EXPLORING ESCALATION OF COMMITMENT IN CONSTRUCTION PROJECT MANAGEMENT: CASE STUDY OF THE SCOTTISH PARLIAMENT PROJECT

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Successfully managing large construction projects within defined budget and time constraints has always been a major challenge largely because crucial decisions about the project's ultimate fate have to be made within an environment of significant uncertainty at the beginning of the project. It is not surprising that cost and time overruns are commonplace on construction projects. Existing literature often suggests economical, technical, political or managerial roots to this phenomenon. A less explored possible cause within construction management framework is the escalation of commitment to a course of action. This theory, grounded in social psychology and organisation behaviour, suggests the tendency of people and organisations to become 'locked-in' and 'entrapped' in a particular course of action and thereby 'throw good money after bad' to make the venture succeed. This defies conventional rationality behind subjective expected utility theory. Through a critical analysis of the literature, we identify different frequently cited enablers of escalation of commitment. Using a hindsight constructivist approach, we then demonstrate references to some of these enablers on the Scottish Parliament project. We found strong evidence in support of possible strategic misrepresentation, confirmation bias, self-justification and optimism bias. We highlight the importance of setting realistic time and budget constraints to circumvent escalation and make several recommendations to attenuate unwarranted escalation of commitment, including the use of an objective outsider to evaluate responses to disconfirming information and the structuring of incentive systems that do not punish for inconsistency in order to curb the effects of self-justification and reputation management.

Keywords: cost overruns, confirmation bias, escalation of commitment, self-justification, strategic misrepresentation.

INTRODUCTION

Literature in social psychology and organisational behaviour suggests that after investing time, money, energy and other resources in a chosen course of action, individuals and decision makers often become *"locked-in"* or *"entrapped"* in that course of action, sometimes even if the venture is failing. Staw's (1976, 1981) seminal work on escalation of commitment seeks to explain why decision makers sometimes embark on a questionable course of action and then persist with them above and beyond what the objective facts suggest. The thesis of his work suggests that negative feedback on a previous decision often tends to rouse the feeling of self-justification and regret of that particular decision, thereby resulting in a reinforcement of additional

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resources (money, time or effort) to try and make the course of action pay off. Consider the following situations:

1. A representative of an equity firm makes a decision to invest £5 million in a new IT start-up that is expected to take about 3 years to develop and implement. It emerges after two years that the IT firm is having liquidity issues and that the product might require additional funds of £2.5 million and a year's extension. The equity firm must decide whether to write-off the initial £5 million investment or commit the additional funds to give the project a chance of success. Should they cut their losses now, risk losing a total £7.5 million, or stake their chance at gaining much more should the project eventually succeed?

2. A Government proposes an grand project that will represent the essence and ideals of a people and be a symbol of devolution and national distinctiveness at £40 million. Two years later, it becomes obvious that it is impossible to complete the project at that cost and a new estimate was set at £119 million, with legislators imposing a cap of £195 million in the third year. By the 4th year, cost had increased to £241 million, rising twice in the 5th year to £295 million amidst several controversies. By the 6th year the cost reaches £376 million before project completion at £431 million in the 7th year.

Although each of the cases above presents different decision making situations, they both have a common trait - sequential decision patterns with one decision being made based on a previous. In each case also, a considerable amount of time, money and effort has already been committed to the venture and the results do not seem to be going as initially intended. Arkes and Blumer (1985) suggested that investment of resources often sets in motion non-rational sequential decision making process, with one form of commitment begetting further commitment. They further suggest that the more responsibility a person has for the outcome of an initial decision, the greater is the inertia towards further commitment. This tendency however, as noted by Bazerman and Moore (2008) defies the conventional rationality behind subjective expected utility theory which suggests that sunk costs or past losses should not enter into decisions regarding future gain (Bazerman and Moore 2008).

Using the theoretical framework described in the discourse above, this paper will explore the sources of escalation of commitment using the case study of the Scottish Parliament project. We examine official government publications and documentary evidence from the public enquiry that followed the controversies surrounding the project using a hindsight constructivist research approach. We focus on the events before and during the construction that created an environment for escalation and how these possibly led to the inevitable cost and duration overrun on the project. The next section of the paper explores the theory of escalation more closely, before we examine the Holyrood project for evidence of the locked-in syndrome. We then reveal some lessons learnt from the case study for construction project management with recommendations on how to attenuate unwarranted escalation tendencies.

THEORETICAL FRAMEWORK: ESCALATION OF COMMITMENT

Decision making experiments have provided a lot of evidence that individuals have a systematic bias towards escalation of commitment. Some of the reasons provided include a failure to treat previous investments as sunk cost (Arkes and Blumer 1985), self-justification (Staw 1981) and anticipated regret (Sarangee *et al.* 2013). Kahneman (1994) suggests that some decision makers use escalation of investments as opportunity to redeem a previous sub-optimal choice whiles Brockner (1992) posits that escalation tendencies may be buoyed by personal responsibility for negative

consequences. Traditional economic decision making models suggest that people are rational and would make decisions in an attempt to maximise expected utility. Sunk costs (past investments) must essentially therefore be considered as historical and irrecoverable, thus should not be considered in decisions regarding future course of action (Bazerman and Moore 2008). However, Barnes' (1984) work supports the supposition that decision making is often biased in favour of retrospective rationality-the sunk cost effect.

Organisations also demonstrate escalation tendencies, albeit in a more complex manner, according to Guler (2007). The presence of multiple members for decision making in organisations normally should increase the likelihood of recognising the irrationality of escalating commitment to a failing course of action. Bazerman *et al* (1984) thus found that groups are less likely than individuals to escalate commitment. They however added that where groups do escalate, they tend to do so to a greater degree than individuals, possibly because group dynamics tends to increase the level of justification to continue to support an initial venture. We refer to this here as the *strength in numbers* effect.

A tale of two schools
There are essentially two schools of thought on escalation phenomenon. Decision error theorists, after Staw (1976), maintain that escalation is a result of a systematic bias in decision making where people, especially those that have personal responsibility for the outcome of the project or have a vested interest in the project, interpret feedback to support their point of view (Caldwell and O'Reilly 1982). According to Nickerson (1998), this can either be intentional or that the decision maker unknowingly falls to the curse of a confirmation bias - the seeking and interpretation of feedback in ways that are partial to existing beliefs or expectations.

Decision dilemma theorists, after Bowen (1987), however point to uncertainty of information and argue that feedback is often equivocal and that it is impossible to accurately predict how any venture will eventually turn out. Hantula and DeNicolis Bragger (1999) posit that these uncertainties could explain why it may be a prudent, at least at the time of making the decision, to continue to give the project a chance. Whether the project eventually fails or succeed is not necessarily a result of one wrong decision to rectify a previous sub-optimal choice, but simply a decision made amongst many alternatives in an environment of uncertainty.

Sequential investment and escalation
Sequential investment projects are particular susceptible to escalation tendencies because the venture does not generate intermediate financial payoffs until its complete. There is also some level of uncertainty over the amount and timing of the investment that will be required over the life of the project. Each investment stage therefore presents more opportunity cost as well as a milestone to either escalate commitment or pursue an alternative course of action. As found by Shepherd and Cardon (2009) however, terminating unsuccessful projects often comes with negative attending consequences including loss of job or losing face within an organisation. Decision makers often thus attempt to keep projects running by using end-gaming and using future-perfect strategies (Clegg *et al.* 2006). Strategic misrepresentation, the deliberate distortion or misstatement of the amount of time or resources necessary to complete the venture is not an uncommon tactic either (see Jones and Euske 1991).

Table 1 summarises some of the factors that create an environment that enabling escalation of commitment. These factors will be expanded upon in latter sections of the paper with supporting evidence from the Holyrood Project.

Table 1: Escalation enablers

	Category	Description	Sources
1	Sunk-cost effects	Tendency to continue an endeavour because some amount of money, time or effort has already been invested in it. Investment begetting more investment.	Arkes and Blumer (1985), Brockner *et al* (1986)
2	Optimism bias	Overestimating the likelihood of positive events while downplaying the occurrence or severity of negative events.	Tversky and Kahneman (1974), Flyvbjerg (2008)
3	Future-perfect strategies (End-gaming)	Forward looking projection of ends with a visualisation of the means by which that projected future may be accomplished	Weick and Kiesler (1979), Clegg *et al* (2006)
4	Strategic Misrepresentation	Deliberate distortion or misstatement of the amount of resources or time necessary to achieve an aim	Jones and Euske (1991), Flyvbjerg (2008)
5	Confirmation bias	Tendency to seek or interpret information in ways that are partial to existing beliefs or expectations	Cadwell and O'Reilly (1982)
6	Norms of consistency	Consistent and decisive leaders are often viewed as better leaders. Decisions makers tend to stick to their initial decisions to main this consistency.	Staw and Ross (1980), Wellen *et al* (1998)
7	Image/Reputation Management	Not wanting to appear indecisive or incompetent. Usually driven by feelings of personal responsibility	Smith and Terry (2003), Shepherd and Cardon (2009)
8	Self-justification	Unwillingness to admit to oneself, and/or others that a previous decision was sub-optimal or wrong.	Festinger (1962), Brockner (1992)
9	Organisational & Political influences	Coercive and normative pressures using institutional power or authority	Pfeffer (1992), Guler (2007)

Construction projects normally involve a series of sequential decisions before actual construction begins. Most projects will go through long feasibility and gestation periods before project approval and eventual delivery. These phases involve an iterative process of information acquisition and incremental commitment over a period of time, presenting a conducive environment for escalation of commitment. Where a project has commercial interest and is subject to sequential investment, the project often tends to be perceived as an end in itself according to Winch (2013), and therefore must be completed, no matter what, in order to recoup any initial investments.

RESEARCH APPROACH

Winch (2013) explored the three-pronged effects of future perfect strategising, strategic misrepresentation and escalation of commitment on the Channel Fixed Link project in an attempt to develop a broader organisational perspective on cost escalation in major projects. He proposed a hindsight constructivist or historical approach as research method to help fully comprehend the organisational complexities that led to overruns. Winch suggests that this approach will help comprehend the idiosyncratic embeddedness of major construction. We adopt a similar approach in this paper as it best helps for sense-making of the political and social construct of our case study, the Scottish Parliament building (Holyrood Project). We explore escalation of commitment using official documentary evidence from the government commissioned public enquiry that followed the controversies surrounding the construction of the Holyrood project (Fraser 2004). We also examine the Auditor General's reports (2000, 2004) and the Spencely Report (2000) submitted to the Scottish Parliamentary Corporate Body.

CASE STUDY: HOLYROOD PROJECT

Completed 3 years late in 2004, at a cost of £431million, The Holyrood Building in Edinburgh houses the Members of the Scottish Parliament (MSPs). Its final cost is approximately ten times more than the headline final cost of £40million announced in the Government's devolution White Paper, Scotland's Parliament (1997). The Government commissioned the Spencely Report (2000) to investigate cost and time overruns on the project. This was followed by two major probes by the Auditor General (2000, 2004) before the defining public enquiry, chaired by Lord Fraser of Carmyllie (2004) after project hand-over to investigate key decisions undertaken throughout the project delivery. There were 66 witnesses and more than 13,000 documents examined for the Public Enquiry (PE) alone. A full transcript of the transactions at the enquiry can be found at www.holyroodinquiry.org. These reports, as well as minutes of parliamentary proceedings, provide a rich source of documentary evidence to support the empirical analysis conducted in this paper.

The Act of Union of 1707 merged the Parliaments of Scotland and England into the Parliament of Great Britain, housed in the Palace of Westminster in London. Scotland was now effectively directly governed from London as a result (Colley 1992). However, in September 1997, the people of Scotland voted *"Yes"* in a referendum that would see the creation of the first Scottish Parliament in almost 300 years. Donald Dewer was appointed Secretary of State with the mandate to oversee the construction of a the parliament house. He became the main project champion, a key player and driver of what was to represent Scottish identity and aspirations. But the euphoria surrounding the referendum at this time led to many ill-considered decisions that created a conducive environment for escalation.

Optimism bias

First was the unrealistic cost ceiling of £40million. This turned out to be a rather optimistic estimate, or better still, a guesstimate of final cost of the project by non-construction professionals. Recall that a central theme of escalation theory is the increase in resources devoted to a venture in an attempt to redeem a previous sub-optimal choice. A member of the Scottish Parliament Corporate Body, Andrew Welsh MSP, stated that *"right from the very start, the budgets were totally unrealistic. The original budgets we inherited were for a fictional building"* [11 February 2004]. Rusell Hillhouse, former Permanent Under-Secretary at the Scottish Office and a member of the team that estimated the cost of the project at £40million said *"we couldn't possibly have done a thorough job, and this was very difficult because it was a time when people were working extremely hard on other aspects of the White Paper"* [PE 30th October 2003][2]. Sam Galbraith, former Under-Secretary of State at the Scottish Office also told the public enquiry, *"the figure of £40million in the white document, was never for Holyrood. That was for a bog-standard building on a greenfield site."* [PE 28 October 2003]. When asked how he knew the figure was not for Holyrood project, he responded *"That's what Donald [Dewer] told me"* suggesting that the project champion at this stage may have been aware that the cost of the project announced to the public was unrealistic.

Self-justification, Reputation management and Norms of Consistency

Another sub-optimal decision that was made at the beginning of the project was the unrealistic completion date imposed on the project. Speed to build was priority for the project promoters who wanted the project completed within two years. This was

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[2] Abbreviations: PE- Public Enquiry; MS/SE - Documentary evidences submitted to the public enquiry

strongly criticised by the opposition leaders. In a letter to all MSPs, Donald Gorrie MSP criticised the decision of the Scottish Office and the Secretary of State, Donald Dewer, writing *"There is no need for this haste...There has been widespread informed criticism of the fast timetable, for which there is no need. Professionals and organisations favouring the Holyrood site, favour a delay while the plans, timescale and budget are revised"* [MS/16/042 - 043]. Alex Salmond MSP also insisted that there was no need to try and deliver the project within such a short duration. He wrote to Donald Dewer, *"...it is quite impossible to have any new debating chamber of quality... ready by the time of the elections to the Scottish Parliament in 1999"* [MS/1/071 – 079]. Ignoring these warnings, however, the project sponsors still proceeded with the 2 year duration.

At least three enablers of escalation might have been at play at this stage - political reputation management, self-justification and maintaining norms of consistency. Negative feedback on a past decisions calls the validity of the original decision into question and is dissonant with a decision maker's natural desire to see himself as competent. Many decision makers would often escalate commitment to their previous decision in order to prove that the initial decision was valid. In the case of the promoters of the Holyrood project, choosing a fast tract delivery method suddenly became very appealing if they had to meet 2 year deadline. Construction management procurement method was thus chosen as it has the advantage of allowing both design and project construction to occur concurrently. Using conventional construction methods of design before building would have added an extra 18months to the duration, according to William Armstrong, the Project Manager [PE 3 December 2003]. However, using construction management may well have been the single most important decision that was largely responsible for the cost and time overrun experienced on the Holyrood project. The client bears all financial risks associated with delays and design changes and final cost of the project could not be realistically known until all designs were completed. In addition, there is little incentive for the design team to keep cost low when such a method is used. Paul Grice, Clerk and Chief Executive of the Scottish Parliament told the public enquiry *'It is a fact of construction management - until you let the last tender, and settled the last claim, you can't know the final amount'* [PE 10 February 2004]. Robert Brown MSP, a member of the Scottish Parliament Corporate Body that was in charge of the project at one point aptly explains the source of the problems on the project. He noted, *"the signature design, the contractual method, and the process of developing the design detail, I increasingly came to the view that most of our difficulties [experienced on the project] were in a sense inevitable once the button was pressed at the beginning by the Scottish Office when they let the contract in the first place."*

Strategic misrepresentation

There was evidence of strategic misrepresentation, the deliberate distortion or misstatement of the amount of time and resources necessary to achieve an aim, at many stages during the procurement of the project. Five weeks after their election 1999, the new MSPs had to vote on whether or not to continue the project. At this stage, Alex Salmond MSP, leader of the main opposition party wrote to Sir David Steel MSP, the Presiding Officer of the Scottish Parliament, requesting that the project be suspended and that an estimate of possible cancellation cost be produced *"in order to properly debate the future of the Holyrood project or other alternatives"* (MS/1/083). He further wrote in a follow-up letter, *"It is now possible that we may have to consider cancelling the Holyrood project; in the circumstances it is essential*

that no further actions should be taken which would add to the cost of cancellation if this were the decision which Parliament reached." [MS/1/084]

Faced with the dire prospect of possible project cancellation, civil servants in the Scottish Office, led by Barbara Doig, the Project Sponsor, decided to hide the fact that costs were going to be significantly higher than what the MSPs were to vote upon. In a classic example of strategic misrepresentation, the Project Sponsor did not include an extra £27million for risk in the estimates submitted to the MSPs. She later insisted that she was *'confident the £27million could be managed out'* and therefore was not to be included in the information given to the members of the Scottish Parliament

The proposed vote for an amendment urging a termination of the project was defeated by only three votes. Alex Salmond MSP, later told the public enquiry that the vote was based on false information, adding, *"it is inconceivable that had the proper information been given to the members of the Scottish Parliament, that there wouldn't have been at least a delay for taking stock and reassessment... the figures, the facts, the timeline shows that when the Parliament were told they were inheriting a project of £109 million, it was actually well over £200 million and was totally out of control... Parliamentarians being misled and misinformed is a very serious issue indeed."* [PE 13 November 2003]

Lord Fraser himself makes a strong case for strategic misrepresentation on the Holyrood Project by stating *"As at the point of hand-over, where there is a very tight vote in the Parliament on whether to proceed with this particular project or not, that figure was specifically kept away from them. It looks rather as though, those who were involved in this were determined to keep the figure down as low as possible, even to the point of concealing it from the Parliament, in the hope that the project would go ahead."*

Political end-gaming and future-perfecting strategies
There was a lot of evidence supporting political end-gaming and future-perfecting strategies in the early stages of the project as well. Donald Dewer and the project team seem to have capitalised on the newly found nationalistic sentiments and euphoria around the referendum. The project was continuously presented to the public as one that will represent the essence of Scottish devolution and be an *"important symbol for Scotland"* that will *"pay tribute to the country's past achievements and signal its future aspirations"* (Scotland's Parliament 1997). Riding on these sentiments, Donald Dewer probably felt the need to build momentum and get the project started quickly. Consensus regarding some key decisions was ignored as he bypassed the consent of MSPs at many strategic stages, including the choosing of a site of the project [See MS/1/071 – 079]. It emerged during the public enquiry that he felt he had to 'endow' the MSPs with the new building and that if the decision of location of the building was not made quickly enough, the MSPs will never get around to doing it themselves. He probably also was aware that once the first concrete was poured, the project would become like a moving train that could not be stopped.

Confirmation bias
Confirmation bias, the tendency to seek or interpret information in ways that are partial to existing beliefs or expectations, played a key role in escalation on the Holyrood project. William Armstrong, an experienced project professional was the First Project Manager for the Holyrood Project at the Scottish Office. He resigned from his role because of frustrations he experienced regarding the spiralling cost and time delays. He was critical of the performance and commitment of the Architect,

Enrique Miralles writing to Project Sponsor, Barbara Doig, *"There is no indication that Miralles [can] remedy the deficiencies in time, cost and design to meet the programme."* [PE SE-4-044]. His resignation letter prophesied that if measures were not quickly taken to properly control and manage the project, the *"programme will drift, the cost will increase, the design team will make claims, the contractors will make claims, and the project will become a disaster"* [PE SE-4-044]. As indicated by Caldwell and O'Reilly (1982) and Kahneman (2011), confirmation bias leads a decision maker to underplay, and in some cases, even ignore disconfirming feedback on performance of any venture. William Armstrong's strong warnings were blatantly ignored by the project sponsor, who later stated that *'I was comfortable that a great deal was being done to ensure that we continue to be on program, that we got the cost sorted out and that we got the design to the quality required"* [PE **4 December,** 2003]. She decided instead that it was better that William Armstrong be removed from his post. He resigned before he could be fired.

Political and organisational influences

There were very strong political and organisational influences at many stages of the project as well. For example, opposition MSPs requested a two month delay in the project to examine the whole project more closely and explore other possible options. Margo MacDonald MSP insisted during a parliamentary debate that *"too many questions are unanswered at this stage, and we plead with you [Donald Dewer] for the time to find adequate answers"* [17 June 1999]. As is usually the case, those responsible for the negative outcome of a particular decision tend to maintain the norms of consistency in order not to appear indecisive or appear politically weak. Donald Dewer thus responded that such a delays requested by the opposition parties would *"cost more than £3million in contract penalties"*. He added, *"this Parliament would look like a laughing stock"* if the opposition party got its way during the debate in Parliament. When it became apparent that the opposition might be fighting a lost cause, Donald Gorrie MSP said in reference to Donald Dewer, *"it is a despotism, we have one man says what happens and we all obediently follow him"* [17 June 1999)].

There were other sources of problems on the Holyrood project including significant scope changes, the death of the architect Enric Miralles, shortly followed by the death of project champion Donald Dewer. However, we have only concerned ourselves with some of the factors that may have contributed to escalation of commitment with its attending significant cost and time overruns.

CONCLUSIONS

The present study concerns the escalation of commitment to a particular course of action in decision making. We identified different enablers of escalation from the literature including sunk costs, self-justification, confirmation bias and strategic misrepresentation. We then examined official documentary evidence on the Holyrood project using a hindsight constructivist approach for possible causes of escalation that ultimately resulted in the cost and time overruns experienced on the project. We found overwhelming evidence in support of the use of strategic misrepresentation, self-justification and reputation management during the project. The study also revealed evidence of optimism bias on the part of project sponsors in defining the budget and time constraints for the project.

The case study suggests that escalation of commitment is a complex phenomenon with additive causes from different sources. We also highlight the importance of the early stages of a project, as decisions taken at this stage become increasingly difficult to

reverse. In general, it is important for project sponsors and decision makers to be aware of the fact that their decisions will tend to be biased by previous decisions, and that we all tend to have a natural inertia towards escalation of commitment, particularly after receiving negative feedback.

RECOMMENDATIONS

Knowing why and when escalation occurs can help managers avoid this common

decision bias. However, as escalation may not always be readily obvious, it is important to put in place organisational structures that will help attenuate unwarranted escalation. The use of an objective outsider to evaluate our responses to disconfirming information, especially in situations of sequential decision making can be helpful in reducing escalation tendencies. It might be helpful to structure incentives so that decision makers are not punished for supposed inconsistency in order to curb the effect of self-justification. Increased monitoring, accountability, budget controls and scrutiny might also be helpful especially on large and complex projects.

While this paper deals with the sources of escalation and how it might be curbed, it is important to mention that escalation should not necessarily be considered as a negative tendency. There are situations where it might be economically rational to escalate commitment to keep options open or maintain personal and future business relationships. On cursory examination, this might sound divergent to the core of the foregone discussions in this paper. However, what is proposed in this paper instead is that decision makers should be aware of the difficulty of separating initial decisions from related future decisions. It might be prudent to actively search for disconfirming information to provide a balanced perspective on confirming information that we are more likely to intuitively seek.

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