



A path less-traveled has become the highway: How Peter Morris's *The Anatomy of Major Projects* pointed the way to modern project management research and practice

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Abstract

In his seminal book, *The Anatomy of Major Projects* (co-authored with George Hough), Peter Morris established himself as one of the early, original theorists in project management scholarship. Not simply a ground-breaking study of major projects at its time, *Anatomy* has proven to have both a lasting residual impact as well as serving as a wellspring of new ideas and directions for research and theory in the field. This essay, honoring Morris's impact on our scholarly community, focuses on an examination of *Anatomy* - both on its many contributions, as well as serving as the source for shifting the manner in which a new generation of academics and practitioners understand how projects can best be organized, managed, and understood.

Keywords

Project management, major projects, project success, case study

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INTRODUCTION

In the wake of the tragic passing of Professor Peter W.G. Morris, my colleagues and I resolved to offer a collection of essays on various aspects of Peter's work and the impact they had on the professional practice and academic pursuit of knowledge in project management. The ground was fertile; in fact, a more significant challenge was finding a way to limit our reflections in order to give good credit to Peter's work as well as introduce his ideas to a younger generation that may have read some of his body of work in passing but are, perhaps, not clear on just how momentous his scholarship, vision, and companionship with like-minded colleagues mattered to the discipline that we today know as project management. For my effort, I chose to examine Peter's legacy in light of his first major academic achievement, *The Anatomy of Major Projects*, co-authored with George Hough (a former Chief Executive and consultant) and published in 1987.

An essay on the impact that Peter Morris has made on the discipline of project management will occasionally, but of necessity, slip back into some first person accounts, as I work to place his influence within the broader context of what we (by which, I mean academics, mainly) knew, what we thought we knew, and what we, in fact, had not a clue about. To put this into perspective, I am quoting from a recent essay I submitted for the 40th anniversary edition of the *International Journal of Project Management*:

“Those of us who cut our teeth during the early (1970s – 1980s) period of project management theory development had a nearly empty and almost entirely open landscape on which to work. Within

academic settings, ‘project management’ existed almost exclusively within the realm of operational research, the majority of whom, if I may be permitted to state this boldly, did their seemingly dead-level best to stifle interest in the field almost entirely. Coming off the successes of PERT and CPM formulations, OR [Operational Research] scientists engaged in a process of minimization; i.e., making the field smaller and smaller by studying problems of increasingly narrow focus, with practical applications left by the wayside. Articles with titles like, ‘A dynamic programming solutions to time-cost tradeoff for CPM,’ ‘Heuristic scheduling of activities under resource and precedence restrictions,’ and ‘A weather model for simulating offshore construction alternatives’ were masterful examples of optimization, dynamic programming, and probability estimation but for me, they lacked a critical element – immediate real-world applicability or, at least, an acknowledgement that real projects rarely lend themselves to this laboratory treatment” (Pinto, 2022).

In Peter Morris' industry experience, and indeed in my own experience and research, projects were messy; project managers were an anxious breed and frustrated by the lack of embedded or even tacit knowledge that would allow them to do a better job shepherding their charges to successful completion. Offering a lecture on “Bayesian point estimation and the PERT scheduling of stochastic activities” to an engineering or marketing manager dealing with competing stakeholder demands and a rapidly closing product launch window seemed (and still seems) to me the greatest



folly: another reason why we, occupants of the fabled “ivory tower”, are sometimes held in such understandable disdain. In short, project management in its infancy offered few effective formulations that practicing managers could employ and worse, it was in danger of a reductionism that could quickly lead to practical insignificance.

It was with this mindset, born of frustration in perceiving the clear gap between the state of the academic treatment of projects and the real-world challenges faced by project managers that I first came across Morris’s book, *The Anatomy of Major Projects*. What immediately captured my attention was not just the title itself, but the words of the sub-title that followed: “A Study of the *Reality* of Project Management [emphasis mine].” A bold choice of words, indeed! Here I was, a newly-minted Assistant Professor on the other side of the Atlantic, trying to make sense of projects and their myriad complications and someone had the temerity to identify and name “the reality” of the project experience. Before the rest of us understood what “major projects” signified, while we academics (in the US, most notably David Cleland and William King) were just starting to nudge our colleagues away from the allure of math modelling challenges, Morris boldly produced a book based on a collection of case studies with the goal of demonstrating actual project management on the ground.

Professor Morris’s intent was not anti-intellectual or anti-academic in the slightest. Readers of *Anatomy of Major Projects* are still struck by the meticulousness of the examination of each case, the recording of relevant metrics, and the charting of the projects’ development in a rigorous manner. No, the real key here, for me, was recognizing that while Morris was highly rigorous, he was also

relentlessly pro-usefulness. Having personally worked on major projects and experienced their challenges and frustrations, he made it his life’s work to find ways to improve the lot of those professionals struggling with the art and science of projects. He recognized that extant project management theory was often outdated or misdirected. For example, when he developed his ideas about managing the front-end of projects (what eventually came to be known as his theory of “the management of projects”) (Morris, 1994), it reflected his understanding that simply handing a project manager an assignment over which they had no front-end input was often a disaster in the making – both for the project and the project manager’s career. “The Management of Projects” – both the theory and the title of a later book – highlighted the necessity of expanding the project manager’s brief to include active participation and shaping of front end activities, of a wide variety. But, more on this point later.

Morris’s insights were particularly powerful with regard to what he referred to as the management of key “interfaces” and the systems view of projects (Morris, 1988). In this perspective, he identified the important levels and operational sub-systems of the project management process, linking these interfaces with the project life cycle. Issues of project contingency (“it depends”) are central to these ideas and Morris notes that the stage of the project must affect the manner in which we understand team behavior, conflict, planning/strategy. Moreover, his theory of project control mechanisms are fascinating, as was his observation that cybernetic control (the process of “steering” the project) must vary, depending on the stage of the project life cycle and the demands that the project places on the team. These

insights, coupled with his broadening the scope of the project management challenge to include a host of behavioral challenges, offered the first fully-rounded analysis of the sheer complexity of major projects.

In developing one of the first in-depth analyses of case-by-case project developments, Morris was then in the position to also cast a critical eye, born of his own experiences, over the various professional project organizations (APM, IPMA, and PMI) and their bodies of knowledge. He led a reshaping of the APM's approach to the knowledge needed to manage projects and was justifiably proud of the resulting guidelines which, in many ways, reflected a clearer understanding of what was needed to successfully manage projects (Morris, et al, 2000). While PMI was still producing a PMBoK heavy in "execution orientation" concerns, Morris was pushing for a more comprehensive, behaviorally-based focus, including conflict management, stakeholders, communications, human resource management, and supply chain consideration. I will develop this point in more detail after we consider the contributions deriving from *The Anatomy of Major Projects*.

Peter Morris was a keen historian of the development of project management and a major theme that ran through his most important works was to chart the evolution of both methods and attitudes toward managing projects. As a result, what we have in *The Anatomy of Major Projects* is an erstwhile retrospective on the histories of eight large projects but written in such a forward-thinking manner that his analysis is both reflective and prescriptive. This is not a "history" so much as a normative call for action, all framed within the lessons learned of the projects he studied in depth.

THE EIGHT CASE STUDIES

Immediately obvious was the breadth of major projects selected for their study. Morris understood that adopting a too-narrow focus would limit the validity of his research to a small set of these projects. In seeking broader cases, he was also seeking broader truths – principles that could be proffered and defended in developing a more substantive sets of guidelines for managing major projects. The brief descriptions of the projects are only for clarity's sake. Superficially, one might view the eight cases studies as dated, comprising a set of major projects that, by today's standards, would hardly qualify for the magic "mega-project" category. If we look more closely, however, and evaluate them within their own historical context, we find that Morris developed a remarkably diverse set of projects, including nuclear power, a precursor to high-speed rail, large-scale IT development and implementation, a space mission, off-shore oil field development, and some of the more important construction projects from that era (Thames Barrier and, of course, the Channel Tunnel). I have offered a very brief description of the key features of these eight major projects below. For a more in-depth assessment and description, I would refer you the Dalcher's (2012) excellent article on the subject of this book. In a nutshell, the cases upon which Peter formed his theories comprised the crème de la crème of current major projects across multiple industries.

Channel Tunnel (1960-1975) – (Note, Morris was describing the case of an earlier and ultimately failed attempt to build a fixed link between the UK and France, under the English Channel. This was eventually achieved by a later project, organized by the Eurotunnel consortium, that started in 1988 and completed in 1994). Although initially greeted with enormous



fanfare, political in-fighting, stakeholder conflicts, increasingly apparent gross under-estimation of costs, and the lack of a clear “client,” the project was abandoned before any actual digging took place.

Concorde – the famous story of the development of the joint-venture project, the first commercial Super Sonic Transport (SST), was a technical achievement of the first order. The combined governments of the UK and France had less success in generating much in the way of sales or wider acceptance, while being equally unable to shift future costs and risks to the major contractors.

The Advanced Passenger Train (a precursor to High-Speed Rail) – a project that sought to improve rail commuter experiences through faster trains, the APT was actually a technical solution to the challenge of dealing with an existing, curvy rail system through modifying train carriages with new suspension systems.

Thames Barrier – Regular storm surges up the Thames River had, for centuries, led to riverfront destruction, and routine flooding. Built downriver from London, the Thames Barrier was a challenging construction effort to erect a system of barriers that could be raised and lowered to minimize storm surge damage.

Heysham 2 Nuclear Power Station and the AGR Programme – A success story, the development of this advanced gas-cooled nuclear reactor benefitted from previous lessons learned in other more costly ventures and presented a technical achievement when it became fully on-line in 1988.

The Fulmar North Sea Oil Field – The fascinating development of an oil field in the North Sea, this major project

encountered a variety of physical and environmental challenges along the way.

The Computerization of PAYE – One of the earliest in-depth case studies of a national data processing project aimed at computerizing the tax payments of more than 27 million British citizens. The project progressed fitfully, under constantly changing scope, successive governments that were more or less positively disposed toward the scheme, before being delivered successfully.

Project Giotto – The European Space Agency (ESA) developed a project aimed at launching a spacecraft into geostationary orbit and from there, fly by and study Halley’s Comet in close proximity. Because of the date when the comet would be closest, the time of the actual contact was 13 March 1986. The technical and schedule challenges were paramount: This project had a locked-in deadline, with no overrun possibility.

Retrospectively, it is worth noting that another value of Morris’s book lies in reflecting on the manner in which problems and challenges in these projects, though decades old now, are still highly relevant for current major projects being undertaken. Indeed, one is reminded of the old French adage: *Plus ça change, plus c'est la même chose* (the more it changes, the more it’s the same). One has only to examine a random handful of modern major projects across multiple industries to find evidence that, sadly, our reach is still exceeding our grasp. Costs are typically underestimated at the front end and then readjusted, schedules lengthen in execution, and technical challenges are encountered and addressed, often reactively. And yet, out of this mixed bag of projects with varying outcomes, Morris was able to articulate

*some critical themes that still resonate with project researchers and practitioners; in fact, they may be argued to have more value today because we better understand them than we did when *The Anatomy of Major Projects* was first published. It is to that subject that I would like to turn in the next section.*

CRITICAL THEMES FROM PETER MORRIS' WORK

Morris's decision to center his work on an assessment of several examples of large projects demonstrated the application of case study research in a way that has not fundamentally altered in the near-35 years since the book was published. The project themselves were analyzed in great detail, with clear timelines of development, cost and schedule metrics. After addressing the cases in the second section of the book, Morris devoted the final section to reflecting on some central themes that emerged from his analyses, offering patterns in how the projects evolved and the project management actions necessary to lead them successfully or, when necessary, to manage their cancellation in the most efficient manner possible. In this section, I offer my thoughts on some of the critical themes from his book and their application for current and future project management scholarship and practice.

Major projects have a poor track record.

They overrun their targets with depressing consistency. In an era in which the work of Professor Bent Flyvbjerg has put the light directly on the poor track record of entire classes of major project (such as rail and other infrastructure, major dams, IT projects, Olympic games), it is useful to remember that Morris and Hough first highlighted this challenge in the form of their own diverse set of eight major

projects. Although their research consisted of a limited number of cases studies, rather than the large data sets Flyvbjerg and his colleagues have amassed, their findings were remarkably consistent with more modern assessments. In short, the "reality" of major projects is that they are massively complicated, involve numerous moving parts (including technical, administrative, political, behavioral), and often, produce a result that is less than desired or expected.

The Anatomy of Major Projects broadened out the construct of project success. The "iron triangle" of project success (cost, schedule, and quality) has been identified and discussed numerous times over the past decades. Aside from several valid criticisms of the model, including its focus on internal efficiency metrics, narrowness of assessment criteria, and so forth, *The Anatomy of Major Projects* was the first work to demonstrate a stakeholder-centric approach to success. The book highlighted success in the following ways: (a) Project functionality: the financial or technical performance from an owner or sponsor perspective; (b) Project management: the degree to which implementation meets the budget, schedule and technical specification; (c) Contractors' commercial performance: the commercial benefit to the service provider (in either the short or long term).

Their findings are hugely interesting and there are several points that need to be made here. First, Morris highlighted a phenomenon that was later codified by Cooke-Davies (2002) and others on the distinction between project success and project management success (Prabhakar, 2008; Serrador and Turner, 2015; Ika, 2009). Morris used terms like "efficiency" to describe the best means for internally managing a project while observing that efficiency, though a useful starting point,



was not itself sufficient to get the job done. Likewise, project outcomes needed to focus on achieving their strategic goals, by meeting the originally-intended market outcomes. Benefits realization (see, for example, the recent work of Zwikael and colleagues – Zwikael and Smyrk, 2011; Zwikael and Smyrk, 2019) is directly linked to these earlier conceptualizations of success in a commercial context. Second, Morris was perhaps the first scholar to identify the temporal element in project success, observing that determining a project's success pretty much depends on who you ask (stakeholder opinions vary dramatically) and when you ask it (today's perceived failure may be tomorrow's rousing success and vice versa). Also quite jarring at first glance was his observation that the efficient termination of a failing project can actually be another form of success. As he notes:

“There could also be a fourth measure: in the event that a project needed to be cancelled, was the cancellation made on a reasonable basis and terminated efficiently?” (Morris, 1987, p. 193).

This is heady stuff! If we reflect on this latter idea for a moment, it offers an eyes-open view of the reality of many major projects; that they often run into trouble, that this trouble can ultimately reach insurmountable levels, and should this become the case, that a kind of success can be found in facing up to the truth and cancelling the project as efficaciously as possible. To date, not nearly enough work has addressed the implications of, and activities involved in, a properly-managed failure.

Morris was an early scholar in addressing critical success factors within projects. The earliest distinctly “project”

critical success factor (CSF) work is generally accepted to be Baker, Fisher, and Murphy's governmentally-funded study from 1974. However, the topic languished following their original analysis and it wasn't until Morris's *Anatomy* that the CSFs related to major projects were addressed. Among the more interesting of these factors were stakeholders (their identification and a consideration of their specific and competing needs and expectations), politics (the process of negotiation and satisfying the simultaneous project requirements), and technology and innovation. Having mined a parallel shaft during the same decade with my own work on CSFs, Morris's work not only complemented my efforts, but we found that this mutual interest in CSFs (though we developed our sets using very different methodologies) and the broad confirmation we each provided the other was the starting point of our own future collaborations (Two people equally committed to the “reality” criterion for project research, you might say).

Anatomy of Major Projects was a “Proto” Management of Projects work. It was through the collection, analysis, and development of principles for guiding major projects that Morris's subsequent work on the management of projects (Morris, 1994) is most easily understood. In short, he understood that a discipline that was all about project delivery could not hope to correct the depressing track record that we had compiled to date – of project after project overrunning their budgets and schedules, while delivering questionable quality (Pinto and Winch, 2016). No, the locus for “fixing” project management lay in preparing the ground, what he would term the “front end” of the project. Not only were project battles won and lost there, but it was incumbent that project managers' responsibilities extended to a point as early



in the project's chronology as possible. Morris's work on "project definition," including strategy and finance, technology management, commercial and supply chain challenges, and organizational structure all arose, I would argue, as a result of observing the challenges major projects faced, the ways they got into trouble, and the roles that successful versus unsuccessful project managers played in their fates. Morris argued as early as *The Anatomy of Major Projects* that these project organizations were getting it wrong; they were assigning project managers to their roles much too late in the development cycle, often after most critical decisions had already taken place. But more on this point below.

Morris reconceptualized the role of the project manager – We aren't a delivery-oriented profession; we have to be all about the front-end involvement, stakeholder identification and management, supply chain development and validation, technology verification, and so forth. Morris saw the role of the modern project manager as relatively akin to that of an organization's CEO; someone who had a breadth of responsibilities, could apply creative solutions to seemingly intractable problems, and had the skills to work harmoniously with numerous internal and external stakeholder groups. The project manager, to Morris, was the lynchpin in the enterprise and as such, had to have the right mindset and toolkit to get the job done. I suspect that it was as a result of his studies of these projects and the use (and misuse) being made of project managers in their delivery that partially prompted him to focus his energies on revising the APM Body of Knowledge (Morris, et al, 2000). Having seen – first-hand and in-depth – the myriad duties of project managers in shepherding these projects, he was able to cast a critical eye at the Body of Knowledge

and point to some obvious gaps in theory and practice. Morris, as I know from personal experience, was not shy about criticizing both the APM and Project Management Institute's (PMI) bodies of knowledge where he saw them deficient. He was successful in promoting and directing the major changes to the APM BoK, though it would take longer for PMI to catch up. He remained scathing in his criticism of the slow changes enacted by PMI that still, in his mind, led to a substandard explication of the "real" duties of project managers. For example, he noted:

"The PMBoK underplays to the point of almost missing completely management's role in the development of the project front-end: the establishment of the project definition and targets, precisely the area where evidence shows management needs to concentrate" (Morris, 2013; p. 60).

Morris elaborated on this idea with another observation of equal power, noting: "[T]he PMBoK Guide did not, and still does not, represent the knowledge that is necessary for managing projects successfully but only that which is considered truly unique for project management" (Morris, 2013; p. 54). It is only through an honest assessment of the "true" nature of project management duties that we can begin to train a new generation of project managers, a generation armed with a mindset that is both strategic and tactical, that understands the need for internal efficiency and external commercial success. When we correctly regard that which is the challenge of managing major projects, we can start to focus on real skills that matter.

The strategic management of projects and the application of organization theory are themes that feature heavily in Morris's work. Morris was one of the first to identify and specifically name the role of politics and political actors as critical stakeholders in major projects. If we employ a standard definition of organizational politics, it suggests behaviors by an individual or stakeholder group that are self-serving and undertaken to attain power or protect resources using means not endorsed by the project organization (Drory and Romm, 1990). In his case studies, Morris saw this political behavior and stakeholder challenges as a recurring problem that project organizations had to learn to deal with. As I noted, *The Anatomy of Major Projects* offered a “proto-Management of Projects” theory base; it also served as the first introduction to the ideas that a variety of organization theory concepts – such as culture, structure, politics, requisite variety – would factor heavily into the practice of successful project management. Understanding the links between project management and these ideas in organization theory opened up the horizon to a later generation of scholars addressing project management settings and practices in innovative ways.

CONCLUSION

The title of my brief essay suggested that the path less taken had, over time, become the highway. I hope by now that my meaning has been made clear. Peter Morris's first truly significant work, *The Anatomy of Major Projects*, served as the basis for ushering in a new way of conceiving of and managing projects and major programs, up to our current use of the term “mega-project” to signify what is

essentially the same thing. Those of us old enough to have read Peter's book when first released marveled at the scholarship and the power of the arguments he and his co-author, George Hough, made as they reflected on the manner in which major projects were being managed. Identifying the “reality” of major projects, Peter pulled no punches and in demonstrating a clear-eyed understanding of how modern projects get managed for success (or mismanaged for failure), he opened the doors to hundreds of subsequent scholars and many thousands of practicing project managers to do a better job. “Reality,” part of the subtitle of this classic, particularly resonated within practitioner circles and project-based organizations, elevating discussion of “projects” to the executive offices, often for the first time. As Edkins (2021) points out, one of the major achievements of *The Anatomy of Major Projects* was to demonstrate the unhappy truth that during the first phase of many (most?) projects – the external environment and uncontrolled stakeholders simply weren't present and projects often delivered success by a willingness to simply throw resources at them, due to their political (Apollo Program), military (ICBM and Polaris missile programs), or shareholder (oil and gas projects) significance. It was only as the ambition for new forms of projects in new areas highlighted by Peter (e.g., Channel Tunnel, Concorde, early IT) started to “expose” and highlight the embedded flaws of this select set of projects, closed as they were to all the intervening “external” forces and concerns – stakeholders and customers, inflation, political vanity and media attention – that the wider interest in project management took off, demonstrating to us the shallowness and limited set of tools contained in the existing bodies of knowledge.



Peter Morris's role in the development of project management theory, the understanding of what makes successful projects, and his tireless efforts to promote and expand the development of a project management profession have proven invaluable to where we are as a scholarly community and for the practical discipline. His efforts to build world-class faculties during his career at University of Manchester and UCL led both those departments to hold some of the top scholars in project management while conducting work of high significance. Those of us who had the privilege of knowing Peter personally were always taken by his self-deprecating manner and his unwillingness to give in as his physical health deteriorated. Indeed, one of my most enjoyable recollections of Peter was when, while clearly suffering from the effects of health issues which would, inevitably, overtake him, he was excited to show me his latest efforts – the development of methods for employing project management to combat global climate change (Morris, 2017). After completing his magnum opus, *Reconstructing Project Management* in 2013 and beginning to wind down his department head duties at UCL, he remained a restless soul – putting his considerable intellect to work in applying the discipline he loved to one of society's most immediate and pressing concerns. Such was his confidence in the value of project management that he had no doubts that it could work in any setting, up to and including preserving our planet.

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