be explored (Beach, 1990). While all kinds of frames have been proposed in the discourse of professional and academic decision makers, based upon their professional or formal training (e.g., 'Multi-attribute utility frame', 'Budget allocation frame', and so on; c.f., Kunreuther, 1983; Hogarth, Michaud and Mery, 1980), we have found that the frames actually used in organisational and personal decision framing discourse usually fit into the following three principal categories (Humphreys, Oldfield and Allan, 1992, Marouda-Chatjouli and Humphreys, 1997):

- *Rule based frames*, where the framing discourse tries to constrain possibilities for action by collecting a sufficient set of rules such that only one course of action is prescribed by the rule set, taken together.
- *Future scenario frames*, where the framing discourse links imagined contingent acts and events in the future, forwards through potential consequences of immediate acts, or backwards from goals and imagined outcome, with the aim of establishing course and action, and investigating their potential consequences, and side effects, usually under conditions of uncertainty.
- *Preference structuring frames*, where the framing discourse seeks to identify value-laden attributes on alternative courses of action under consideration, (i.e.,

as explored within the other two categories of frames), and to make trade-offs (Keeney and Raiffa, 1976) or establish a dominance structure (Montgomery, 1983, 1989) between the alternatives to provide a rationale for 'choice of the best (most preferred) one'.

In the scheme shown in figure 1, framing discourse is employed to develop the structure of the problem within a frame (level 3 in figure 1; this is, sometimes, called 'conceptual model building'; c.f., Checkland, 1981; Humphreys, 1989). Framing discourse focuses on developing structure until sufficient coherence is reached where it is possible to explore the structure so developed using 'what-if?' discourse (level 2 in figure 1) to see the impact of changing the assessment of one element within the structure (e.g., the probability of a particular event occurring) on the rest of the structure, looking for its implications for understanding potential consequences of making prescriptions for action, as now imagined and represented within the structure. Finally, by the time level 1 has been reached, sufficient constraints have been set for the remaining task to be only to make best assessments of 'the most likely value' at those points in the represented problem that have been represented as 'uncertain' (e.g., probabilities of 'uncertain' events in future scenarios).

Figure 1 is not intended to indicate a prescriptive methodology for decision making (i.e., 'start at level 5, establish constraints, then go down, one by one through the levels until action is prescribed at level 1'). Use of the discourses that I have identified above in handling 'real life' decision problems, is rarely neatly ordered in a simple progression down through the levels. All that can be established, *in general*, is that the use of the kind of discourse that I have described at each level constrains what can be talked about at the levels below it, in establishing the 'truth about the decision situation'

According to Foucault (1980), 'truth is a thing of this world: it is produced only by virtue of multiple forms of constraint' (p.131), and, in this sense, all these above discourses can be considered as particularised and, sometimes, artificial discourses of truth. Conversely, the representation of the problem constructed through the use of this discourse does not reveal the 'real' situation. Rather it is an artefact, advanced through the other, more general, kinds of discourse of truth (Foucault, 1981) as indicating the 'true decision situation', by means of which prescriptions for action may be legitimated and justified. In the following section, I investigate the origin of these more general discourses in the history of organisational management theory and practice.

3. DISCOURSES INVOLVED IN REALISATION OF ORGANISATIONAL DECISIONS AND PROVISION OF DECISION SUPPORT

In personal decision making, the ability to complete the decision making process (entirely by and for oneself through the five levels) provides the decision maker

with the possibility for complete control over his or her immediate actions resulting from the commitment to, or 'decision to take', a particular course of action. In this case, there is little discourse underpinning the action (apart from internalised discourse) as there is no need to discuss with others in planning the decision, making the choice, or implementing the decision. Larichev (1984) called this kind of decision making 'holistic decision making'

In contrast to holistic decision making, there are many situations, particularly in organisational decision making, where the decision maker

- has not enough expertise of information for constructing, exploring, estimating and constructing potential solutions on his own in *planning the decision*;
- is not the person who can decide alone on the course of action to be taken (the choice process); and/or,
- where the action plan to be adopted requires that others act in exact accord with the prescriptions of the decision taken into implementation of the decision.

In all these cases, decision support is necessary: from other people party to the decision making and its implementation, and/or from decision support systems. Such support is gained, delivered, exploited, and maybe subverted through *discourses of truth* of various kinds between all those involved in the decision making process and the implementation of its prescriptions (that is, the 'realisation' of the decision). In the following section, I investigate the origin of these discourses in the history of management theory, education and practice and explore their operation in the context of organisational decision making and decision support.

4. VIEWS ON ORGANISATIONAL DECISION MAKING IN THE HISTORICAL DEVELOPMENT OF MANAGEMENT THEORY AND PRACTICE

In textbooks on organisational decision making, it is usual to propose that the implementation scope of the decision should match the bounds of the organisational management responsibilities of the decision maker. Above shop-floor level (where decision making is presumed to be limited to issues of self management among a disciplined workforce), the responsibilities are considered to involve managing, transforming or controlling a part of the organisation, seen as a socio-technical system or a human activity system (Checkland, 1982). This view of organisation as some kind of entity separate from the decision maker, to be acted upon (rather than within), requiring planning and management, seen as something separate from the creative human processes which constitute it, and whose results are merely viewed, from the outside, as uncertain events, is itself an artifice. It is a direct outcome of the historical transformations which occurred in Europe and North America from the end of the eighteenth century onwards (Giddens, 1971).

Until then, the concept of *work* had been linked to the experience of artisanal work: the work of artisans and craftsmen. In this work, ideas of technical skill, personal competence and craft pride were seen as fundamental to the working process, and were linked to the idea of implicit self and group management - the tasks were managed by the people actually doing them, exchange and monitoring relations were direct transactions between the people actually involved in the work, Decision making was linked to self management, people made decisions for themselves about their own courses of actions rather than for others. Decision making about the work system was decentralised or collective, not centralised on professionals who considered their role to be to act **on**, rather than **within**, the work system.

4.1 Scientific Management

By the end of the nineteenth century, the idea that a work system should involve a close relationship between the worker's craft and local management and distributed decision making activities, with 'organisation' being an emergent function of these activities (rather than a separately managed entity in which they were executed), was lost: it became out of fashion both in management theory and practice of 'organised labour' (Postgate, 1964). 'Scientific management' arrived, with initial proposals, just before the first world war, to study individuals and tasks within organisations from the perspective of engineering, industrial psychology, ergonomics and physiology in order to improve efficiency - and, thus, avoid waste (Taylor, 1947). What was considered at risk of being wasted was, essentially, finance - measured in terms of paid time and/or resources. Scientific management, thus, began to yield the kind of information considered requisite for decision making about acting on the organisation, and with the aim of improving it. The worker's activity, previously conceived as craft, was now deconstructed by the new ways of organising production as 'performance of tasks', whose efficiency was to be assessed through techniques important for 'organisational management' (Donzelot, 1991). It became taken for granted that the ideal ('scientific') form of management should be a far-reaching process of establishing control and surveillance, where to discipline the mind and the body of the 'worker' (i.e. those personnel actually engaged in creative and productive activities in the organisation) was the central concern.

4.2 The Human Relations School

The rise of the Human Relations school of management in the years between the first and second world wars shifted attention from the mechanical and technical side of work to social-psychological aspects of the work system, and from the individual to the group within the organisation. Its paradigm of organisation was presented by many management theorists and publicists between the 1930s and 1950s as the solution to industrial conflict which, by then, the practice of scientific management had been widely blamed for aggravating (Mayo, 1945; Selekman, 1947). Workers

were now to be considered as part of the 'community of the firm' rather than as interchangeable or disposable elements of its labour force. Nevertheless, the human relations approach, although being a reaction to the principles of Taylorism and 'scientific management', still did not question the split between organisational structures and subjective experience of those within them. Management decision making was still focused on acting on the organisation, now understood as a human activity system as well as a socio-technical system. Essentially, the plethora of developments in human relations 'sought to reshape the internal world of the organisation so as to release the autonomous subjectivity of the worker, in such a way that it aligned with the aspirations of the enterprise, now construed in terms of innovation, flexibility and competitiveness' (Rose, 1989).

The idea of 'alignment with the aspirations of the enterprise' required that there would be some way of 'governing the enterprising self' (Rose, 1992) of the workers who embraced this approach to industrial relations. The approaches used were a specialisation of the generalised *project of modernity* (Cooper and Burrell, 1988) to develop identity in civil society through the construction of a particular kind of disciplined self, for those who were legitimate members of that society, 'the unitary rational subject' (Foucault, 1977). Modernity had offered a way forward in the post-enlightenment world from 'legitimacy based on theology' (Rosenau, 1992). Under the project of modernity, reason replaced religion in the production of truth and law functioned without any 'natural' or divine authorisation. Justification had to rely on hegemony and consensus (Fontana, 1993) with hegemony being the vehicle whereby *prestigious spaces of convention* were established within a hierarchical system of permanent consent, legitimating a complex network of mutually reinforcing ideas affirmed and articulated by intellectuals.

The specialisation of the project of modernity pursued by the human relations schools in the United States and Great Britain essentially viewed organisations as specialised prestigious spaces of convention, managed through a hierarchical system of permanent consent, since the aspirations of the workers would now be aligned with those of the enterprise. In the United States, the psychologies of self-actualisation proposed by Maslow (1954) and Rogers (1959), among others, were embraced in developing 'human relations' theories of motivation in relation to organisational work seen as an essential path to self-fulfilment (e.g., McGregor 1960; Argyris, 1964). In the psychological discourses, products of modernity (Gergen, 1992; Parker, 1990), now widely employed in gaining permanent consent in organisational spaces, were presented as a unitary entity, a coherent whole. The unitary rational subject who 'naturally' accepts this self as his or her organisational identity is established through what Foucault (1981) called *discourses of truth*: assertive discourses which position individuals in an ethical or moral framework, such as that promoted by the programme of Tavistock Institute of Human Relations in the UK, which sought to combine the organisation of work with an ethics of democracy, fairness and humanisation (Jaques, 1951).

In being positioned within the prestigious space of convention which constitutes the organisation within this discourse, the individual accepts responsibility on behalf of himself or herself, and so can be disciplined by those in subject positions where they can exert power through the discourse of truth, in ways I will describe in section 5.2 below.

4.3 The structural approach

The deficits of the human relation approach were challenged, with rapid and substantial effect on management education and, subsequently, practice, by Peter Drucker in his widely read book 'The Practice of Management' (1954). Drucker criticised the human relations approach for being paternalistic and for reducing management action to personal qualities like leadership. He stressed the importance of building the appropriate managerial structure, or transforming the existing one into it, on the basis of an analysis of the various decisions taking place in the organisation, since 'a poor organisation structure makes good performance impossible, no matter how good the individual managers may be'. Also, according to Guillen (1994), Drucker, as an apologist for management, produced an ideological justification for the role of the manager as the foremost decision maker in the firm.

This new emphasis on the analysis of organisational structures was rapidly embraced within academic management education curricula as it provided the opportunity for a number of academic disciplines focused on analytic methods and which had, previously, been excluded from 'human relations' management curricula, to find a new, financially attractive, home for their lectures and textbooks. The prominence of structural analysis in management curricula in the United States was strengthened by the Carnegie and Ford foundations' reports in 1959 calling for more discipline-based analytical skills in the curriculum.

Included in this organisational bandwagon was the discipline of decision analysis, rapidly re-focused from its history in analysing formally defined situations (Luce and Raiffa, 1957; Raiffa and Schlaifer, 1960) to address and to propose analytic tools to support, managerial decision making in 'real' organisational contexts (Edwards, Lindman and Phillips, 1965; Raiffa, 1969) or to provide access to the information and formal methods that would overcome the claimed 'boundedness' of the rationality of organisational decision makers (March and Simon, 1958; Bazerman, 1990). To exploit the bandwagon, consultants working for management consultancy firms published books proposing structural approaches to organising that would need their services to implement, working as consultants to the organisational decision makers.

A variety of 'expert discourses' were introduced, where the organisational decision makers who were clients of the consultants and management academics, or consumers of their books, were offered keywords to use to indicate that they had access to expertise or the service of experts, in effective management methods and introducing a variety of 'expert' discourses. According to Eccles et. al. (1992),

managers are eager to accept these offers to incorporate the rhetoric of management fads and fashions in their own discourse and 'use such labels and concepts as they see fit as part of their ongoing use of language to coax, inspire, demand or, otherwise produce action in their organisations' (p. 29).

At anytime there is a variety of management methodologies and associated discourse on offer, and their rise and fall seem to follow the model of fads and fashion, rather than be the result of proven effectiveness in aiding organisational decision makers to achieve effective implementation of their prescriptions for action on the organisational work system (Mickelthwait and Wooldridge, 1996; Kieser, 1997). Jackson (1995) bemoans the success of such fads, in contrast to the generally less commercially successful strategy to 'improve the general systems in organisations'. But he misses the possibility that the principal value that the fads offer to organisational decision makers is the provision of 'expert discourse' as a (fashionable) discourse of truth which increases their own power and prestige in their organisation. Kieser (1997), however, seizes on this possibility:

'A management fashion is conceptualised as forming an arena in which different groups of participants bustle about - consultants, professors, managers, editors of management magazines, publishers, commercial seminar organisers, organisers of internet forums, etc.. The participants can achieve their individual goals of highest possible profit, public image, power or career by widening the arena through luring further participants into it. For this purpose they play principally co-operative games. Rhetoric is the main input currency in this game' (p.57)

5. LEGACIES OF THE APPROACHES TO MANAGEMENT THEORY AND PRACTICE

The three main phases of development of management theory are sometimes presented as marking a linear progression in management thinking and discourse, with the human relation approach supplanting 'scientific management', and itself subsequently, being supplanted by the 'structural' approach (Guillen, 1998). But, in fact, all three approaches have contributed to the development of the discourses which today underpin decision support.

5.1 Legacy of scientific management - the need for the power to control

The legacy of scientific management is the perpetuation of the idea in management thinking, in the practice of managerial decision making (Humphreys Berkeley and Jovchelovich, 1996) and in management education (Binar, Humphreys and Nappelbaum, 1998) that the organisation is something to be *acted upon* or to be transformed by management, whose own practice in attempting to do so is

somehow split off from the human practice of those in the organisation who maintain these structures and processes through their own productive activities. This perspective has also promoted management-centrism: *Management* makes decisions, *Management* seeks support for these decisions, *Management* transforms the organisation (Merkle, 1980; Humphreys and Nappelbaum, 1997). This perpetuates the view that successful management within organisations is dependent on both those who 'make' the decisions and those who secure their implementation being able to have the power to enforce them within a control hierarchy.

Pfeiffer (1981) has pointed out that the control of decision making is one of the main sources of power in organisations. Vari and Vecsenyi (1984) describe how, in analysing decision making in bureaucratic organisations (presuming the existence of a control hierarchy, see Jaques, 1976), they found that most of the decision maker's motivations could be traced to the desire for controlling (through understanding and influencing) the three phases of the decision making process, i.e., gaining or maintaining control over:

- the planning of the decision (problem structuring, analysing and proposal formulating);
- the choice process; and,
- the implementation of the decision.

Hence, one of the most crucial functions of decision support in organisational contexts where the decision making and implementation is not the holistic property of the decision maker (see section 2, above) is to support the power to control these three phases. According to the paradigm of 'scientific management', the nature of this power follows what Foucault (1980) called the 'juridico-discursive model of power' which is traceable back to Hobbes (Clegg, 1989). The three basic assumptions of this model are:

- that power is a possession, which means that its central possessor has to be identified;
- that power should be analysed in descending form, from the ruler (central possessor) to those ruled or oppressed;
- power is instrumental in maintaining order and repressive on individuals that challenge those in possession of power.

From the decision maker's point of view, if he or she is immersed in this paradigm, the central possessor of the power to make the decision and get it implemented is himself or herself, i.e., the decision maker is the 'Decision Owner' (Checkland, 1981; Vari and Vecsenyi, 1984). Moreover, the power to do so should be analysed in descending form, through the levels of middle management below the decision maker in the management control hierarchy, to those whose actual practices within the organisational work system are to be acted upon. Finally, in securing the implementation of the decision, repressive actions should be taken against individuals (subordinate managers, workers) who challenge those in possession of power, in this context, the decision maker.

Not surprisingly, it was management's practice in realising the third assumption which led to the whole paradigm of scientific management being called into disrepute, not only by academics but also by business leaders alarmed by the problems 'suspicion, resentment and open conflict between employees and employers' (Stowers, 1946, quoted in Guillen, 1994, p 68), and, thus, loss of production. This was one of the main reasons for the continuing ascendancy of the human relations school of thought in management thinking and practice since the end of the second world war.

5.2 Legacy of the Human relations approach: Disciplinary power and the disciplined decision implementer

While the assumptions of the juridicio-discursive model of power still seem to inform the discourse of top managers in many countries when, for example, discussing the 'problems of middle management' (Humphreys and Nappelbaum, 1997), managers' practical understanding of the nature of the relationship between power and control in decision making, implementation and support has been tempered by the emerging paradigm of the human relations school. The need to 'release the autonomous subjectivity of the worker in such a way that it aligned with the aspirations of the enterprise' (see section 4.2, above) instigated a change of understanding of the operation and power in organisations from that proposed by the juridicio-discursive model to something approaching a Foucauldian perspective where power is understood as continuous, disciplinary and anonymous:

'Power is not an institution and not a structure. Neither is it a certain strength we are endowed with; it is the name that one attributes to a complex strategical situation' (Foucault, 1981, p. 93).

Baudrillard (1987) adds that, as such, power is distributional and operates through relays and transmissions, particularly in the planning and implementation of decisions. Within this perspective, according to Bourdieu (1991), power relations are relations of communication *par excellence*, founded in exchanges within discourse. Thus, organisational decision making power itself is constituted through exchange, in the sense that its viability relies upon the awareness that there is something other than a commodity (not even an abstract commodity like 'information') to be exchanged between people occupying particular positions in the organisational control hierarchy, in the maintenance, or subversion, of the power to plan, make and implement decisions. Baudrillard (1987) describes how such exchanges are located within the discourse of participants through cycles of seduction, challenge and ruse, in ways that I will illustrate below.

In sum, what is exchanged around the cycle of seduction, challenge and ruse is the chimera of power, within discursive practices dependent on subject positions. The precepts of the Human relations approach, while acknowledging the subjectivities of the whole range of organisational personnel, whatever their subject positions, did not challenge the prevailing assumption that organisational decision

makers would typically occupy senior positions within an ordered 'space of convention' - the organisational control hierarchy.

Success in maintaining this hierarchy - now seen as something legitimated within organisational discourse and, thus, potentially contestable within that discourse (rather than inviolable, 'natural' or 'God-given'; c.f., Baudrillard, 1996) required that the hegemonic discourse exchanged around this cycle should be an asymmetrical 'discourse of truth' (Foucault, 1981), maintaining the kind of self discipline in people occupying positions in the hierarchy which locks them into a mutual cycle of seduction in discourse with personnel occupying other positions in the hierarchy.

In general, the success of this process of mutual seduction is predicated on a general background of a discourse of truth which disciplines the participants in decision implementation and support so that their aims are consistently aligned with what is commonly believed to be the aspirations of the organisation. Fournier (1998) identifies the dominant disciplining discourse of truth in contemporary Western organisations as 'the new career discourse', which:

'works through technologies of the self in that it serves to imagine employees as self-actualising beings with an interest in the pursuit of organisational excellence' (p. 60)

This discourse exercises its disciplining effects by constituting and ordering subject positions, in a hierarchical space, privileging those who espouse it as 'supportive', in that they will ensure decisions are implemented in the way desired by the superior decision maker, even when they have been rewarded for their support (by being allowed to exercise discretion within their own bounds of responsibility in how they achieve implementation of the decision; Jaques, 1989). They return the seduction by giving affirmation, indicating that they are pleased to be offered the opportunity to support the decision maker.

A decision maker may be successful in seducing organisational participants concerned with the implementation of aspects of his or her decisions to act as expected, providing he or she is afforded sufficient prestige to be recognised as defining the enterprise within which they are constituted. This requires the maintenance of the *discourse of prestige*. This discourse is *asymmetrical*, it also provides affirmation and deference from those who consent to submit to the control which the decision maker wishes to exercise (by equating it with their own subjectivity, thus considering they 'share' it). The affirmation given seduces the 'prestigious' decision maker to trust the implementers to act according to their own discretion in the implementation, they are considered to share the goal of acting on the organisation in implementing the decision.

Others may consider that they need to protect a different kind of enterprise within the organisation, and challenge the decision maker's prescriptions and, thus, his or her prestige or right to occupy a subject position where he can make such prescriptions and expect to get them implemented. The discourse of such others is predicated on a moral order (e.g., founded on 'integrity' of 'authenticity'; c.f.,

Fournier, 1988) unaligned with the particular 'enterprising' aspirations for organisation perceived by the decision makers who wish to act on it.

Within the discourse of prestige, these 'others' are marginalised. As a result, their acts may be treated as uncertain events in decision implementation scenarios (Brown, 1978) since they are considered to be uncontrollable by the decision maker. Their own discourse is perceived, in the perspective of the decision maker, as 'militant'. Challenges (rather than seductions) are issued to them, and are, often, returned. In short, they are cast in the role of the 'Other' (i.e., those upon whom the prescriptions of decisions must be implemented rather those who should be trusted or seduced to participate in the decision implementing process).

5.3 Legacy of the structural approach: experts, consultants and fads enter the decision support arena

The idea of Decision Support Systems being something commercially viable rests on the growing ascendancy of structural approaches in management thinking and practice during the past two decades. The roots of theories of, and methodologies for, decision support lie in academic disciplines, particularly computer science, operations research and management science (Silver, 1991). From the outset, successful decision support systems practitioners realised that the activities involved in provision of decision support to decision makers in organisations are best understood as located in an arena which is a sub-species of the management fashion arena described by Kieser (1997; see section 4.3, above) with Keen and Scott Morton (1978) proposing that the only general definition of 'Decision Support Systems' was a 'rallying cry' - an implicit invitation to join in this arena.

It was left to Huber (1980) to stress that what many of the new breed of decision support system designers and implementers considered to be a Decision Support System, was only 'dss', a formalised system, usually computer-based, believed to offer support when employed in the wider context of DSS, the actual system providing support to the decision maker in the organisational space of convention within which many participants may take up subject positions. A dss can be considered to be just one type of participant in this arena, and, as such, the division of labour between it and the decision maker has to be considered in 'processing the decision' through planning, choice and implementation (Paprika and Kiss, 1985; Berkeley, de Hoog and Humphreys, 1990). But the decision maker and the dss are not the only players in this space. Vari and Vecsenyi (1984) identified the following roles, differentiating participants occupying key subject positions, other than decision maker, and those concerned with the implementation, whose relations I have outlined above:

- *Proposers*: those who occupy subject positions where they have power to make recommendations to a decision maker.
- *Experts*: those who occupy subject positions where they may supply inputs to the currently modelled problem structure.

- *Consultants* (decision analysts, decision conference facilitators, DSS designers and implementers, etc.): those who temporarily occupy subject positions within the organisational space of convention where they are legitimated to advise on methods of problem representation and decision making (and DSS) procedures.
- *Client*: the person within the organisational space of convention who seeks support from external consultants.

With the introduction of participants occupying these subject positions in decision making situations, the actual location of decision making power, and how it can be supported, becomes more controversial and contested. As I described above, power is now understood as distributional, operating through relays and transmissions, and is something which may be exchanged through discourse between participant in different subject positions. The transfer of power is not necessarily all one-way; as Baudrillard (1987) pointed out, power is exchanged according to a reversible cycle of seduction, challenge and ruse.

I will finish my account of discourses underpinning decision support by briefly reviewing their involvement in the exchanges which typically take place within this cycle between decision makers and other participants in these subject positions and in the attempt to gain power to control the three decision phases (planning, choice and implementation) described by Vari and Vecsenyi, (1984; see section 5.2, above).

A *proposer* is, according to organisational discourse of truth, supposed to be obedient (loyal) to the decision maker, to acknowledge his or her prestige and right to control the choice. However, proposers often seek to influence the nature of the planning which is accepted as the basis for the decision in such a way as to promote their own control over the choice (and, thus, power to get the decision implemented in the way they would wish - some examples are given in Humphreys and McFadden, 1980), without necessarily revealing this motivation. This may be achieved through operating a ruse on a decision maker trapped in the discourse of prestige. The proposer appears to offer seduction: 'this way of representing the problem [the proposed artefactual construction] expresses/justifies what you would like to do.... this is an attractive proposition to help you achieve your ends', while, actually, making an implicit challenge, unrecognised by the decision maker, i.e., 'if you do this, you will strengthen my, rather than your, control over the decision making process, and you will lose some power to me'.

An *expert* is supposed to have no interest in controlling the outcome of a decision process; he or she is interested simply to provide 'truthful' (scientific, unbiased, informed, etc.) knowledge as input to the decision making process. But the discourse underpinning the exchange between an expert and the decision maker may feed into a quite different discourse of truth. The expert can offer seduction to the decision maker by providing him or her with elements of a discourse of truth which increases his or her control over the implementers who share in this discourse: 'I have the service of experts', 'this representation of the problem is

scientifically established', etc. In return, the decision maker's patronage of the expert can be used to increase the expert's prestige when bidding for subsequent work as an expert (by citing 'scientific advisor to senior management in XXX corporation', etc).

Not surprisingly, experts often tell the decision makers what they wish to hear or, at least, accept, because, if they challenge the decision maker, they may find that their services are swiftly dispensed with (and the challenging information discarded with them). In this sense, the mutuality of the decision maker and expert may itself perpetrate a ruse on those who accept the truth of the decision maker's prescriptions (or their justification) on account of prestigious backing. Through this ruse, the expert gains hidden power over the choice process. For this reason, Kunreuther (1983) has suggested that the role of experts in social decision making should be publicly recognised as one of *advocacy*, rather than merely information providing, thus, exploding the ruse.

Consultants may support the process of developing problem representations, facilitate the collaboration of other parties involved in the decision making, and/or communicate its results and prescriptions of the decision making, etc. As such, one would expect that their discourse would be exploiting opportunities for seduction, rather than challenge or ruse. However, implicit ruse is often perpetrated through side-effects of two widespread, but largely unacknowledged 'consultancy vices': *voyeurism* ('to find out what is really going on inside the organisation') and the desire for *power behind the throne*. The desire to be a voyeur often leads consultants to stress the importance of their participation in the planning phase of decision making, and leads to their overemphasis on the construction of decision problem representations founded on the *discourse of observation* (de Zeeuw, 1993). In this sense, they perpetrate a ruse on most of the participants in the decision making, seducing them into thinking they are supporting them in particularising a discourse of truth while, actually, exploiting it as a discourse of access for themselves. Conversely, the desire for power behind the throne can lead consultants working as facilitators in decision conferences to play the ruse that they are helping decision makers gain control over choice and implantation of decision options, while, actually, securing their own power in the group through their professional ability to steer the group process (Bion, 1959; Phillips, 1992).

A *client* is, normally, expected to be locked into mutual seduction with the consultants he or she employs to provide decision support, at least at the point where the contract to provide the support is signed. Otherwise, issuing of challenges, on either side, is likely to result in disengagement. Quite frequently, a client can play a ruse on a consultant who is immersed in the *discourse of prestige*. The client poses to the consultant as the decision maker, where, in fact, he or she has only the authority to act as a proposer. The consultant, seduced by the implicit offer to exercise power behind the throne, thinks that the problem representations he or she develops will help the 'decision maker' gain control over the

implementation, whereas, in fact, these representations will be employed as artefacts by the proposer in his or her attempt to usurp control over the choice.

6 DISCOURSE FORMING THE DSS: THE CONTEXT OF 'dss'

DSS, Huber's (1980) term for the wider system which actually supports the planning, choice and implementation of decisions, is, as I illustrated above, fundamentally constituted through discourses involving participants in the decision making process according to their subject positions and motivations. This provides the actual context for 'dss'. In DSS, problem representations are negotiated and constructed through these discourses and are fundamentally employed as artefacts, again through these discourses in the 'relays and transmissions' (Foucault, 1981) which are maintained through cycles of seduction, challenge and ruse (Baudrillard, 1996) between the people party to the decision. Principal motivations of such people, in organisational contexts, is to maintain their perceived right to occupy the positions and to be accorded the prestige which allows them to gain more control over the decision making process, and, hence, power in the organisation.

This conception of the context of 'dss' is very much at variance with the conventional understanding of the function and context of 'dss' (and of decision problem representations), following the 'expert systems' (or 'intelligent systems') paradigm where it is considered that the principal requirement for the design and development of an effective 'dss' is that it should be able to 'capture expert knowledge' about the decision problem situation and formalise it within a computer-based system (Fox, 1985). An unfortunate legacy of the increasing penetration of the 'structural approach' in management education and practice during the 1980's was the prevalence of this paradigm of the perspective of the 'dss experts' (i.e., knowledge engineers, dss designers and implementers), now entering the decision support arena (see section 5.3, above), and, sometimes, posing therein as 'DSS experts' as a result of successful seduction of the client. Landry, Pascot and Briolat (1985) described the perspective adopted by such experts and, often, 'naturalised' within their thinking (c.f. Barthes, 1972; De Zeeuw, 1993), as follows:

'Within this perspective, the facts (understood as 'what really exists'), their collection and analysis are the focus of the expert. The various interpretations of these facts by the organisational actors are of secondary importance, and usually suspected of partiality. The definition of the problem by the designer is privileged [in the *discourse of dss expertise*] because the method leading to his definition resembles the traditional scientific method.' (p. 52).

The consequence of any attempt to introduce this discourse of dss expertise (and even its amazing extension to 'DSS expertise') into the real (as opposed to academically manufactured case study) decision support arena is usually one of the following:

- The client (decision maker) perceives the implicit privileging of the designer's view of the problem as a challenge within the cycle of seduction, challenge and ruse, and responds with a counter challenge, usually resulting in the rapid exit from the arena of the dss expert, owing to contract cancellation, etc.
- The client (decision maker; proposer) perpetrates a ruse on the expert, seducing him into thinking that this discourse is welcome, and inviting him to deliver it in artefactual form (made up into a report, briefing presentation, or dss specification, or even an implemented dss). The expert believes the client has been seduced through recognition of the scientific value of the dss design ('the expertise enshrined within the dss *truly captures the essence of what should be modelled* in providing effective, *objective*, support in the present organisational context'). However, the client, actually, employs the expert's deliverables merely as artefacts in another kind of discourse of truth within the argumentation scheme: (Claim: 'my prescriptions should be obeyed and should not be challenged because they are *objective and well founded*'; Warrant: 'I have the service of experts - reference to the deliverable'; Backing: 'science', 'natural', 'unquestionable' (see discussion of argumentation in section 2 above).
- The expert plays a ruse on the client (decision maker) by using two different discourses, carefully chosen according to whom he or she is talking with in the arena of decision support. The discourse of dss expertise is reserved for talking to (technical, operative) personnel in the organisation who are the object of the decision maker's plans, rather than participants in their making. The discourse of prestige is reserved for talking with the client (decision maker, proposer, or other person with active control of part of the decision making process). The usual, unfortunate, result of this ruse, as charted by Paprika and Kiss (1985) is the unwitting subsequent divorce of the dss from the decision maker, with unfortunate long term consequences for a wide range of actors in the arena, including the experts themselves.

A more useful perspective, informing real dss (and DSS) expertise in organisational contexts, proposed by Paprika and Kiss (1985) and Berkeley, de Hoog and Humphreys (1990), is to start by considering the decision making process as a *whole*, in terms of interactions through discourse between organisational personnel occupying a variety of subject positions. For the positions where interaction with a dss is also involved (or proposed), we must consider the division of labour between the dss and its user in that particular subject position. In the light of what I have discussed in this paper, I would add that we should also consider very carefully the division of discourse at each of these subject positions, and this must be done dynamically, due to considering the operation of cycles of seduction, challenge and ruse in the immediate context. Moreover, we should consider very carefully *which kind of discourse* is actually being divided, and for what purpose, if our intention is to provide real decision support rather than to

manufacture a 'dss' artefact that will end up consigned to the dustbin of the decision support arena.

7 REFERENCES

- Argyris, C. (1964) Integrating the individual and the organisation. Wiley, New York.
- Barthes, R. (1972) Mythologies. Paladin, London.
- Bazerman, M. (1990) Judgement in managerial decision making (2nd edition). Wiley, New York.
- Baudrillard, J. (1987) Forget Foucault. Semiotext(e) Foreign Agents series, Columbia University Press, New York.
- Baudrillard, J. (1996) The transparency of evil. Verso, London.
- Beach, L. R. (1990) Image theory: decision making in personal and organisational contexts. Wiley, Chichester.
- Berkeley, D., de Hoog, R. and Humphreys, P.C. (1990) Software development project management: process and support. Ellis Horwood/Simon and Schuster, Chichester.
- Binar, N., Humphreys, P.C. and Nappelbaum, E. (1998) A comparative study of education in management and business studies in Russia, Great Britain, France, Greece and Germany. Commission of the European Communities DG1B, Brussels.
- Bion, W. R. (1959) Experiences in groups. Basic Books, New York.
- Bourdieu, P. (1991) Language and symbolic power. Polity Press, Cambridge.
- Brown, R. V. (1978) Heresy in Decision Analysis: Modelling subsequent events without rollback. *Decision Sciences*, 9, 543-554.
- Checkland, P. (1981) Systems Thinking, Systems Practice. Wiley, Chichester.
- Checkland, P. and Scholes, J. (1990) Soft systems methodology in action. Wiley, Chichester.
- Clegg, S. R. (1989) Frameworks of power. Sage, London.
- Colby, K. M. (1975) Artificial paranoia. Pergamon, Oxford.
- Cooper, R. and Burrell, G. (1988) Modernism, postmodernism and organisational analysis: an introduction. *Organisation Studies*, 9, 91-112.
- De Zeeuw, G. (1993) Soft knowledge accumulation and the rise of competence. *Systems Practice*, 5, 192-215.
- Donzelot, J. (1991) Pleasure in Work, in *The Foucault Effect* (eds. G. Burchell, C. Gordon and P. Miller) Harvester, London.
- Druker, P. (1954) The practice of management. Harper and Row, New York.
- Eccles, R., Nohria, N. and Berkley, J. D. (1992) Beyond the hype: rediscovering the essence of management. Harvard Business School Press, Boston.
- Edwards, W., Lindman, H. and Phillips, L. D. (1965) Emerging technologies for making decisions, in *New directions in Psychology* (ed. T.M. Newcomb), Holt, Rinehart and Winston, New York.

- Fontana, B. (1993) *Hegemony and Power*. University of Minnesota Press, Minneapolis.
- Foucault, M. (1977) *Discipline and punish*. Allen Lane, London.
- Foucault, M. (1980) *Power/Knowledge: Selected interviews and other writings*. Pantheon, New York.
- Foucault, M. (1981) *The history of sexuality* (vol. 1). Penguin, London.
- Foucault, M. (1986) *The care of the self*. Pantheon, New York
- Foucault, M. (1988) *Technologies of the self*, in *Technologies of the self* (eds. L. Martin, H. Gutman and P. Hutton), Tavistock, London.
- Fournier, V. (1998) Stories of development and exploitation: Militant voices in an enterprise culture. *Organisation*, 5, 55-80.
- Fox, M.S. (1983). The Intelligent Management System: an overview, in *Processes and tools for decision support* (ed. H.G. Sol), North Holland, Amsterdam.
- Freeman, J. B. (1991) *Dialectics and the macrostructure of arguments*. Foris, Berlin.
- Gergen, K. J (1992) Toward a post-modern psychology, in *Psychology and Postmodernism* (ed. S. Kvale), Sage, London.
- Goodwin, P. and Wright, G. (1991) *Decision analysis for management judgement*. Wiley, New York.
- Guillen, M. F. (1994) *Models of management*. University of Chicago Press, Chicago.
- Hogarth, R. M., Michaud, C. and Mery, J. L. (1980) Decision behaviour in urban development: a methodological approach and substantive considerations. *Acta Psychologica*, 45, 95-117.
- Huber, G. P. (1981) The nature of organisational decision making and the design of decision support systems. *MIS Quarterly*, 5, 1-10.
- Humphreys, P.C. (1984) Levels of representation in structuring decision problems. *Journal of Applied Systems Analysis*, 11, 3-22.
- Humphreys, P. C. (1989) Intelligence in decision support: a process model, in *Knowledge based management support systems* (eds. G. Doukidis, F. Land and G. Miller), Wiley, Chichester.
- Humphreys, P.C. and Berkeley, D. (1985) Handling uncertainty: levels of analysis of decision problems, in *Behavioral decision making* (ed. G. N. Wright) Plenum, New York.
- Humphreys, P.C. and Berkeley, D. (1986). Organisational knowledge for supporting decisions, in *Decision support systems: a decade in perspective* (eds. E. R. McLean and H. G. Sol), North Holland, Amsterdam.
- Humphreys, P.C. and Berkeley, D. (1995) Organisational process modelling sensitive to local cultural and social conditions, in *Work and organisational psychology: European contributions of the nineties* (eds. J. M. Piero, F. Prieto, J. L. Melia and O. Luque), Erlbaum (UK) Taylor and Francis, Hove.

- Humphreys, P.C., Berkeley, D. and Jovchelovitch, S. (1996) Organisational psychology and psychologists in organisations: Focus on organisational transformation. *Interamerican Journal of Psychology*, 30, 27-42.
- Humphreys, P. C. and McFadden, W. (1980) Experiences with MAUD: aiding decision making versus bootstrapping the decision maker. *Acta Psychologica*, 45, 51-69.
- Humphreys, P. C. and Nappelbaum, E. (1997) Structure and communications in the process of organisational change: Eastern European experience and its general relevance, in *Decision support in organisational transformation* (eds P. Humphreys, S. Ayestaran, A. McCosh and B. Mayon-White). Chapman and Hall, London.
- Humphreys, P. C., Oldfield, A., and Allan, A. (1992) Intuitive handling of decision problems: a five-level empirical analysis. LSE research papers in Psychology 92-15, London School of Economics and Political Science, London.
- Jackson, M. C. (1995) Beyond the fads: Systems thinking for managers. *Systems Practice*, 12, 25-42.
- Jaques, E. (1951) *The changing culture of a factory*. Tavistock, London.
- Jaques, E. (1976) *A general theory of Bureaucracy*. Heinemann, London.
- Jaques, E. (1989) *Requisite organisation: the CEO's guide*. Casson Hall, Arlington, Virginia.
- Keen, P. G. W. (1986) Decision support systems: the next decade, in *Decision support systems: a decade in perspective* (eds. E. R. McLean and H. G. Sol), North Holland, Amsterdam.
- Keen, P. G. W. and Scott-Morton, M. S. (1978). *Decision support systems: an organisational perspective*. Addison-Wesley, Reading, MA.
- Keeney, R.L. and Raiffa, H. (1976) *Decisions with multiple objectives: preferences and value trade-offs*. Wiley, New York
- Kieser, A. (1997) Rhetoric and myth in management fashion. *Organisation*, 4, 49-74.
- Kleindorfer, P. R., Kunreuther, H. C., and Schoemaker, P. H. (1993). *Decision Sciences: An Integrative Perspective*. Cambridge University Press, Cambridge.
- Kunreuther, H. (1983) A multi-attribute, multi-party model of choice: descriptive and prescriptive considerations, in *Analysing and aiding decision process* (eds. P.C. Humphreys, O. Svenson and A. Vari), North-Holland, Amsterdam.
- Lacan, J. (1976) The agency of the letter in the unconscious, or reason since Freud, in *Ecrits*, Tavistock, London
- Larichev, O. I. (1984) Psychological validation of decision methods. *Journal of Applied Systems Analysis*, 11, 37-46.
- Landry, M., Pascot, D., and Briolat, D. (1985). Can DSS evolve without changing any view of the concept of 'problem'? *Decision Support Systems*, 1, 25-36.
- Luce, R. D. and Raiffa, H. (1957) *Games and decisions*. Wiley, New York.
- McGregor, D. (1960) *The human side of the enterprise*. McGraw Hill, New York.

- March, J., and Simon, H.A. (1958). *Organisations*. Wiley, New York.
- Marouda-Chatjoulis, A. and Humphreys, P.C. (1997) Modelling the process of deciding in real world problems, in *Systems for sustainability: people, organisations and environments*, (ed. F. Stowell), Plenum, London.
- Merkle, J.A. (1980) Management and ideology, the legacy of the international scientific movement. University of California Press, Berkeley.
- Micklethwait, J. and Wooldridge, A. (1996) *The witch doctors: what the management gurus are saying, why it matters and how to make sense of it*. Heinemann, London.
- Montgomery, H. (1983) Decision rules and the search for a dominance structure: towards a process model of decision making, in *Analysing and aiding decision processes* (eds P.C. Humphreys, O. Svenson and A. Vari), North Holland, Amsterdam.
- Montgomery, H. (1989) From cognition to action: the search for dominance in decision making, in *Process and structure in human decision making* (eds. H. Montgomery and O. Svenson), Wiley, Chichester.
- Moore, H. (1994) *A passion for difference*. Polity Press, Cambridge.
- Paprika, Z. and Kiss, I. (1985) Interactions in decision support systems: division of labour in DSSs. *Engineering costs and production economics*, 8, 281-289.
- Parker, I. (1990) The abstraction and representation of Social Psychology, in *Deconstructing Social Psychology* (eds. I. Parker and J. Shotter), Routledge, London.
- Pfeiffer, J. (1981) *Power in organisations*, Pitman, London.
- Phillips, L. D. (1984) A theory of requisite decision models. *Acta Psychologica*, 56, 29-48
- Phillips, L. D. (1989) People-centred group decision support, in *Knowledge based management support systems* (eds. G. Doukidis, F. Land and G. Miller), Wiley, Chichester.
- Phillips, L. D. (1992) Gaining corporate commitment to change, in *Executive information systems and decision support* (ed. C. Holtham), Chapman and Hall, London.
- Postgate, R. (1964) *The making of the English working class*. Penguin, Harmondsworth.
- Raiffa, H. (1968) *Decision Analysis*. Addison Wesley, Reading MA.
- Raiffa, H., and Schlaifer, R. O. (1961) *Applied statistical decision theory*. Harvard University Press, Boston.
- Rogers, C. R. (1959) A theory of therapy, personality and inter-personal relationships as developed in the client-centred framework, in *Formulations of person and the social context*, vol. 3 (ed. S. Koch), McGraw Hill, New York.
- Rose, N. (1989) *Governing the soul: The shaping of the private self*. Routledge, London.
- Rose, N. (1992) Governing the enterprising self, in *The values of enterprise culture*, (eds P. Heelas and P. Morris), Routledge, London.

- Rosenau, P.M. (1992). Post-modernism and the Social Sciences: insights, inroads and intrusions. Princeton University Press, Princeton.
- Sandler, J. and Sandler, A.M. (1978) On the development of object relations and affects. *International Journal of Psychoanalysis*, 59, 285-296
- Silver, M. S. (1991) Systems that support decision makers: description and analysis. Wiley, New York.
- Stowers, H. (1946) Management can be human. McGraw-Hill, New York.
- Taylor, F. W. (1947) Scientific Management. Harper and Row, New York.
- Toda, M (1976) The decision process: a perspective. *International Journal of General Systems*, 3, 79-88.
- Toulmin, S. (1958) The uses of argument. Cambridge University Press, Cambridge.
- Vari, A, and Vecsenyi, J. (1984) Selecting decision support methods in organisations. *Journal of Applied Systems Analysis*, 11, 25-36.
- Vari, A, Vecsenyi, J., and Paprika, Z. (1986) Supporting problem structuring in high level decisions, in *New directions in research in decision making* (eds. B. Brehmer, H. Jungermann, P. Lourens and G. Sevon), North Holland, Amsterdam.
- Van Eemeren, F. H., Grootendorst, R., Jackson, S. and Jacobs, S. (1997) Argumentation, in *Discourse as structure and process*, (ed T. van Dijk), Sage, London.

8 BIOGRAPHY

Patrick Humphreys is a founding member of IFIP working group 8.3. He is Professor of Social Psychology at the London School of Economics and Political Science, where he convenes graduate courses on Organisational Social Psychology, Decision Making and Decision Support Systems and the Social Psychology of the Media. He led the LSE teams on CEC ESPRIT projects on *Functional Analysis of Organisational Requirements* and on *Project Integrated Management Systems* and directed the CEC TEMPUS project *BEAMS - Business Economics and Management Support* and many other projects on decision making, organisational process modelling, networking and communication support. His books include *How Voters Decide, Analysing and Aiding Decision Processes, Effective Decision Support Systems, Exploring Human Decision Making and Software Development Project Management: Process and Support*.