

# DEVELOPING DECISION MAKING IN PROJECTS: ANALYZING THE MOBILIZATION OF BIAS AND NON- DECISION MAKING IN PROJECTS

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Construction research on decision making is dominated by theories of rational cognition. Behavioural economics introduced an approach through prospect theory that is applied extensively, particularly on public megaprojects by Flyvbjerg. The theorization, especially prospect theory, has made a significant contribution, yet, remains narrow and insufficient. Research on public projects have largely ignored the seminal decision making literature from the public policy domain. This literature potentially introduces new analytical potential to provide understanding of decision making as a layered and dynamic set of processes. The concept of the mobilization of bias and non-decision making offer considerable scope to analyse and improve construction decision making. The mobilization of bias has connection to the concepts of optimism bias and strategic misrepresentation, yet takes the analysis further regarding the processes involved: how bias is mobilized, when and by whom in the hierarchy from policy decision makers down to construction management, and finally for what purpose. It further shows how non-decision making is used to defend the status quo. This is cognitively and intuitively employed by those who stand to benefit from preserving the status quo and are threatened by change. The paper provides the basis for empirical investigation of complex construction projects.

Keywords: mobilization of bias, optimism bias, strategic misrepresentation

## INTRODUCTION

Construction research on decision making has been dominated by rational models. Simon (1982) in his work provided one important avenue with a modified behavioural approach based on intended and bounded rationality. Prospect theory provided a related approach through the work of Kahneman and Tversky (e.g. 1979). Prospect theory has occupied centre stage in the influential work of Flyvbjerg and his colleagues when addressing megaprojects (e.g. Flyvbjerg *et al.* 2003, Flyvbjerg 2008). Flyvbjerg has used optimism bias and strategic misrepresentation. Optimum bias is where an individual or organization assess that they are at less risk than anyone else in the face of a negative consequence (Pinto 2013). Optimism bias can lead to the escalation of commitment in the face of cost overruns (Meyer 2014). This is motivated by the risk of withdrawal from the project, which can do reputational and short term financial damage. The organizational actor is locked into execution, yet proceeding is neither an obvious nor sensible business solution (Staw and Ross 1987). The phenomenon can also apply to the

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project front-end, especially where the complexity, costs and risks are high or are thought to have been externalized to other actors. Escalation of commitment only makes sense if justified against a realistic assessment of returns (Karlsson *et al.*, 2005, Meyer 2013); it should be terminated once this is exceeded (Unger *et al.*, 2011). Yet, many projects continue unabated (e.g. Flyvbjerg *et al.*, 2003).

Is this the best we can do in construction? Can poor project decision making be boiled down to two behavioural factors: optimism bias and strategic misrepresentation? While rationality is bounded and behaviour plays a role, the rational focus is limited. There are intuitive reasoning and subjective factors in decision making. There are socio-political and socio-psychological processes in play that go beyond the discrete events assumed and portrayed in the majority of economic decision making.

Many projects are located in the public sector and almost all megaprojects either have a client that is from the public sector or is indirectly the ultimate owner or sponsor. Even if the megaproject is entirely private, policy and public sector accountability impinge upon progressing a project, typically alongside a range of other external stakeholders from community and interest groups to other economic and environmental representation. Given this context, it is strange that little or no attention has been given to decision making on megaprojects from the public policy research domain? The research in public policy has addressed the pluralism of interests in decision making (Dahl 1957), the institutional practices that lead to an uneven power distribution in decision making, particularly evidenced through the mobilization of bias and non-decision making (Bachrach and Baratz 1962, 1970), which leads to the contribution of Lukes (1974) as to how those in power dominate over other interests, shape the preferences of others and remove conflict to the margins. This shifts the analysis from discrete factors towards process with a fuller range of rational and subjective consideration, intuition and sense making included.

A broader set of processes are needed to analyse decision making in construction, especially for megaprojects. The aim is to address project decision making by moving the emphasis from optimism bias and misrepresentation towards power towards the mobilisation of bias and non-decision making. The research objectives are to move analysis from a decision event focus towards process analysis, and from one grounded in cognitive rationality to include subjective intuition. This is supplementary to the tenets of behavioural rationality and prospect theory, yet notes its insufficiency and need for complementary conceptualization. The concept of the mobilization of bias provides a useful bridge with optimism bias, although the former is richer because it takes a longer timeframe and embraces the conscious and unconscious use of bias.

The structure of the paper is to first address current conceptualization, then move towards additional and complementary conceptualization before concluding.

## **CONCEPTUALIZATION OF PROJECT DECISION MAKING**

### **Rational Decision Making**

Cognitive rational decision making has embodied modifications around behaviour (e.g. Simon 1982) and the assessments of prospects, where decisions may become behaviourally skewed (Kahneman and Tversky 1979). In rational models, irrational behaviour is removed, only to be subsequently reintroduced as limited and discrete factors for consideration in order to try to address anomalies. The mode of reintroduction constrains them to the 'rules' of rational analysis. Rational decision making is normally conceived as a discrete event or short term series of events. This seldom accords with

reality, especially on megaprojects. Decision making is a layered process in an institutional hierarchy of public and private spheres of activity, where power and influence are at play over extended periods of time in and between the layers. Decisions develop iteratively and can be revisited. Intuitive reasoning is used and the predispositions and experience of decision makers are drawn upon.

The costs of rationality are considerable. Obtaining complete information and high degrees of transparency are high cost. Shortcomings lead to imperfect, thus incomplete and asymmetrical information. In projects, uncertainty and ambiguity are inherently high. Projects require experiential evaluation and judgment, particularly at the front end where levels of uncertainty are greatest. The land use planning literature recognizes a combination of open and closed decision making is necessary. Successful governance arrangements need to be shaped by a complex interplay between open and closed decisions in planning developments (e.g. Healey 2004), which has been re-stated in the context of megaproject planning (Salet *et al.*, 2013, Majoor 2015).

Prospect theory offers a critique of the idealized and normative model of rational choice models of decision making, which were provided by expected utility theory (Kahneman and Tversky 1979). Prospect theory specifically tries to account for perception, behaviour and risk. Risk is probability, whereas uncertainty is unknown (Knight 1921). Uncertainty is addressed at the front end by strategically scoping, assessing feasibility, and then tactically shaping and executing projects. Risks are identified as a result. Yet, decision makers can give insufficient attention to types of outcomes, which is referred to as “myopic loss aversion” (Thaler *et al.*, 1997: 648). The result is that decision makers tend towards optimum bias.

Assessing feasibility for a project in prospect theory distinguishes two phases (cf. Kahneman and Tversky 1979). Editing information to provide a sound basis for making a decision by selecting the relevant information and then evaluating the prospect in order to choose the one with the highest value. It is cognitive, rational and assumes sufficient information is available. Rationality underpins decisions except where it is behaviourally skewed by optimism bias and strategic misrepresentation. The way to address bias and misrepresentation is to apply reference class forecasting to evaluate prospects on a comparative basis so as not to solely rely on assessments of the prospects on their own terms (Kahneman and Tversky 1979).

Prospect theory decision making views the process in terms of “individual decision making” (Kahneman and Tversky 1979: 274), that is, decision making as a single event or short term series of events. The longer term and any complex structuring is not addressed. Megaproject decision making tends to be conducted medium-to-long term. Complexity and uncertainty can induce concurrent errors, running the risk of failure (Reason 2000, Love *et al.*, 2012). Errors can also lie dormant or are latent in a system as pathogens that may emerge later during the project lifecycle. Once apparent they become active failures (Love *et al.*, 2009). The best attempt of the rational approach to address these type of dynamic factors is “cumulative prospect theory” (Thaler *et al.*, 1997: 657) and repeat games in game theoretic applications, which are modelled as a series of discrete events. They do not encompass the iterative and layered processes in reaching decisions nor how these may prove to be positive or negative. Economic models and game theory are governed by assumptive rules rather than the actual prescribed formal processes, informal processes and the emergent rules of the game.

## Prospect Theory and Megaprojects

Flyvbjerg has become the main analyst of decision making in projects and for megaprojects (e.g. Flyvbjerg *et al.*, 2005, Flyvbjerg 2008, 2009). He has adopted prospect theory. He particularly focuses upon two factors: optimum bias and misrepresentation. In so doing, he emphasises the inputs from experts, such as forecasters, planners, promoters and political interests (Flyvbjerg 2007). Flyvbjerg's megaproject analysis therefore embodies the strengths and the shortcomings of prospect theory. It tends to view decisions in static ways, and repeatedly refers back to the benchmark estimates, especially time and cost, when uncertainty and a lack of reliable information were at their highest level. Demand and cost forecasts can be inflated, although forecast optimism is more likely amongst the private sector than the public sector (Flyvbjerg 2013). Forecasts are estimates that can simply be wrong, not due to bias or intent to misrepresent situations. Yet these forecasts tend to be mechanically treated as fixed and 'natural' factors. Forecasts can be wrong without any intended bias or misrepresentation being present. Bias can and does creep in as the result of decision making myopia (Thaler *et al.*, 1997), and may lead to deliberate intent to misrepresent.

Two measures are employed to overcome bias and misrepresentation - an internal and external assessment. If the project feasibility and the underpinning business case are subjected to due diligence, this provides a means of assessing or checking the decision. Due diligence is conducted through in-depth investigation into the information, covering investment, financial, legal and professional examination, which is either required in law or undertaken voluntarily (Flyvbjerg 2013). However, due diligence may be influenced by the same institutional perspectives and pressures of the original decision.

The external measure is the application of reference class forecasting (Flyvbjerg 2008). The uniqueness of projects pose a class problem for comparison on coherent basis of categorization. Large data sets are necessary for reliability. Establishing suitable reference projects because of the range of sectors, variances of project type and uniqueness of each project, as well as uncertainty, is problematic. The comparisons used in reference class forecasting ignore the power mobilized behind project decisions in shape and form, even though it is from this source that bias emanates. Indeed, some projects are even set up to fail (Yourdon 2004, Pinto 2013). Political process and the exertion of power that frames decisions is not addressed.

Many projects continue unabated (Ross and Staw 1993, Flyvbjerg *et al.*, 2003). Meyer (2014) identifies several institutional dimensions of influence, which includes portfolio and front-end factors. Where parties are aware of their optimism bias, they do not necessarily moderate their behaviour (Lovallo and Kahneman 2003, Salet *et al.*, 2012). Love *et al.*, (2012) offered a critique, saying optimism bias and strategic misrepresentation inadequately explain cost and time overruns; these 'causes' cannot be automatically deduced or inferred from manifested effects. Using cases, they did not find automatic or complete linkage. They state:

To assume overruns occur due to strategic misrepresentation or optimism bias, or a combination of both, disregards the complexities and underlying dynamics associated with the delivery of social infrastructure projects. (Love *et al.*, 2012: 569).

The different goals of different organizational actors can give rise to project dissonance (Cheung and Yiu 2006, Love *et al.*, 2012). Certain interests can manage to ensure support for certain projects, despite application of a range of checks and balances, and decision iterations, even though the value of the prospect is low. Further, value defined as inputs and outputs, and measured against the original estimates can be spurious

because value outcomes derived from value realization in use and context are overlooked (cf. Vargo and Lusch 2009). Indeed, the decision process at the front end can itself lead to the co-destruction of project value (Mills and Razmdoost, 2016).

Prospect theory offers a number of analytical insights; yet, the arguments set out lead to a critique which suggests they are too simplistic and insufficient. A more cogent and comprehensive approach is warranted for the management of projects.

## **DEVELOPING THE CONCEPTUALIZATION OF PROJECT DECISION MAKING**

### **Towards Effective Understanding of Decision Making**

Prospect theory provides a start but not an end point. Decisions involve, “*a set of actions related to and including the choice of one alternative rather than another*” (Dahl 1960: 26). From socio-political perspective, Dahl (1957) argued that there are diverse interests and power positions between actors, hence the need to examine power relationships between both individuals and organizations (Richardson 1996). The result is the need, “*to analyse concrete decisions involving actors pursuing different preferences*” (Ham and Hill 1984: 66). This approach about power and preference stimulated a debate over the nature of decision making.

Prospect theory views behaviour in discrete events, while Dahl (1957), and subsequently Lukes (1974), place emphasis upon structure above behaviour per se. Another view focuses upon process in the context of structure and power. Bachrach and Baratz (1970) view decision making as *incremental*, taking place in *stratified* and *iterative* ways. Power is exerted by actors in each stratum and at each stage. Some decisions are procedural and power is not wielded nor yielded, although this is infrequent and includes a type of rational idealism of economic based models, such as prospect theory. Actors normally set agendas in their favour to induce certain desired outcomes. There is a rationality from the self-interest viewpoint, which is not necessarily shared by other stakeholders. Bachrach and Baratz (1962) contended that power involves the creation and reinforcement of social and political values and institutional practices in agenda setting to protect the interests of particular groups. The outworking of these factors underpins the decision making process.

The first concept that Bachrach and Baratz (1970) apply is the mobilization of bias, which was developed from Schattschneider (1960). It is defined as

...a set of predominant values, beliefs, rituals, and institutional procedures (‘rules of the game’) that operate systematically and consistently to the benefit of certain persons and groups at the expense of others. (Bachrach and Baratz 1970: 43)

There is a conceptual bridge between strategic misrepresentation and the mobilization of bias. Misrepresentation in prospect theory is manifested in the decision making event as deliberate intent. The process of mobilizing bias in the socio-political view, which includes incipient and unconscious inculcation over a period and may become part of taken-for-granted thinking. The public policy literature is interested in both the source and how bias is mobilized both prior to and in the decision making event. Further, decisions are not always discrete nor short term events, but are the result of evolving views and reviews. There may be multiple iterations. This is typical for challenging and complex decisions, which many projects and all megaprojects embody, especially at the project front end.

The mobilization of bias can also be seen through the use of force and intimidation. This is the naked exertion of power. Manipulation can be applied during discussion and especially reviews. Manipulation, using information selectively, is applied to steer decisions towards certain biased outcomes and to avoid others. Exclusion is another process, which involves omitting certain decision makers on occasions. More commonly, exclusion involves blocking the expression of values that change the decision making criteria (if these have been stated) and the expression of interests. Exclusion may be linked with manipulation where groups and cliques agree preferred decisions outside the main meetings in order to exert power in a meeting to set agendas against other interests and options. In essence, the mobilization of bias involves, “*suppression or thwarting of a latent or manifest challenge to the values or interests*” and bias suppresses or thwarts “*the demands for change in the existing allocation of benefits and privileges*” (Bachrach and Baratz 1970: 44). The mobilization of bias has a deeper meaning than misrepresentation.

A second concept proposed by Bachrach and Baratz (1970) is non-decision making. Prospect theory assumes a decision, but power and related bias can be mobilized to retain the status quo. This is more than a simple basis of ‘live and let live’ or the desire to avoid confrontation. It embodies intent and a specific agenda to protect and defend existing interests. Non-decision making is an outcome, which is easy to induce for it requires no action. Manipulation can also be used to facilitate it. No decision is more difficult to challenge, and so is the underpinning distribution of power among the actors. Non-decision making retains the status quo.

Therefore, non-decision making is a particular form of the mobilization of bias. It is evidenced in various ways, for example procrastination, delays, postponement and commonly a ritual or charade at decision making meetings whereby a ‘rigorous’ process of discussion and review appears to ensue, yet is led in ways that move through the issues without making decisions or only making token decisions. Bachrach and Baratz came under scrutiny from those saying it is impossible to research the intangible or non-events that cannot be directly observed. Yet both the process can be evidenced as noted above, and the outcomes can be evaluated against other criteria, for example negative construction and project management factors bring into question a megaproject decision or non-decision taken on political grounds (see also Isaac 1987, Denham 1975). Further, natural scientists research intangible processes and events, for example in quantum physics, and indeed non-factors such as ‘cold’ being the absence of heat. Methodologies and methods have been developed for natural and social science to accommodate such factors (e.g. Sayer 2000).

Bachrach and Baratz (1970) state that power is largely rational, yet force and manipulation are non-relational and irrational. Force and manipulation are political factors. The irrational is often well-argued and can appear rational. Indeed, rational power can be reinforced by irrational decision making, although this can challenge the legitimacy of power in the long run. The use of force can also erode power, especially under extreme events and in the face of challenging decisions. Power is manifested in institutions. The application of power, combined with the status of the institution in the context, gives rise to authority. Authority can be challenged where force and manipulation are too widely used and bias or passivity dominate decisions over extended periods.

The legitimacy of power and authority invokes a third dimension in decision making, which Lukes (1974, 2005) describes as the influence of power on people. This includes

the negotiations among different groups that hold power in decision making. He examines how the dominated are prepared to acquiesce, a process where powerful groups, other stakeholders and society's breadth of interests become moved to the periphery of social and geographical space (Kühn 2015). Rituals are employed during decision making. The outcomes are presented to the media to legitimize the process, hence preserve status quo (Lukes 1977). The dimension that Lukes adds is the use of power to shape preferences of people and groups to overtly or covertly remove conflicts from decision making. Decisions that may appear consensual may have involved considerable exertion of power:

...is it not the supreme and most insidious exercise of power to prevent people, to whatever degree, from having grievances by shaping their perceptions, cognitions and preferences in such a way that they accept their role in the existing order of things (Lukes 1974: 24).

### **Towards A Decision Making Approach Suited To Megaprojects**

The work of Flyvbjerg and those that cite him has dominated megaproject decision making. A deeper and more nuanced approach is needed. Let's start with the structure. Morris identified three layers for managing projects which developed as waves chronologically (Morris *et al.*, 2011, Morris 2013). The first two are project management as execution, which is supported by the bodies of knowledge, especially PMI (2013), and the management of projects to address the front and tail ends (e.g. Edkins *et al.*, 2013). The third is the institutional level (Morris and Geraldi 2011), which is the third layer from which power is exercised and cascaded down to the project level. The layers in megaproject decision making need to be brought together to understand the processes and examine the outcomes. Combining the strengths of prospect theory, work from the socio-political and public policy arenas with a stratified approach to the management of project research, three characteristics can be identified in decision making:

1. Rational and intentional;
2. Irrationality: a) unintentional irrationality; b) intentional irrationality, which may be rationally justifiable from another institutional level of decision making on occasions;
3. Intuitive assessment informed by experience and common sense.

In the third and hence intuitive way, common sense is distinguished from taken-for-granted thinking. Common sense relies on sense making that is derived from experience and expertise that is not fully articulated or remains tacit, yet constructively informs decision making. Taken-for-granted thinking does not involve any sense making. It is based upon unchallenged values and ideas that may be inappropriate, and therefore may lead to ineffective and potentially destructive outcomes. It is an intuitive part of the mobilization of bias and may underpin non-decision making. Taken-for-granted thinking is essentially structurally embedded bias. Putting these elements together, six types of decisions are possible:

4. Rational based on complete information - *ideal* yet extremely rare.
5. Rational based on incomplete information - currently *rare*.
6. Intuitive based upon available information, experiential assessment and common sense that is unbiased - *rare* yet possible.
7. Intuitive based upon available information, experiential assessment and bias - *commonplace*.
8. Irrational decisions that are motivated by high level biased criteria - *unexceptional* for megaprojects.

9. Combinations of the above in a layered process - *the norm*.

The mobilization of bias and non-decision making occur in the last four types, hence underlines their importance. Decisions are iteratively progressed and reviewed at times at policy and operational levels. Power exerted through the mobilization of bias, including non-decision making and associated rituals to legitimize outcomes, induce lock-in without a shock to the system. Yet, bias is also aimed at creating “lock-out” for certain interests and those who represent such views. Lock out of groups and the lock in to decisions superficially creates project certainty in the stratum the decision is taken, yet typically increases uncertainty in the next layers down and in subsequent phases of execution because the real issues have not been operationally removed.

## CONCLUSIONS

The rational economic model of decision making provided the point of departure to review and critique economic behavioural approaches, specifically prospect theory. There are general shortfalls, which are amplified when applied to megaprojects. A socio-political and public policy approach was introduced, covering issues of structure and power, process and legitimacy. In particular, the mobilization of bias, as a richer and deeper yet complementary concept to strategic misrepresentation, was introduced. The nested concept of non-decision making was also introduced. Six potential decision process characteristics and outcomes were presented. The process was portrayed at incremental and iterative within a structure of institutions and organizational settings, which are imbued with power and layered from the level of public policy and to the project organization. This approach provides a broader and deeper examination of project decision making for the future examination of megaproject decision making.

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