Breaking out of the Failure Mode with Best Practice Decision-making Processes

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ABSTRACT

Every other organizational decision fails, posing questions about causes and remedies. Research shows that failure stems the actions of decision-makers. Process reveals how decision-makers stage their actions. A "discovery process" that places stages of reconciling claims, implementation, and direction setting early in the effort is more apt to be successful. Innovation is feasible and evaluation meaningful in such a process. Debacles – decisions with bad practice producing big losses that become public – and failed decisions - those with bad practice and big losses that evade public attention – have much in common. Both apply an "idea imposition process", in which the decision-maker select among claims and impose a ready-made idea. Failure is four times more likely when this process is used. The paper documents how decision makers slide into an idea imposition process and how to improve matters using the Ford recall, EuroDisney, Nestle, and Denver International Airport as exemplars.

Keywords: Decision making; Process; Best practice

I.   INTRODUCTION: LAUNCHING A DECISION DEBACLE

After 1100 incidents, 57 lawsuits, and 119 deaths Firestone finally recalled 6.5 million of its most widely used radial tires. "What took them so long" critics in Congress and elsewhere ask? In one of the first lawsuits to come to trial, Firestone incurred nine thousand dollars in fines before handing over documents describing test results and employee depositions about them. The documents show that the tires, which are widely used on Ford's hot selling Suburban Utility Vehicles or SUVs, have treads that peel off like skin from a banana causing an SUV to veer and roll over. Hot weather, high speed, and under inflation of the tires increase the hazard. Soon Ford, the biggest user of the tires, and its long-time alliance partner, Firestone, began finger pointing. Ford officials conceded that the company had been aware of tread separation incidents in South America, but claimed Firestone's delayed the recall. Firestone officials admit that the tires were mislabeled as having an extra nylon strap, but say that they built them according to Ford's specifications. They also point out that the Ford Explorer and Expedition manuals recommend tire pressures below that suggested by Firestone to soften the ride and said that this contributed to tire's failure. Consumers Report magazine published an analysis of Ford's SUVs ten years ago, contending that the Ford Explorer and Expedition were subject to roll over. Ford denied the claims but has redesigned the vehicles in 2001 along the lines recommended in the CU report. This puts a new light on the Ford - Firestone tire-failure debacle. As the accident toll swelled to over 6000, with 174 and 700 injuries, the Ford-Firestone feud became bitter, and very public. To preempt action by Ford, Firestone severed its nearly century-long supplier relationship with Ford. Ford responded the next day and announced the recall of an additional 13 million vehicles that were equipped with Firestone tires, at a cost of $3 billion. Critics fault the National Highway Safety Administration (NHTSA) as well as Ford and Firestone for not acting before so many lives were lost. Trial lawyers and industry observers' claim that Firestone and Ford face a 50 billion dollars loss in law suits and lost sales. The CEO of Bridgestone, Firestone's parent, was called by Congress to testify to about the recall failure and subsequently resigned. The CEO at Ford was pressured to resign. To squash the controversy, both companies are settling accident claims out of court.

Is such a debacle an isolated incident? Are debacles preventable? Recall snafus are hardly new to the automobile industry, or to Ford and Firestone. But are such debacles everyday occurrences? The answer may be surprising. Not all decisions have the visibility of the Ford/Firestone recall fiasco. What about the rest - the failed decision with big losses that evade public attention? After all, a debacle is merely a botched decision that attracts attention and gets a public airing. The Ford/Firestone recall and failed decisions have much in common (Nutt, 2001a; 2002). And failure occurs far more often than organizational leaders realize - half of them fail - making failed decisions a commonplace event in organizations (Brown and Eisenhardt, 1997; Nutt, 1999). Many decisions are discarded without so much as a try. Money is spent, but no benefits are realized. Debacles would be far more prevalent if failed decisions were to become public. If every other decision fails when someone is watching, the true failure rate may be even higher. The failed decision that avoids becoming a debacle is

apt to be covered up by people with something to lose. Considering the vast sums spent on decisions and the benefits foregone finding ways to avoid such failures seems vital.

The paper addresses two questions: what causes failure and what can be done to prevent it. The issue will be set in sharp relief with debacles – decisions that went very wrong – to illustrate key points. The blunders found to be the cause of debacles and failed decisions will be discussed along with a decision making process that can evade the blunders. A summary of decision-making research is provided to isolate best practices. Propositions are offered to summarize the best practice process recommendations.

II.   THE BLUNDERS

The startling rate of failure poses a question: Why is there so much failure? Research finds that decision-makers make three blunders (Nutt, 2002). Premature commitments, spending money on the wrong things, and using failure-prone decision-making practices point them toward failure. Rush to judgment, poor allocation, and bad practice are called blunders because decision-makers fell victim to them so often, and do so with so little reflection. A chain of events that leads to failure starts with one or more of these blunders.

Premature commitments are seductive and often deadly (Allison, 1971; Copperrider and Srivastra, 1987). Many decision-makers jump on the first idea that came up and then spend literally years trying to make it work (Brunsson, 1982; Starbuck, 1983). This rush to judgment is a prime cause of failure. Decision-makers often fail to see that they do not see how a premature commitment can be deadly. Being repelled by fear or drawn to self-gratification pull decision-makers toward the rush to judgment. The loneliness one feels when grappling with a tough decision and the longing to meet ones responsibilities can elicit fear. Self-gratification is feed by ego, lust for power, and greed. One or the other makes decision-makers unwilling to step into the unknown and remain there until true insight can emerge. Time pressure appears to mount with the urge to set aside ones fears or take a hedonistic path. Decision-makers took short cuts when this pressure became intense. Looking for good ideas gets set aside for homilies such as, "why rediscover the wheel when someone may have done it for you". One response is to copy the practices of a respected organization to "get on with it". This is rationalized as being timely and pragmatic. But such a short cut often leads to unanticipated delays as attempts are made to convince stakeholders that the company's interests, not the decision-maker's, are being served and retrofits are made.

Managers fail to use their resources wisely (March, 1981; 1994; Eisenhardt, 1997). Blunders are made, for example, when decision-makers use their time and money for analytic evaluations and little else. To make matters worse, these evaluations are often defensive - carried out to defend an idea that people have become wedded to, trying to show that it will work (Starbuck, 1983). Expensive analyses were undertaken in the debacles to demonstrate that the decision-maker's idea was useful or doable or both (Nutt, 1998a). Such analyses seem pointless, carried out merely to justify what someone wants to do or must do to satisfy others. This creates an impression that a

decision-maker's motives are less than pristine. People suspecting that hidden motives are at play become suspicions. The appearance of a vested interest, even if there is none, prompts questions. To fend off these questions the expenditures for evaluation grows as more and more justification is called for. This persists even when the defensive evaluation is avoided. Managers in my studies were willing to spend vast sums on uncovering the benefits of a proposed solution, but little on anything else (Nutt, 2002a).

A failure-prone decision making process, made up of several ill-advised practices, is followed in two of three decisions. Let's preview a few. Failure-prone process is used and better ones ignored when decision-making practices with a good track record are commonly known, but uncommonly practiced. Nearly everyone is aware of participation and its ability to coax acceptance, but participation is used in just one of five decision-making processes. There are subtleties. Managers drawn to finding and removing problems fail to see that this practice prompts blame. Indicating what is wanted, such as lower cost, liberates subordinates to look for answers. Finding problems, why are costs high, alerts people that blame is about to be dispensed, which prompts defensive action. Energy is directed away from finding answers and funneled toward protecting the subordinate's back. Ignoring participation and incorporating problem solving in a decision making process are two of several practices that set one on a failure path.

One blunder leads to another. A rush to judgment skips important process steps so no time or money is spent on them and conserving money leads to skipping steps. Failure-prone processes seem to be quick so using them appears to be a pragmatic way to save money. Or budget limitations draw one to use a ready-made remedy found in the business practices of others.

III.   WHY DEBACLES

Decisions that became debacles show how a decision can go wrong, why it went wrong, and what changes in decision-making practices improve the chance of success. Debacles follow a tradition set by Snyder and Page (1958) and their study of the Korean War, Allison (1971) and his exploration of the Cuban missile crisis, Hall's (1984) exposure of the BART fiasco, and Mckie's (1973) study of London's aborted third airport. Debacles put the blunders in sharp relief. And the actions that lead up to failure point to how things could have been done differently. Decision-making involves more than choosing among available courses of action. To avoid the blunders that lead to debacles, decision-makers must work their way through a process that stages crucial activities. Key points in the paper will be illustrated by drawing on the decision to locate EuroDisney in France, Nestles' marketing of infant formula, and Denver's new International Airport (DIA). Table 1provides an overview of the flow of events in the EuroDisney, DIA, and Nestle debacles, documenting several choices that lead to the pivotal decision. The pivotal decision always has a "go/no-go" character, such as deciding whether to act on an idea, follow a commitment, or make a change in how an organization does business. Table 2 summarizes the steps taken to make each decision.

Table 1
The flow of actions in the debacles

Choices	Constructing the DIA	Nestles Infant Formula marketing	EuroDisney Location Decision
Actions before	• Legal problems arise in Stapelton's expansion plan • City and county politicians endorse new airport • Pena elected on new airport platform	• Market infant formula aggressively to developing countries • Respond to "Baby Killer" report	• Realize Walt's dream • Tokyo Disneyland success creates cash needing reinvestment • Commitments to land, hotel space, and royalties sought
Pivotal decision	Build a new airport	Continue third world marketing	Locate in France
Actions after	• Continental and Untied stopped paying for planning • DIA site annexed by county • Critics call for a vote • Election supports DIA • Opening delayed five times due to design problems	• Nestles sues activist groups that translated "Baby Killer" report, claiming Nestle responsibility • Continue with defensive posture to counter boycott by activist groups • Choose to fight the boycott behind scenes	• Cut ticket pricing • Allow alcohol • Permit picnicking

A.   The EuroDisney Location Decision

Michael Eisner called a press conference to announce that EuroDisney shares are being offered on the Paris Stock Exchange and got pelted with Brie cheese[1]. Not exactly the reception he expected. But why the surprise when French intellectuals had been calling the project "Euro-Dismal," among other things?

Walt Disney supposedly dreamed of such a park and of making his presence felt in Europe. His fascination with all things European began with the early Disney stories that were rooted in European folklore. This gives the commitment to a theme park in Europe a very long history. The idea of a theme park in France emerges in 1976 and percolates until French dignitaries took Disney executives on tours of possible sites in Northern and Eastern France in 1982. Soon after, Tokyo Disneyland opened and became an instant success, shattering previous attendance records. A European park seemed the ticket to fuel the Eisner legend one more time and he authorized a search for a European site. Two hundred sites were considered, but the list was quickly narrowed to locations in Spain and France. France won out because of its central location, offering easy access to most other European countries, and because the French provided considerable financial bait. These positives were thought to offset the negatives found in the weather in France and the sour national disposition of the French.

Table 2
Profiling the decision debacles

Flow of events	Denver International Airport (DIA)	Nestlé's Infant Formula	EuroDisney Location Decision
Claims	New airport	Infant deaths not caused by marketing practices	Walt's dream for park in Europe
Core concerns or considerations a) Uncovered	Safety Hazards at Stapelton Airport	Deaths due to misuse of product	Past park fiascoes (land in Anaheim, Hotels in Orlando, and equity position and character royalties in Japan)
b) Hidden	Airport's link to economic recovery	Deaths caused by formula or unsafe practices	Better way to use funds
Directions	Economic benefits of airport for the city	Protect market share	Best location
Options Considered	Remodel Stapelton or a new airport	a) fight boycott b) ignore boycott c) change marketing	Locations in France
Extent of Search and Innovation	Benchmarked existing airports	Only conspicuous alternatives considered (e.g. pricing options ignored)	Solution (park) displaced any problem analysis
Use of Evaluation	Demonstrate feasibility with use and cost estimates	Determine profit in third world sales	Insure past fiascoes not repeated
Impact of Evaluation	New airport made to seem desirable	Continue with marketing (status quo option)	Ignored new situational constraints (French culture)
Barriers to Action	When misrepresentations came to light, opposition was likely	Fear of lost sales. People unwilling to question higher ups.	No one would argue with Walt's dream. Caught up in events
Ethical Questions	Corporate welfare	Locus of responsibility for how product used	Values implicit at Disney (e.g. alcohol) accepted
Barriers to Learning	Decision-makers gone, blame management	Rightness of cause kept TMT from seeing controversy	Always one park behind

Disney executives were determined to correct errors made in their other park projects. Investors snapped up the undeveloped land surrounding Disneyland in Anaheim, limiting the park's expansion. The Orlando Park site had plenty of land, but Disney underestimated the demand for hotels and lost an opportunity to make huge amounts of money on hotel space. In Tokyo, Disney failed to get an equity position in the park and failed to secure royalties for the use of the Disney characters. Disney executives were determined to avoid these fiascoes. To sweeten the deal, French officials sold Disney 4800 acres, about 20% the size of Paris, at early 1970's prices. With cheap land and low property taxes, Disney thought it had the prospects of making a killing in real estate because Land prices had increased by 20% a year in Anaheim and 30% in Orlando. The French loaned Disney $800 million for 20 years at 7.85%, a very favorable rate in 1987. Disney took the cash and invested $700 million to form the EuroDisney Company in which Disney has 49% equity. Disney negotiated a management fee of 3% of revenues and earns an additional 5 to 10% of revenues from other fees. Disney was also given 17.5% of a private partnership that was created to own the land. Industry observers found the deal to be so cleverly crafted they predicted ecstatic Disney shareholders. Still, the decision to build a park and to locate it near Paris lacked a grasp of expected results. Was it Walt's dream, more profit, or what?

Like other decisions with an early commitment to a solution, analysis is carried out to bolster the decision. Cost was estimated in 1988 at $2.5 billion. The actual cost was $4.4 billion. Flush with the success of Tokyo Disneyland, attendance projections were set at 11 million. Ticket prices were set at $51 for adults and $34 for children, compared to $40 and $26 respectively in Orlando, thinking that a Disney product would sell regardless of price. Disney managers contracted for the construction of 5200 hotel rooms priced from $97 to $395 per night. The assumed occupancy of 76% depended upon over-night stays by park visitors. Restaurant sales were based on the assumption that park visitors would want lavish, sit down meals. No alcohol was to be served, in keeping with Disney "family values" practices. Disney estimated each visitor would spend $28 per day on food and merchandise. Because of harsh French winters, much of the park was to be built inside in the hopes of maintaining a year-round flow of visitors.

None of this took into account the desires and values of the projected park visitor. EuroDisney revenues fell far below expectations. Park visitors did reach the 11 million forecasted, but only after steep discounts in the ticket price. Hotel occupancy at 37% is light years from the expected 76%. Disney had $960 million in losses in the first year of operation, although some stemmed from a $600 million one-time write off. Considering operating revenue, losses pilled up at a rate of $1 million per day. By 1994 losses had reached nearly $400 million. The damage to Disney's image grows as observers, such as Time Magazine, feature company problems and second-guess company decisions.

What can we say about the location decision? Examination of the European and French cultures by Disney people would have been useful. The decision not to sell alcohol prompted a confrontation with French and European lifestyles. Europeans have a tradition of bringing food to parks and Disney did not allow for picnics. Lavish spending for sit down dinners is overly optimistic and inconsistent with customer expectations. An American park in America made "Americana" accessible to

Europeans. Seeing the same thing in Europe is less appealing. Also, exchange rates were not favorable when the park opened. It cost less for Europeans to travel to Orlando than to EuroDisney. And, the weather in Orlando is better. The decision to increase ticket prices by 30% over American Park standards ignored an ongoing European recession. Lower prices would have increased park attendance and perhaps food and merchandise sales as well. Locating within 70 miles of Paris, one of the most popular tourist attractions anywhere, made EuroDisney a one-day stop on the way to somewhere else. Hardly anyone needed or wanted to stay overnight at the park. The superiority of public transportation in France, compared to the US, makes it easy for people to make day trips and avoid pricey hotels. Disney failed to visualize the park as a new experience for Europeans. Instead, they applied old formulas filled with questionable cultural assumptions. Disney limited their cost risk, but failed to adapt to European culture to muster the revenues to cover their costs.

Proponents of the French location ignored warning signs clearly expressed at the press conference. Then used dubious evaluations to justify what they wanted to do. Estimates of park and hotel use were overly optimistic and suppressed the project's risk. Whenever reservations were expressed Walt's dream was trotted out, making desired results ambiguous. What was the aim? Make money? Have a presence in Europe? Lacking a direction, the project stumbled along without an aim to focus questions at key points in the decision-making effort. As critics became more vocal, people were targeted for blame. "Scapegoating" seems to be a mandatory in a debacle, even though blame is useless.

Disney management continues to worry about problems that arose in the last park and fails to think about the next one. Disney managers recently subjected the corporation to severe criticisms a theme park was proposed for a civil war battle site in Virginia. Nearby, wealthy homeowners used a "hallowed ground" argument to express righteous indignation, and to protect their property values. Here Disney was too focused on economics and ignored ethical and political issues that need to be considered to be successful. The EuroDisney debacle marked the end of Eisner's long run as a miracle worker in which he routinely delivered twenty-percent growth for the company.

B.   Nestles Marketing of Infant Formula

Infant formula as an alternative to breast-feeding was developed in the 1920's[2]. Nestle and other companies realized a sharp increase in formula sales during the mid-1940's that peaked in the 1950's. After 1950 the birthrate subsided. Nestle and others in the business experienced a sharp decline in sales and a big push to replace these sales. Selling infant formula in third world countries seemed just the ticket to replace these lost sales. Using aggressive marketing Nestle soon had $300 million in third world sales.

A group, dealing with third world countries and their problems, published a report called "The Baby Killer" in the 1970's. The report chastised the infant food industry for its marketing practices, claiming that these practices led to infant deaths. Nestles, because of its leading position in this market was singled out and accused of using misleading ads that suggested their formula was better than breast milk. The

report also condemned Nestlé's marketing practices in which uniformed Nestle people handout free samples of infant formula in hospitals to encourage new mothers to bottle-feed. The report called for a ban on advertising in poor countries and a ban on promotions in hospitals.

In the eyes of Nestle managers, problems with infant formula arose solely from consumers who misused the product. Deaths were attributed to diluting the formula and mixing it with contaminated water. Critics responded by noting Nestles' unaffordable prices coaxed mothers to stretch their supply by diluting it more than what was recommended. In a third world country, the cost of infant formula will approach 50% of a family's total weekly wages. Nestles had fact books for each of their products, developed for each country in which they were sold, but these books did not discuss problems of dilution and contamination. Company officials claimed their advertising could only assume responsibility for rooting out false statements and were not responsible for the poverty and illiteracy that may lead to the misuse of their product. Nestle people also pointed out that nursing mothers in developing countries unable to produce sufficient breast milk supplemented it with animal milk and water mixed with mashed root mixtures. Formula is far superior to these remedies, which were widely used.

At this point, Nestle's managing director began a decision-making effort to rethink the situation. After a lengthy study, the company made minor changes in its marketing, but continued to aggressively sell its infant formula in third world countries. Company officials said they are content that, on balance, they are doing more good than harm.

Nestle was totally unprepared for the reaction to their decision. Several activist groups were galvanized by the Nestle refusal to terminate its third world marketing. Third World Action Group or TWAG translated the "baby killer" report into German with a new title, "Nestle Kills Babies". The new version maintained that Nestle was responsible for the death and permanent injury of thousands of children because of its unethical advertising in third world countries. TWAG sued to stop Nestle's third-word advertising. The judge in the TWAG lawsuit sent Nestle a message that was ignored by corporate leaders, pointing out that the accusations of immoral and unethical conduct stemmed from the company's advertising practices.

Company officials were shaken by the vehemence of their critics and the court's decision but were unwilling to change any aspect of their product marketing. Instead, Nestle officials thought they had to strike back. They sued all those involved with the TWAG publication for libel. The suit gave TWAG just what an activist group is after - a platform. The lawsuit gave an obscure organization a way to promote its claims. Nestle eventually won the court battle, but lost big in the international court of opinion. Buoyed by its "win", Nestle continued to maintain a defensive posture. This prompted an activist group called INFACT (Infant Formula Action Committee) to mount a boycott of all Nestle products in the United States. Senate hearings on the matter, chaired by Edward Kennedy, concluded that Nestle was responsible for how its products were used and brought in the World Health Organization (WHO) to monitor the situation. INFACT and WHO brought respected experts into the fight. This prompted another round of criticism in which Nestle was accused of making profits by

refusing to a halt their "traffic in death".

At this point, Nestle hired a new marketing VP asking if the company could should back away from its third world marketing practices. Fight the boycott, ignore it, or alter marketing practices emerged as options. Company officials chose to continue their third world marketing and to ignore the boycott, which prompted seven more years of product boycotts by activist groups. Industry analysts believe that the seven years of controversy that followed suppressed sales and damaged the reputation of a company with a long tradition as a socially conscious firm. Later, Nestle's Chairman Liotard-Vogt agreed. He acknowledged that his company's culture fostered intense loyalty, which made it difficult for anyone to question a long-standing company position. He also acknowledged that the effects of the boycott had been covered up. Several attempts were made to neutralize these effects, including a trip to the Vatican by the CEO. At this point, the company had 15 people in the U.S. working on this issue, as well as a public relations firm. Nestles went to considerable lengths behind the scenes and spent lots of money to fight the boycott to avoid a revamping of its controversial marketing practices.

Nestle's infant formula marketing created so much controversy that an industry association concluded that the industry had been deficient in policing member company practices. To respond, the association developed a voluntary code for the ethical advertising of infant products. The code called for sales people to discard uniforms, suggesting that they were medical representatives when working in hospitals, and to terminate sales subsidies to hospital employees. Nestle has yet to adopt the code.

C.   The Denver International Airport

The inadequacies of Stapelton, Denver's International airport, were well known[3]. The 65-year-old International airport was the sixth busiest airport in the U.S. in 1993. But its runways were too close to allow simultaneous landings during bad weather, creating delays that disrupted the entire U.S. air traffic system. Projections of future use made it clear that traffic problems would worsen. Something had to be done. To respond Denver's Mayor Frederico Pena championed a new airport, touting it as an answer to Stapelton's problems as well as a way to counter weaknesses in the local economy. In addition to safety, the Denver International Airport, or DIA, was promoted as a way to create jobs, increase local business revenues, and make Denver a major city – a major city must have an international port.

Controversy followed. The DIA's benefits may seem dubious but its costs weren't. The airport came in at $4.9 billion, far above estimates. DIA has fewer runaways than Stapelton, although expansion is possible. The cost per passenger is $16, compared to $6 at Stapelton. Passengers complain about poor service and, recalling the close-by Strapelton airport, grouse about the expensive and long commute to and from downtown Denver.

The chain of events began when Pena was elected mayor in 1983 and canned a proposal to expand Stapelton. By 1985, Pena had persuaded the city and the county to construct a new airport and was re-elected in 1987 with the new airport as a campaign promise. Critics were skeptical of his plans. Continental and United, with 80% of the

flights into Stapelton, objected. Thinking improvements to Stapelton would be preferred both airlines stopped paying for airport planning. In 1989, critics called for a vote on the airport and threatened a petition drive to force a referendum. Colorado Governor Roy Romer had no way to crush any such a drive. Opposition faded away after vote to approve the sale of bonds to underwrite airport costs was passed by a 2 to 1 margin.

Airport development followed a classic benchmarking approach. More than 100 airports were visited before a design was selected. Planning included the disposal of Stapelton's 4700-acre site. A redevelopment foundation was created to dispose of the land and the structures that proposed a mixture of uses. They included a major housing project to be compatible with the existing development, which surrounded three sides of Stapelton, and light industrial, such as training bases for United and Continental airlines. Proceeds from sales and leases were earmarked for the retirement of DIA bonds.

No one can claim that the DIA designers aimed too low. Given the opportunity to create the first airport in the U.S. since Dallas' Fort Worth in 1974, a dramatic mix of technology and architecture was proposed. The DIA terminal rises out of the high plains like an extraterrestrial circus top. Its advanced infrastructure includes a $100 million communications system with video security and an 80-channel band TV network. Advanced lighting and $20 million automatic traffic management system will keep the DIA's runways open during the worst snowstorms. An $85 million subway zips passengers through two 6000-foot long tunnels at speeds of 30 miles per hour, with automated software to run the trains. The baggage system moves passengers' luggage point to point in less than 10 minutes. The airport has 5 parallel 12000-foot runways, with expansion possibilities of up to 123 runways. The city annexed 53 square miles (more area than the DFW and Chicago airports combined) for the airport, making such expansion possible. The airport was to accommodate 1750 takeoffs and landings in a day and be the first airport to regularly land three planes at the same time on its parallel runways.

DIA proponents found it easier to make impressive plans than to realize them. Since ground breaking in 1989, the DIA's opening has been delayed five times. When the airport finally opened in 1995 it did so amid a chorus of complaints. The baggage handling system and the other technology had bugs that created delays and lost bags. The cost and time to reach Denver infuriated passengers. The airport's bonds came in with ratings so low they approach a junk bond, dramatically driving up interest cost. The final price tag swelled until airport revenues could not cover cost. Public subsidies were required to make up the difference. The predicted volume of 26 million in annual passengers proved to be 160 percent above the actual volume of 16 million. Airline carriers refused to pay the hefty gate rental fees. United estimated that its costs will double, compared to Stapelton in which the airline just built a $60 million concourse. Arguments arose over who should pay the $71 million for the interim baggage system. BAE automated systems, the original contractor for the baggage system balked, laying blame on last minute design changes. BAE expressed concerns that the city was behind in paying $40 million to the company. Like so many over-hyped projects of this type, such as light rail for public transportation and sports arenas, projections of benefits

were overestimated and costs were doctored to make the project seem feasible and desirable.

IV.   DECISION-MAKING PROCESS

A decision-making process spells out the actions and the sequencing of these actions to make a decision. Processes differ in how one goes about action taking and the order of these actions. Two of several processes are examined, one found to be successful and another that is failure-prone (Nutt, 1999). To illustrate how each process unfolds, a discussion of the actions required in decision-making stages is offered to show what is required. Then ways to sequence these action-taking stages are presented, inferring best practice processes and processes to avoid from decision making research (e.g., Hickson, 1987; Harrison and Phillips, 1991; Eisenhardt and Zbaracki, 1992).

Thoughtful writers suggest the required action stages and the best ordering of stages for decision-making from lessons drawn from the best way to do research, design, social change, and problem solving (e.g., Witte, 1972; Soleberg, 1967; Mintzberg et al, 1976; Quinn, 1980; Fredrickson, 1985; Dean and Sharfman, 1996; Papadakis and Barwise, 1998). Also, studies by Schon (1983; 1987) and others, which document how expert architects, urban planners, social and behavioral scientists, engineers, system theorists, and the like go about their work, elaborate upon these recommendations and suggest others. Five decision-making stages emerge from the comparison of these prescriptions and findings (Nutt, 1984). They call for information-collection to understand the claims calling for action, establishing a direction that indicates the desired result, mounting a systematic search for ideas, evaluating these ideas with the direction in mind, and managing the social and political barriers that can block the preferred course of action during implementation.

A.   Understanding Claims

A claim identifies the "arena of action", topic to be addressed, and, by its exclusion, topics to be ruled out. A claim is derived from a need or opportunity stakeholders believe to be important (Pounds, 1969; Nutt, 1979). A claim (Toulmin, 1979) takes shape when stakeholders note a need-based concern or an opportunity-based consideration and draw a conclusion about what must be done. Managers are bombarded by claims made by informed insiders, users or customers, judicial renderings, new industry practices, regulations and regulators, and suppliers. Their own views, as well as the views of important people inside and outside of the organization, also come into play as they sort this out. The concerns or considerations that prompt a claim are seldom disclosed with the claim, and some may be deliberately hidden (Starbuck, 1983; March, 1994). Many decision-makers choose among claims according to the power of the claimant (Cyert and March, 1963). For instance, a competitor's new product may pose a threat (the concern) and a claimant may connect the threat to declining quality (the claim). Research shows that the claim (declining quality) is more apt to be accepted if the claimant has power and is well connected. Claims can be self-serving or symptomatic when dictated by the claimant's power, sweeping aside other

claims based on important concerns and considerations (Pfeffer and Salancik, 1974; Pfeffer, 1992). Faulty claims and self-serving ones pull decision-makers away from more pressing issues (Kolb.1985; Copperrider and Srivastra, 1987), suggesting that:

> P1: Selecting among claims according to the power of the claimant is less apt to be successful than looking for hidden concerns and considerations that offer competing claims in a decision making process.

B.   Setting Directions

Additional procedural options arise as directions are extracted from the claim. Decision-makers can latch onto a ready-made idea in the claim (Mintzberg, et al, 1976; Brunsson, 1982). Or a need embedded in the claim can be identified (Pounds, 1969). To articulate a need-based direction, a decision-maker examines the reasons for action and decides what results are wanted (Lock, et al, 1990; Nutt, 1993a). This is done by identifying a problem to be overcome, such as exploring why utilization is declining, or by setting an objective to be met. A problem identifies what is wrong that needs fixing. An objective indicates the desired result, such as increased revenues. Other decision-makers are opportunity driven and offer a ready-made solution taken from the claim as a substitute for setting a direction. Either problem eradication or seeking a way to meet an objective is a better way to lead the effort, and objectives have the best success record (Nutt, 1993a), suggesting that:

> P2: Decision making processes that are need directed and use objectives, and not problems, to establish a direction are more apt to be successful.

C.   Finding Ideas

Decision-makers who adopt a "need-type" direction search for remedies to overcome the problem or meet the objective. People who study decision-making call for multiple options and innovative ideas (Dewey, 1910; Germunden and Hauschildt, 1985; Linstone, 1985). Multiple options increase the number of ideas considered to improve the chance of finding a superior solution. Innovation requires a new idea, one that has not been previously recognized (Van de Ven, et al, 1999), or "radical innovation," ideas that are new to an industry (Damanpour, 1991). Radical innovation is credited with giving organizations a first-mover advantage in the marketplace. In practice, search is carried out by benchmarking or solicitation, or by innovation (Nutt, 1993b). Benchmarking exports the practice of an organization or work unit thought to be a high performer (Hart and Bogan, 1993). Integrated benchmarking amalgamates the best practices and procedures found in several organizations or work units, and is more successful (Nutt, 2001b). A single-cycle solicitation makes needs known to vendors or consultants. A multi-cycle solicitation set out to learn about possibilities and to apply this knowledge to fashion a series of ever more sophisticated searches, and produces better results (Nutt, 2001b). Taking the time to learn with these tactics pays dividends (Pettigrew, 1985; Kobe, 1983; Lant and Mezias, 1993). A custom-made solution calls

on decision-makers look for a new idea without any references to ready-made plans, the practices of others, or the ideas of vendors (Nadler and Hibino, 1990). The prospects of success for innovation improve when an objective is used to guide the innovation effort and when multiple options are sought (Nutt, 2001b), suggesting that:

> P3: Tactics that expand search with integrated benchmarking and multi-cycle solicitation and stress innovation are more apt to be successful in a decision making process.

D.   Evaluation

Decision-makers use judgment, bargaining, or analysis to evaluate alternatives (Mintzberg, et al., 1976; Langley, 1989). Decision-makers who use Judgment apply their intuition to make a choice without explaining (or being able to explain) their reasoning. Bargaining calls on decision-makers to help parties to the decision reach a consensus about the merits of alternatives (Hackman. 1990). Decision-makers apply analysis to carry out a factual assessment (e.g., Snyder and Page, 1958; Allison, 1971; Cyert and March, 1963; Soelberg, 1967; McKie, 1973; Cohen et al., 1976; Simon, 1977; Hickson, et al., 1986; Pinfield, 1986; Cray et al. 1993). Analytic and bargaining evaluation tactics are more apt to be successful (Nutt, 1998a). Judgmental tactics found in Mintzberg, et al., (1976) and Langley, et al. (1995) were observed in far fewer decisions than previously reported and have a poor success record. Subjective tactics represented a new type that examines information from archives, or experts, extracting arguments that supported a course of action. Overt arguments were made that cited data or expert testimony about what works and why. Subjective evaluations that drew on sponsor reflections and expert testimony were seldom successful (Nutt, 2002b), suggesting that:

> P4: Decision making processes using analytic or bargaining tactics will be more successful than using judgmental or subjective tactics.

E.   Implementation to Install a Preferred Idea

Implementation can be carried out in several ways. The acceptance of stakeholders can be promoted by involving them, or their representatives, in the decision-making effort and by canvassing them early in the process. Involvement entices stakeholders to go along with the decision, making participation an integral part of each process stage and captures activities carried out in the bonding approach described by Beyer and Trice (1982; 1987) and Cray, et al. (1988). The involvement of stakeholders helps to manage their interests (Hickson, et al., 1986 Rodrigues and Hickson, 1995). Another approach called intervention uses networking to guide stakeholders one at a time through steps that alter their objectives, social ties, and self-esteem and reinforces the positive aspects of an evolving decision. This approach follows from the transformational ideas of Leavitt (1987) and the benevolent autocratic role suggested by Likert (1967). The decision-maker intervenes by creating a need for change in the minds of stakeholders

and key players. Edict and persuasion techniques are also used. <u>Persuasion</u> marshals arguments to sell the decision to others by dramatizing its alleged benefits, as identified by the research of Churchman (1975), Huysmans (1970), Doctor and Hamilton (1974), Schultz and Sleven (1975), and Ginsberg and Schultz (1987). Persuasion also captures the tactics found in the prescriptions of Quinn (1980) and the "informational" approaches identified by Beyer and Trice (1982). An <u>edict</u> prescribes the behavior necessary to realize the decision (Cock and French. 1948; French and Raven, 1959). The use of power is a key feature. Quinn (1980) appears to argue that power must be applied incrementally to gradually push the recalcitrant and uninformed alike toward acceptance of a decision. Although, often disguised as negotiations, discussions, bargains and the like, such implementation attempts have the same features as the "control" approach noted by Beyer and Trice (1982) and the autocratic approach identified by Likert (1967). When power is applied by legitimate authority figures, it often takes the form of an <u>edict</u> that dictates what is to be done.

Intervention is nearly always successful, participation usually successful, persuasion works about half of the time, and edicts are prone to failure (Nutt, 1986; 1998b). The logic of intervention and participation tactic require that each be used early in a decision-making process, seeking to manage the social and political forces that arise during a decision-making effort, with evaluation following. Persuasion and edict tactics follow an evaluation and draw on the information acquired to call for the adoption of a preferred course of action. Because the barriers to action are considered early in the process, intervention and participation are more successful.

> P5: Decision making processes that consider implementation early on by using participation or intervention tactics are more successful that those that defer implementation and use persuasion or edict tactics.

V.   SOME PROCESS TYPES

A decision-making process lays out the sequence of actions to be followed and what decision-makers worry about to make a decision. Decision-makers emphasize different things (Nutt, 1999). Some stress finding a workable solution and de-emphasize direction setting. Others emphasize implementation and still others consider all process stages and give them equal weight. The tactics selected by decision-makers also have a key role by pulling people through a decision-making process in different ways, as shown in Figure 1. Some select among claims or their claimants. Others explore claims by uncovering concerns and considerations. Directions can take shape as a need or as an opportunity. If one chooses to be need-directed, multiple options and/or innovation can be sought. Implementation can be proactive and put at the front of the process with networking or participation tactics. Or it can be reactive and take steps at the end of the process to install a preferred course of action with edict or persuasion tactics. Two of the paths in Figure 1 are of particular interest. One produces a "discovery" process offering a "think first" approach (Mintzberg and Westley, 2000). The other, called an "idea-imposition" process, is linked to opportunity with a "see first" approach that

looks for ready-made solutions (Langely, et al, 1995). Both processes are discussed to trace the actions taken and shipped, and their sequence.

Figure 1
Action sequences that makeup a decision-making process
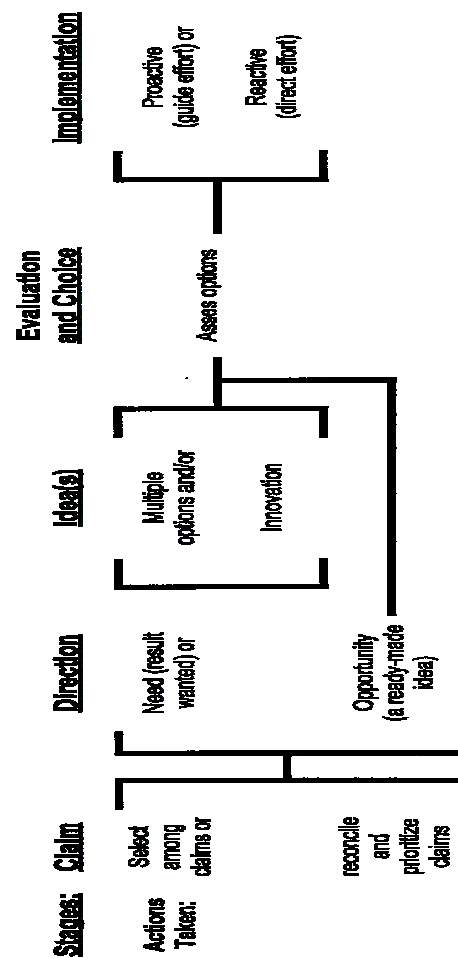
A.   The Idea Imposition Process

Decision-makers that use an idea-imposition process skip some stages and change the order of others, as shown in Figure 2. Decision-makers jump to conclusions and then try to implement the solution they stumbled upon. A bias for action causes them to limit their search, consider very few ideas, and pay too little attention to people who are affected, despite the fact that decisions fail for just these reasons. An imposition process finds an idea early on. This limits search and in most cases terminates it so no one looks for any other ideas. Implementation is attempted after the solution is evaluated. Because managers latch onto an idea early in the process and use most of their resources to test the merits of the idea, learning is limited. Several stages are skipped and important activities deferred in an idea imposition process. The process unfolds as:

1. <u>Claim Selected Identifies the Arena of Action</u> – Decision-making begins when trends or events alert a stakeholder, pointing to something inside an organization (an inefficient operation or a loss of legitimacy) or outside it (an innovation by a competitor or a loss of customers) that calls into question business practices. Claims are made to reflect the question posed, but the claim seldom reveals the concerns and considerations motivating it. Coping with changes in customer taste or new computer technologies, concerns and considerations, are ignored to focus on the claim, which a stakeholder may interpret as a call for new product development. Stakeholders may offer competing claims that have make a different interpretation of the same concerns and considerations.

    In the idea imposition process, a decision-maker selects among competing claims according to the power of the claimant. The danger in ignoring a claimant is believed to be more important than the claim's message. When the claim seems to identify an unsatisfactory situation, action follows. The motives of a decision-maker following such a quest can be quite transparent to observers who then ignore, obstruct, or give only token efforts. The decision-maker must scale the barriers set up by stakeholders who become offended by or skeptical of the motives behind taking action. Alienated stakeholders who are not given a chance to offer their views erect barriers.

    The arena of action in a debacle never deviates from the claim selected by the decision-maker. Decision-makers in the debacles persevered as critics disputed their adopted claim and offered counter arguments. Pena had to power over his opponents to hold onto a new airport as the arena of action. Eisner at Disney was fixated on a park in Europe and the "sweet deal" offered by the French, never asking what other cities in Europe would offer. No one would question him so this limited the arena of action to an evaluation of the French deal. Ford and Firestone stonewalled a recall and Nestle stonewalled a marketing change and by doing so maintained arenas that were set out early on these decision-making efforts. Because these brash commitments were never challenged little learning occurred (Nystrom and Starbuck, 1985). A fatal flaw in all of the debacles was the unwillingness to think about any information unless it supported the decision-makers claim and its implied arena of action.

Figure 2
The idea-imposition decision-making process
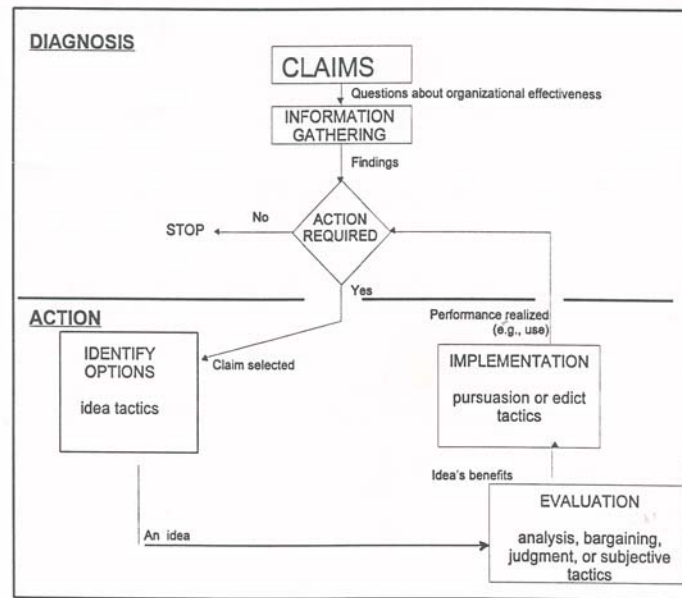
2. <u>Opportunity and its Ready-made Plan</u> – All of the debacles used ready-made plans (Nutt, 2002a). The claim and its implied opportunity suggested a solution. Or a powerful claimant who has captured the attention of a decision-maker offers one. Because the ready-made plan is quickly identified it provides instant relief for a beleaguered decision-maker. The core idea that made up the decision was available early on and seldom changed. The idea of a park in France near Paris surfaced years before Disney acted on it. There was little if any debate about an old vs. a new airport in the DIA decision. Ford, Firestone, and Nestle refused to alter their early on commitments to resist a recall and change their marketing plan until years of activism and bad press forced them to reconsider.

This commitment becomes a trap in which "new ideas" are often variations on old ones. No one dares to challenge the status quo, fearing that key players have too many vested interests to back away from these interests. This perception of sunk cost, the fear of failure, and the reluctance people have to starting over keeps the decision-maker focused on making things work. This coaxes them to carry on even when their cause is doomed, as in the tire recall. Decision-makers pushing opportunities find that skeptics believe that the decision-maker is pushing an idea in which he/she has something to gain. Even when this is not the case, time and money must be devoted to defending the idea - money that could be better spent on finding new ideas. Many fear the unknown - not knowing what they want until they see a concrete possibility. As

Wildavsky (1979) observes, decision-makers don't know want they want till they can see what they can get. Having such an answer eliminates ambiguity but limits the search for new ideas that could be better (Janis, 1987).

3. Evaluating the Opportunity - Once the "opportunity" is found evaluation soon follows. Decision-makers in the debacles were forced into a defensive posture, attempting to justify the opportunity and defend the reasons used to support it (Nutt, 2002b). The "defensive evaluation" runs up the bill, often into the millions. Such an evaluation seldom turns up anything of value. The DIA proponents pulled in outside consultants and paid them handsomely to do cost and feasibility studies. In this case, the consultants knew what they were expected to find. Such evaluations offer little beyond shallow and predictable observations. Disney spent far more on the analysis of the French deal than it did on anything else. Ford and Firestone knew the cost of a recall but did nothing to estimate the potential costs of resisting it. Nestle projected expected losses in their lost market share and how to recover it by selling infant formula to developing countries, but spent nothing to estimate the cost of a boycott. In each case, the evaluation offers little beyond a defense. In addition, the uncertainty in realizing benefits claimed for the "opportunity" was not considered in the debacles, so the risk in each decision was unknown.

Little money is spent comparing options because four of five decisions consider only one idea (Nutt, 1984). When there is but one idea, evaluation can still be useful if the idea is assessed against expectations (Eisenhardt 1997). Such an evaluation can uncover the wisdom of installing the idea, but will be controversial without a direction indicating desired results that point out which benefits count.

4. Installing the Plan – Decision-makers in the debacles spent little time or money on implementation until the end of the process. The tactics available at this point are failure-prone. Decision-makers can apply power, persuasion, or some combination to get people to comply. A memo is written or someone is hired to tell people what to do. If this fails decision-makers resort to persuasion, trying to explain to stakeholders why the decision is essential. Sometimes this is done in reverse with an application of power following a failed demonstration. Both are doomed to failure if the interests of important stakeholders are threatened by the decision. Eisner and Pena had little hope of getting their critics off their back with arguments about potential consumers' interest in a European park or the airport's economic benefits. Or people who see themselves as disadvantaged and lack the power to openly resist resort to tokenism and withdraw. Ford and Nestle got insiders on board, but in doing so lost their ideas about what to do to fix things as these decisions spun out-of–control. Compliance has a price. After a power play people will only tell you what they think you want to hear and will no longer tell you what they believe to be true.

B.   The Discovery Process

Trends and events arrive as noted for the idea imposition process, but are handled much differently in a discovery process. The trends and events and the claims they provoke

prompt studies by staff, examining industry reports, such as Duns or Value Line. And decision-makers collect information by talking with stakeholders or trusted associates to verify what claimants are saying. Concerns draw attention to an unsatisfactory condition and considerations identify an opportunity. A claimant's concerns or considerations are uncovered to connect them with the claim denoting an arena of action, what the decision is about. After finding an arena of action, the discovery process takes steps to uncover and manage people interests that can be upset. The discovery process establishes directions and identifies options as separate activities. Options are developed in response to the directions set and evaluation is used to investigate whether the options uncovered can realize the direction's hoped for benefits.

Recent work shows that the claim validation, implementation, and direction setting have the greatest impact on success (Nutt, 1999: 2001a). Decision-makers that use a discovery process emphasize these stages, placing each early in the process. A premium is placed on learning through the discovery of decision topics, barriers to taking action, and desired results. The discovery process is outlined in Figure 3, with the crucial stages highlighted.

Figure 3
The discovery decision-making process
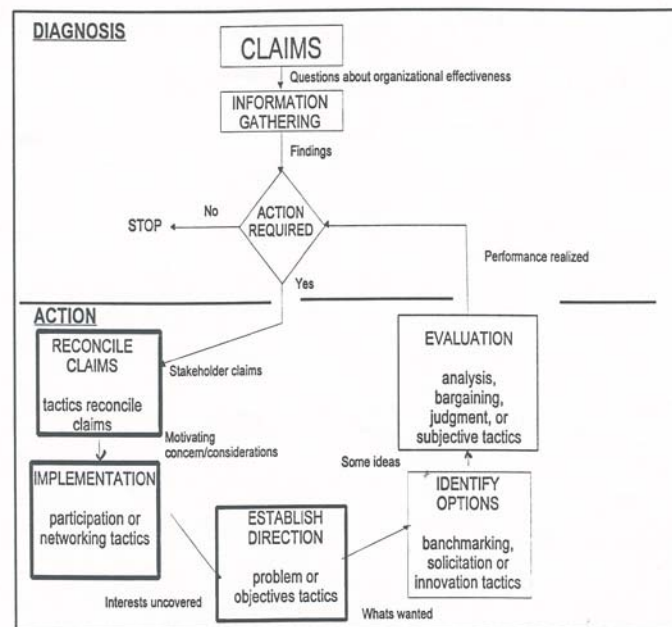
1. <u>Claims Identify the Arena of Action</u> - The successful decision-maker looks beyond the initial claim. Other claims made by a cross section of informed people are sought to uncover concerns and considerations that are yet to be disclosed or hidden. Claims about changes in customer taste and customer expectations are investigated by talking with customers, sales people, suppliers, alliance partners, and others that may have insights. An amalgamation of claims from several sources suggests a plausible range of claims. The concerns and considerations behind these claims paint a picture of the motivation to act. EuroDisney and DIA critics could be polled, seeking to uncover the considerations motivating their claims. Informed insiders at Ford and Nestle could be asked to voice their claims to seek out the concerns motivating them.

The concerns and considerations uncovered suggest new ways to think about the arena of action. Was the EuroDisney decision about best location or whether to invest in a park? Should Ford and Firestone shift the arena from stonewalling a recall to investigating ways to carry out a cost-efficient recall? Nestle's arena of action was limited to defending their marking practices and did not consider how to use the company's marketing approach to discourage unsafe infant feeding practices in third world countries. DIA decision-makers limited their arena of action to selecting among new airport plans, ignoring the question of whether a new airport was a wise investment for stakeholders.

2. <u>Implementation to Manage the Forces Blocking Action</u> - Implementation brings social and political issues to the forefront by asking who can block action. If a new airport is needed, how can we convince others that the need is real and the plan a reasonable one? Ford could have taken steps to get the NHTSA and other critics to see its side of the recall question. Participation can be used when interested parties are localized, such as asking Disney insiders for park location recommendations.

3. <u>Set Directions Indicating Desired Results</u> - Directions guide the search for ideas by indicating what is wanted as an outcome. Walt's dream was interpreted to imply a French location. What about a location that maximizes attendance at the park or one that increases the exposure of Disney-Americana to Europeans? This suggests attendance or exposure as the desired result. Was the DIA about safety or increased business activity for the Denver area? Safety as the expected result would have put a different light on the need for a new airport. Did Ford and Firestone have a minimum cost objective or was it one of long-term sales? Should Nestle make their implicit sale direction explicit? Direction setting clears up these questions by identifying an agreed upon result to guide the search for ideas.

4. <u>Uncover Ideas</u> - If claim, implementation, and direction have been attended to, the remaining stages are easier to carry out and less controversial. Neutralized critics and clarity about a safety direction would clear a path for Pena to pursue his passion and search for novel airport plans and innovative ideas in its design. Had Disney executives opened up the location question they would have found it easier to uncover location options by starting a competition among cities, as VW and Honda do to locate a manufacturing their plants in the U.S. Ford and Firestone could have mobilized their

staffs with a directive to find a cost-effective recall fixes and Nestles their staff with a directive to find a marketing plan that stressed safe infant feeding practices.

5. <u>Evaluate Options</u> - Evaluation is straightforward in a development process. The direction specifies what is wanted, such as lower cost. This makes cost an appropriate and reasonable way to measure benefits. The political overtones of using evaluation to defend a course of action are taken away and replaced it with documenting and verifying benefits. Identifying a European park location with the least risk or one with the largest expected park attendance and hotel occupancy, is less controversial than collecting data to make the French location look good. Comparing the safety of air travel through Stapelton with that of the proposed new airport is more apt to be accepted than trying to show how a new airport can stimulate business in the greater Denver area. If cost-effective solutions had been accepted as a direction, an evaluation of the cost-effectiveness of fix options for Ford recalls and marketing plans for Nestle would lack controversy.

C.   Comparing the Process Types

Decision-makers that use an idea-imposition process skip some stages and alter the order of others. Early stages in the discovery process are ignored. Decision-makers jump to conclusions and then try to implement the quick fix that they stumble on. A bias for action causes them to limit their search, consider very few ideas, and pay too little attention to people who are affected, despite the fact that decision-makers blunder for just these reasons (Nutt, 1999). An idea imposition process uncovers a seeming good remedy early on. This limits search and in most cases terminates it so no one looks further. Implementation is attempted after a remedy is uncovered and evaluated. Because managers make early commitment to a solution organizational resources are used to test its merits, limiting learning. The discovery process establishes directions and identifies options as separate activities. Options are developed in response to the directions established. Several stages that play an important role in the discovery process are skipped and important activities deferred in an idea imposition process.

All of the debacles that have been unearthed follow an idea imposition process (Nutt, 2001a; 2002a). Four of five decision failures do as well (Nutt, 1999). A claim suggested by a powerful claimant is adopted. The arena of action implied by the claim is never questioned and the remedy called for by the claim or offered by a powerful claimant is identified, evaluated, and installed. The discovery process would open up decision-makers in the debacles to new ideas and possibilities. This suggests that:

P6: More decisions are made with an idea imposition process than the discovery process.
P7: Decisions will be more effective and efficient when the discovery decision-making process is used and less effective and efficient when the idea-imposition process is used.

Figure 4
Shifts between the decision-making process types
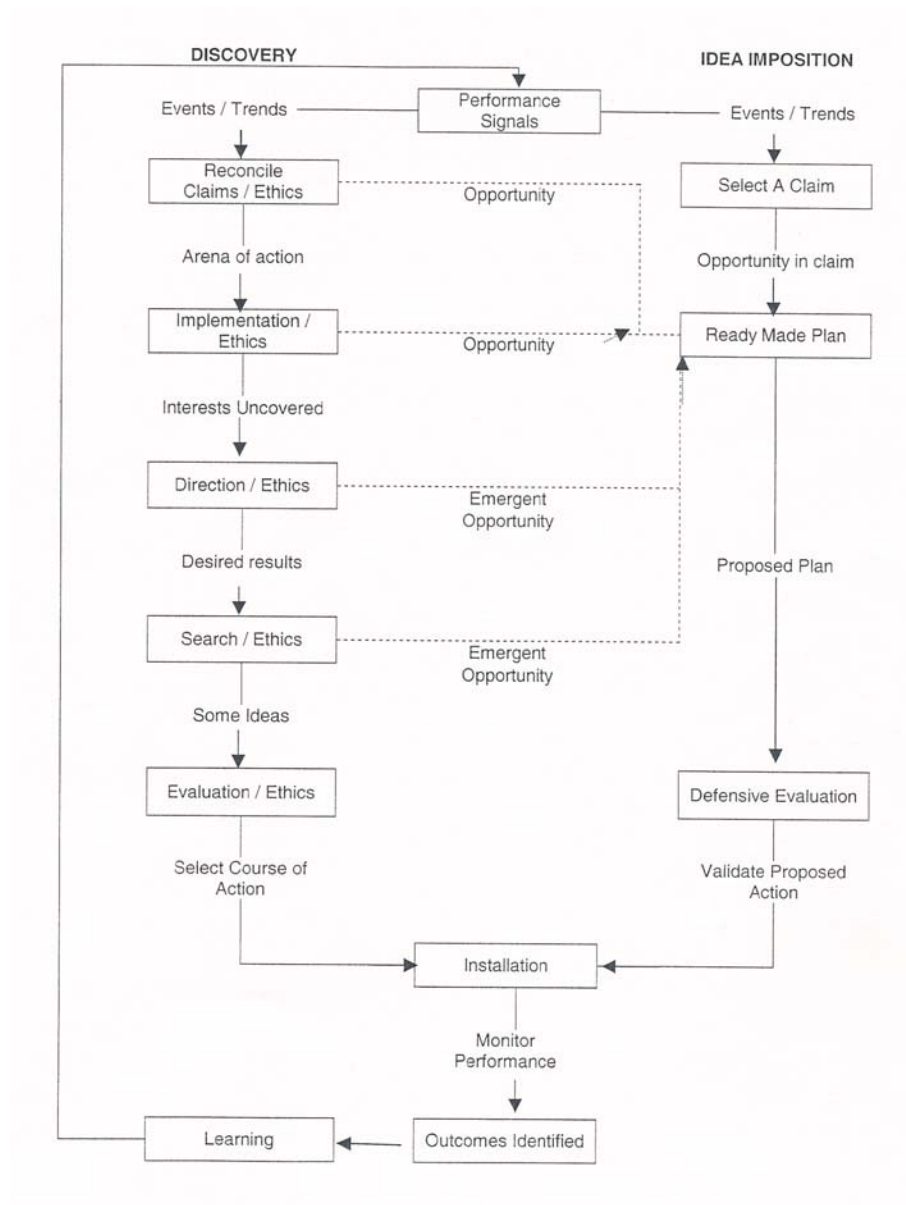
VI.   PROCESS SHIFTS

To realize success, a discovery process must be continued through all of its stages. When pressures to "move things along" mount decision-makers find it difficult to carry out all process stages (Nutt, 2002b). Dual demands of pragmatism and timeliness can intensify until there is a switch in tactics. The shift can occur in any process stage and lures the unsuspecting decision-maker into the idea imposition process (See Figure 4).

Changes in tactics are prompted by the blunders. A quick fix pops up and appears to be a useful, if not an ideal way to proceed. If the idea is adopted there is a shift to an "idea imposition" process that abandons best practice. The emergent idea that allows from a quick fix makes learning from a careful search appears superfluous. A contention that time or money is being misused also pushes decision-makers to alter how things are being done. Decision-makers respond to a call to cut costs or to speed things up by substituting tactics that seems to be cheaper and faster. They are neither cheaper nor faster (Nutt, 1992; 2001a; 2002a). The temptation to do one or the other, or both, arises repeatedly as decision-makers work their way through the process stages. Once the move to the idea imposition process is made no one in the debacles was able to get back to the discovery process (Nutt, 2002), making the move one-way.
P8: Moving from a discovery to an idea imposition process is one-way and reduces the effectiveness and the efficiency of a decision.

Moving to an idea imposition process has less damage if it occurs further along in the discovery process. Let's see how the blunders pull decision-makers toward practices that move them from a discovery to an idea process, beginning with the first stage in the discovery process.

A.   Claim Reconciliation

The discovery process calls for the decision-maker to poll a diverse group of stakeholders to uncover their concerns and considerations. Polling sets in motion what can appear to be a long and costly effort. Because some insiders and outsiders will be pushing to "get on with it" such polling may have only grudging acceptance, giving it a tenuous base of support. Should an idea emerge that seems to fit the bill, these individuals will call for its adoption. To do so moves the process to an idea imposition type, as shown in Figure 2. Once such a move is made, decision-makers are unable to get back in a discovery process and a learning mode (Nutt, 1999). The effort shifts to defending the emergent idea and demonstrating its value.

The seeming pragmatism of having something that works, or seems to, make the arguments for a quick fix hard to set aside. Both time and cost appear to be saved by such a move. This frequently proves to be illusory. The cost and time required to do the needed retrofits are always underestimated (Nutt, 1984; 1998a). The quick fix is pragmatic and timely in just one of five decisions.

B.   Attending to Social and Political Issues

If decision-makers get through the claim reconciliation stage they have polled stakeholders and amassed information about possible decision topics and whether the expected effort seems to warrant the organization's time and resources. These insights make it easier to deal with a quick fix proponent. The idea must now pass a test offered by an enhanced understanding of concerns, indicating needs, or considerations, suggesting opportunities. Also, there are commitments to stakeholders about their concerns and considerations that must be met. Proponents of a quick fix must hurtle these barriers to show how their idea can serve the need or offer the features called for by an opportunity. This puts the quick fix proponent on the defensive. Fewer of their ideas will survive such test. To scale hurtles created in claim reconciliation, the force of the idea in a quick fix must seem compelling and appear to fit the deeper understanding of what is needed or the opportunities available. Sometimes such a case can be made. If so, the networking or the participation tactic called for in stage two of the discovery process is abandoned. This does happen but occurs less often than in the claim stage.

A strident call for increased frugality or rapid action accompanied by a workable idea can set aside an effort to network or to involve others to get their ideas. Both approaches are undertaken to build understanding and support. Contending that the effort being expended to muster support and understanding is overly patronizing, or just not required, can terminate these efforts. Networking and participation can be derailed if successfully branded as too time consuming and overly costly as well as overkill by a critic. It is the appearance not the reality of things that often carry the day. Networking and participation are more efficient and effective than people realize (Nutt, 1998b).

Dropping either the networking or the participation tactic delays implementation by pushing it to the end of the process, as shown in Figure 2. This limits decision-maker to using persuasion or an edict, which have far less chance of success than networking or participation. Decision-makers delay implementation until a preferred course of action has been carefully evaluated and defenses gathered, which are required to use persuasion or to issue an edict.

C.   Setting Directions

Slipping to the idea imposition process during direction setting is prompted by many of the same impulses noted so far. Higher-ups with a short time horizon or a low tolerance for ambiguity pressure decision-makers to produce results. They create a clamor that proponents of a discovery process and its "think first" approach find difficult to keep at bay. Even a small effort devoted to setting objectives or uncovering problems can appear tiresome and little more than an academic exercise to individuals with such urges.

A discovery process that unfolds through the first two stages gathers considerable information. There are concerns, considerations, and an agreed upon claim as well as an informed network of people that understand what the decision is about and why it seems wise to act. This creates a sterner test than before where logic but not political support could be used to argue against what may be an ill-conceived quick fix.

Even so, some ideas may seem convincing and be adopted over the opposition of others who want to mount an objective-driven search to find a really good idea. Adopting the quick fix shifts to an idea imposition process and makes further direction setting efforts impossible. The damage is still considerable. If such a shift occurs, no one will know what is wanted. This complicates evaluations because there are no clear expectations to measure against. Capricious arguments that support the quick fix are possible because of this, and will be difficult to counter. Proponents employ such arguments in their political maneuvering, creating conflict.

D.   Searching for Ideas

Decision-makers have claims, a network of support, and a clear statement of the desired result when they reach this point in the discovery process. Armed with all this, one has considerable ammunition to block an ill-conceived idea being sold as a quick fix. Idea proponents can be asked how the idea fits with the arena of action, whether peoples' concerns and considerations are attended to, and if idea can produce the agreed upon results. When an idea emerges that can pass each of these tests it will have some merit. Adopting it may not give the best result but there is much less chance of a debacle.

When an idea emerges outside the search effort that meets all these tests the question shifts to whether further search can be profitable. To answer this question, decision-makers look at the results to date and estimate what a further search can provide. They must also identify baggage that the quick fix will bring. Continuing a search typically pays off. The idea in the quick fix is tossed into the kitty and considered along with others. Terminating a search under such conditions can be seen as stopping on the verge of success, even if there is much left to do. Staying with a search maintains the support that has been carefully built over the previous two stages of effort. Switching to the idea imposition process, ever if the idea is defensible, can squander this support. People with little tolerance for a wait or people feeling pressure to act will be drawn to a quick fix, even though it has this baggage. When tolerance is low and pressures strong, a quick fix can prompt a switch. The decision-maker is now limited to assessing the emergent idea and using the evaluation results to argue for its adoption. This has little effect on the disgruntled former participant, but others who see the idea as meeting if not exceeding expectations may find to be acceptable.

E.   Evaluation

When decision-makers reach this point in a discovery process they have an arena of action, a cadre of supporters, clear expectations, and some ideas with potential. There are a number of commitments and understandings, but bad practice can still upset things. An ill-chosen evaluation approach that creates an image of manipulating things to serve a selfish interest can prompt failure (Nutt, 1998a).

Best practice calls for a comparison of completing ideas, seeking an idea that comes the closest to offering the hoped-for results. Decision-makers do this less often that you may think. Again, a decision-maker fells pressure to act quickly. Or they may see something that is in their interest or the interests of those they must cater to and

believe that they must call for the adoption of this idea. This calls for a subjective assessment and a personal interpretation of benefits. A decision-maker feeling the heat from higher ups may just announce that "this is the thing to do", merging implementation with an implicit evaluation by resorting to an edict. When decision-makers resort to subjective or implicit evaluations they abandon best-practice evaluation tactics, and move into the idea imposition process. Evaluation and implementation become intertwined, making it impossible to get back to the preferred discovery process.

Risk can be misunderstood as well. This can be intentional, set aside to make someone's idea seem acceptable. Ideas with high risk can appear to have little or no risk by merely ignoring questions about risk. To push a pet idea, risk is swept under the carpet. Or risk may be overstated and paralyze the decision-maker. Here an option with no risk or the appearance of no risk is sought. Decision-makers gravitate to ideas that seem risk free and reject those with modest risk and high potential payoffs. Evaluation is rendered useless by the over-management or the under-management of risk. Both move the discovery process to an idea imposition process and commit the decision-maker to using persuasion and its well-reasoned justification to carry the day or edict to get their way. Sloppy arguments or a show of force at this point lowers a decision-maker's chance of success. Using bad evaluation tactics to certify someone's preferred course of action and misrepresenting risk always get decision-makers in trouble.

P9: Any departure from the staging of activity in the discovery process reduces the prospects of success. The damage declines proportional to the number of stages completed.

VII.   APPLYING THE DISCOVERY PROCESS

A recent example illustrates how muddled decision-making sets the stage for a debacle and how to turn things around with a discovery-motivated effort. In the wake of the 9/11 atrocities, Governor Davis of California announced that terrorists would attempt to destroy one or more major bridges in the state, claiming that "If I didn't make the statement and God forbid, some thing happened, I'd be kicking myself" (Keeney, 2001). Critics assailed the Governor saying that the information was neither credible nor corroborated and would create panic. Do you agree with the Governor or his critics? To answer, ask what was the decision about? Was it to avoid regret, provide information, thwart a terrorist attack, or what? Before making any such announcement a decision-maker must address this basic question. Many fail to do this. Also, what results did the Governor hope to realize? Was it to avoid recriminations or to minimize loss of life and injuries? Having ones hoped-for result clearly in mind brings out the more appropriate actions. If the Governor's wants to ensure public safety it would be wise to close the bridges and inspect them, trading off peoples' inconvenience for their safety, and not stop with an announcement. If avoiding panic and fear is the intent then an announcement is not the best action one can imagine, but an announcement may deter a terrorist. The Governor's critics showed the same muddled thinking as did the governor. They typically stressed evaluation, giving little if any thought to questions of what the decision is about and its intended results. Volumes get written about making

value tradeoffs, such as giving up civil liberties to thwart terrorists, little or nothing about what is critical: discovering what the decision is about and its hoped for results. Also, managing the forces that can block you with adroit implementation is far more important than value tradeoffs. The Governor could do this by involvement or by networking to get the insights of key people and their backing before acting.

VIII.   SUMMARY OF THE PROCESS LEARNINGS

All debacles studied in the past twenty years follow the path shown in Figure 2. Concerns about Stapelton's inadequacies were interpreted as a claim that called for a new airport. The new airport "opportunity" persisted as defensive evaluations were undertaken to answer critics, and provide information for Pena to use in his attempt to persuade people to support his quest. Top managers at Ford bought into the claim that the company's SUV had an acceptable level of safety. This made it easy to stonewall a recall. Analyses of the fix option and its seemingly high cost provided more support. Ford's top management powered over concerned insiders and ignored others to pursue their no-fix decision. Nestle ignored the claim that it was selling "infant death". Power was applied to maintain the option of continuing its marketing plan through literally years of organized opposition. Walt's dream was seen as suggesting a park in France, preferably near Paris. The idea prompted an evaluation of the "French deal". Eisner used his position power to make the EuroDisney a reality by locating it near Paris.

All debacles follow such a process. A claim suggested by a powerful claimant is adopted. The arena of action implied by the claim is never questioned and the idea called for by the claim or offered by a powerful claimant is identified, evaluated, and installed. Following the discovery process in Figure 3 would have opened people up to new ideas and possibilities that may have avoided these debacles.

NOTES

1.   Material for EuroDisney found in: Alexander, K.L. "Disney, Revisited". USA Today, December 14, 1999; Corliss, R. "Viola! Disney Invades Europe. Will the French Resist". Time. April 20, 1992. ; Disney's World, Newsweek Aug 14, 1995; Flower, J. "Prince of the Magic Kingdom". John Wiley & Sons, Inc: New Yprk, 1991; Grover, R. The Disney Touch. Business One Irwin: Homewood, Illinois. 1991; "EuroDisney Theme Park Near Paris is Europe's Second Biggest Project". Business America. December 2, 1991. ; Lawday, D. "Where all the Dwarfs are Grumpy". US News and World Report: May 28, 1990. ; "Mouse Trapped in France". New Statesman & Society, August 20, 1993. ; "Of Mice, Men and Money". The Economist. November 13, 1993; Phillips, A. "Where's the Magic?" MacLeans. May 3, 1993; Rudnitsky, Howard. "Creativity With Discipline". Forbes Magazine. March 6, 1989; Turner, R. "Disney Proift, Revenue Set High in Period". The Wall Street Journal. January 20, 1994; "Waiting for Dumbo". The Economist. May 1, 1993; Walt Disney Inc. Annual Reports / Archives. 1984-1999.; Wrubel, H. "Le Defi Mickey Mouse". Financial World Magazine. October 17, 1989.

2. Material for the Nestle case was taken from: Baer, E. & Margulies L. "Infant and Young Child Feeding: An Analysis of the WHO/UNICEF Meeting". <u>Studies in Family Planning</u>. Pg. 72-75, 1980; Blodgett, T.B. & Banks, P. "Nestle - At Home Abroad". <u>Harvard Business Review</u>. Pg. 80-88, Nov-Decision 1976; Ciocca, H.G. "The Infant Formula Contraversy: The Nestle View". <u>Journal of Contemporary Business</u>. Pg. 37-55, 1979. Vol 7(4); Crain, R. "A converstion with Nestle's Pierre Liotard-Vogt". <u>Advertising Age Magazine</u>. Pg. 31-4, June 30, 1980; Harrison, N. & Malone, C.B. "Nestle Alimantana S.A". <u>Harvard Business School Cases</u>. Harvard Business School Press, case #9-580-118.; Johnson, D. "A Glimpse at Nestle's Anti-Boycott Strategy". <u>Business and Society Review</u>. Pg. 65-67, Spring 1981; Manoff, R.M. "Learning a Lesson From Nestle". <u>Advertising Age</u>. Pg. 16 & 20, Feb 13, 1984; Salmon, C.L. "Milking Deadly Dollars From the Third World". <u>Business and Society Review</u>. Pg. 43-8, 1989; Sethi, S.P. <u>Mulinational Corporations and the Impact of Public Advocacy on Corporate Strategy: Nestle and the Infant Formula Controversy</u>. 1994. The Netherlands: Kluwer Academic Publuishing Group.

3. Material for the DIA was taken from: Anderson, Darrell. "How will DIA Fly?" <u>Colorado Business Magazine</u>. Pg. 53-56, September 3, 1993; Auguston, K. "The Denver Airport: A Lesson in Coping with Complecity". <u>Modern Materials Handling</u>. Pg. 40-45, 1994; Boyer, R. <u>International Air Transportation</u>. New York: American Society of Civil Engineers, 1992; Denver International Airport, <u>Annual Report</u>. 1993.; Hedges, S. "A Taj Mahal in the Rockies". <u>U.S. News and World Report</u>. Pg. 48-53, 13 Feb. 1995; Meyer, M. and Glick. G. "Still Late for Arrival". <u>Newsweek</u>. Pg. 38-40, 22 Aug 1994; Moorman, R. "High Noon in Denver". <u>Air Transport World</u>. Pg. 38-40, Decision 1991; Scheier, R. "Software Snafu Grounds Denver's High-tech Airport". <u>PC Week</u>. Pg. 1-3, 16 May 1994; Smith, E. "The Promis of Colorado". <u>Colorado Business Magazine</u>. Pg. 21-25, Aug 1988; Steers, S. "DIA Resorts to Plan B". <u>Denver Business Journal</u>. Pg. 1A, 22 Jul 1993; "Uncertain Ecnonomy Forces Scaling Back of International Airport's First Phase". <u>Aviation Week & Space Technology</u>. Pg. 48-49, 11 Mar 1991; Wright, G. "Denver Builds a 'Field of Dreams'". <u>Building Design & Construction</u>. Pg. 53-56, 1994.

REFERENCES

Allison, G.T., 1971, "Conceptual Models and the Cuban Missile Crisis," <u>American Political Science Review</u>, <u>63</u>, 968-718.

Beyer, J.M. and Trice, H.M., 1978, *Implementing Change: Alcoholism Policies in Work Organizations,* New York: Free Press.

Beyer, J. M., and Trice, H. M., 1982. "The Utilization Process: A Conceptual Framework and Synthesis of Empirical Findings," <u>Administrative Science Quarterly, 27 (4/5),</u> 591-622.

Brunsson, N., 1982, "The Irrationality of Action and Action Rationality: Decisions, Ideologies, and Organization Action," <u>Journal of Management Studies</u>, <u>19</u>, 29-44.

Brown, S., and Eisenhardt, K., 1997, "The Art of Continuous Change: Thinking Complexity Theory and Time-paced Evaluation in Relentlessly Shifting Organizations," <u>Administrative Science Quarterly</u>, 42, 1-34.

Churchman, C.W., 1975, "Theories of Implementation," in R.L. Schultz and D.P. Slevin, <u>Implementing Operations Research/Management Science</u>, New York: Elsevier.

Coch, L. and French, Jr., J.R.P., 1948, "Overcoming Resistance to Change," <u>Human Relations</u>, <u>1</u>, 512-532.

Cohen, M.D., March, J.P., and Olsen, J.P., 1976, "A Garbage Can Model of Organizational Choice," <u>Administrative Science Quarterly</u>, <u>17</u>, 1-25.

Cooperrider, D, and Srivastva, R., 1987, "Appreciative Inquiry in Organizational Life" in <u>Research in Organizational Change and Development</u>, JAI ,vol. 1.

Cray, D., Mallory, G.B., Butler, R.J., Hickson, D.J., and Wilson, D.C., 1988, "Sporatic, Fluid, and Constricted Processes: Three Types of Strategic Decisions in Organizations," <u>Journal of Management Studies</u>, <u>26</u> (1), 13-40.

Cray, D., Mallory, G., Butler, R., Hickson, D., and Wilson, D., 1993, "Explaining Decision Processes," <u>Journal of Management</u>, 28 (3), 227-251

Cyert, R.M. and March, J.G., 1963, <u>A Behavioral Theory of the Firm</u>, Englewood Cliffs, N.J.: Prentice-Hall.

Dean, J., and Sharfman, M., 1996. "Does Decision Making Matter? A Study of Strategic Decision-making Effectiveness," <u>Academy of Management Journal</u>, <u>39</u>(2), 368-396.

Damanpour, F., 1991, "Organizational Innovation and Preference: The Problem of Organizational Lab," <u>Administrative Science Quarterly</u>, <u>29</u>, 392-409.

Dewey, J., 1910, <u>How We Think</u>, New York: Heath.

Doktor, R. and Hamilton, W., 1974, "Cognitive Style and the Acceptance of Management Science Recommendations," <u>Management Science</u>, <u>19</u> (8), 889-894.

Downs, A., 1967, <u>Inside Bureaucracy</u>, Boston, MA: Little & Brown.

Eisenhardt, K., 1989, "Making Fast Decisions in High Velocity Environments," <u>Academy of Management Journal</u>, <u>32</u>, 543-576.

Eisenhardt, K., 1997, "Strategic Decisions and All the Jazz," <u>Business Strategy Review</u>, <u>8</u> (3), 1-3.

Eisenhardt, K., and Zbaracki, M., 1992. "Strategic decision making," <u>Strategic Management Journal</u>, <u>13</u>, 17-37.

Fredrickson, J.W., 1985, "Effects of Decision Motive and Organizational Performance on Strategic Decision Processes," <u>Academy of Management Journal</u>, <u>28</u>, 821-843.

French, J. and Raven, B., 1959, "The Bases of Social Power," in (D. Cartwright, ed.), <u>Studies in Social Power</u>, Ann Arbor, MI: Institute for Social Research.

Germunden, H. and Hauschildt, J., 1985, Number of Alternatives and Efficiency of Different Types of Management Decisions, <u>European Journal of Operational Research</u>, 22(2), 178-190

Ginzberg, M., 1978, "Steps Toward More Effective Implementation of MS and MIS," <u>Interfaces</u>, <u>8</u>, 57-63.

Ginzberg, M. and Schultz, R., 1987, Special Issues in Implementation, <u>Interfaces</u>, <u>17</u>(3).

Gray, D.H., 1986, "Uses and Issues of Strategic Planning," in A. Thompson, W. Fulmer, A. Strickland (eds.), <u>Readings in Strategic Management</u>, Homewood, IL: Irwin (38-52).

Hackman, J.R., 1990, *<u>Groups that Work (and Those that Don't)</u>*, San Francisco, California: Jossey Bass.

Hall, P., 1984, <u>Great Planning Disasters</u>, Berkley, University of California Press.

Hart, G. and Bogan, A., 1993, <u>The Baldrich Prize</u>, New York: McGraw-Hill.

Harrison, M., and Phillips, B., 1991.   "Strategic Decision Making: an Integrative Explanation," <u>Research in the Sociology of Organizations</u>, JAI Press, 9, 319-358.

Hickson, D., Butler, R., Gray, D., Mallory, G., and Wilson, D., 1986. <u>Top Decisions: Strategic Decision-Making in Organizations.</u> San Francisco, CA: Jossey Bass.

Hickson, D., 1987, "Decisions Made at the Top of Organizations," <u>Annual Review of Sociology</u>, <u>9</u>, 319-358.

Huysmans, J., 1970, <u>The Implementation of Operations Research</u>, New York: Wiley.

Janis, I.J., 1989, <u>Crucial Decisions</u>, New York: Free Press.

Keeney, R., 2001, "Countering Terrorism: The Clash of Values", ORMS Today, December

Kolb, D., 1983, "Problem Management: Learning from Experience," in S., Srivastra (ed.), <u>The Executive Mind</u>, San Francisco, CA: Jossey Bass, 109-143.

Langley, A., 1989, "In Search of Rationality: The Purpose Behind the Use of Formal Analysis in Organizations," <u>Administrative Science Quarterly</u>, <u>34</u>, 598-631.

Langley, A., Mintzberg, H., Pitcher, P., Posada, E., and Macary, J., 1997, "Opening Up Decision-Making: The View from the black Stool," <u>Organization Science</u>, <u>6 (3)</u>, 260-279.

Lant, T.K., and Mezias, S.J., 1992, "An Organizational Learning Model of Convergence and Reorientation," <u>Organization Science</u>, <u>3 (1)</u>, 47-71.

Leavitt, H.L., 1987, <u>Corporate Pathfinders</u>, N.Y., Penguin.

Likert, R., 1967, <u>The Human Organization</u>, N.Y., McGraw-Hill.

Linstone, H., 1984, <u>Multiple Perspectives for Decision Making: Bridging the Gap Between Analysis and Action</u>, New York: North Holland.

Locke, E.A. and Latham, G.P., 1990, <u>A Theory of Goal Setting and Task Performance</u>, Englewood Cliff, N.J.: Prentice Hall.

March, J.G., 1994, <u>A Primer on Decision Making: How Decisions Happen</u>, New York: Free Press.

March, J., 1981, "Footnotes to Organizational Change", <u>Administrative Science Quarterly</u>, vol. 26, no. 4, 563-577.

McKie, D., 1973, <u>A Sadly Mismanaged Affair: The Political History of the Third London Airport</u>, London: Croon Helm.

Mintzberg, H. and Waters, J.A., 1982, "Tracking Strategy in an Entrepreneurial Firm," <u>Academy of Management Journal</u>, 25 (3), 465-499.

Mintzberg, H. and Westley, F, 2000, "Decision-making: It's Not What You Think", (unpublished manuscript, August, 2000).

Mintzberg, H., Raisinghani, D., and Theoret, A., 1976. "The Structure of Unstructured Decisions," <u>Administrative Science Quarterly, 21(2),</u> 246-275.

Nadler, G. and Hibino, S., 1990, <u>Breakthrough Thinking</u>, Rocklin, CA: Prima.

Nutt, P.C., 1979. "Calling Out and Calling in the Dogs: Managerial Diagnoses in Organization," Academy of Management Review, 4(2), 203-214.

Nutt, P.C., 1984, "Types of Organizational Decision Processes," Administrative Science Quarterly, 29 (3), 414-450.

Nutt, P.C., 1986, "The Tactics of Implementation," Academy of Management Journal, 29 (2), 230-261.

Nutt, P.C., 1993a, "Formulation Processes and Tactics," Organization Science, 4 (2), 226-251

Nutt, P.C., 1993b, "The Identification of Solution Ideas During Organizational Decision Making," Management Science, 39 (9), 1071-1085.

Nutt, P.C., 1998a, "Evaluating Complex Strategic Choices," Management Science, 44 (8), 1148-1166.

Nutt, P.C., 1998b, "Leverage, Resistance, and the Success of Implementation Approaches" Journal of Management Studies, 35 (2), 3-240.

Nutt, P.C., 1999, "Surprising but True: Half of Organizational Decisions Fail", Academy of Management Executive, 13 (4), 75-90.

Nutt, P.C., 2001a, "Decision Debacles and How to Avoid Them". Business Strategy Review, 13 (2), 1-14.

Nutt, P.C., 2001b, "A Taxonomy of Strategic Decisions and Tactics for Uncovering Alternatives", European Journal of Operational Research, 132. 505-527.

Nutt, P.C., 2002a, Why Decisions Fail: Avoiding the Blunders and Traps that Lead to Debacles, San Francisco, Calif.: Barrett-Koelher.

Nutt, P.C., 2002b,"Selecting Decision Rules For Crucial Choices: An Investigation of the Thompson Framework", Journal of Applied Behavioral Science, 38, 1, 99-132.

Nystrom, P., and Starbuck, W., 1984, "To Avoid Organizational Crises, Unlearn," Organizational Dynamics, 12 (4), 53-65.

Papadakis, V. and Barwise, P., 1998. Strategic Decisions. Norwell, Mass: Kluwer.

Palanyi, M., 1966, The Tacit Dimension, Garden City; N.J.: Doubleday.

Pascale, R., 1984, "Perspectives on Strategy: The Real Story Behind Honda's Success," California Management Review, 26, 47-72.

Pelz, D. C., 1978. "Some expanded perspectives on use of social science in public policy," in M. Yinger and S. J. Cutler (eds.), Major Social Issues: A Multidisciplinary View, 346-357. NY: Free Press.

Pettigrew, A., 1985, The Awaking Giant: Continuity and Change at ICI, Oxford: Blackwell.

Pfeffer, J., 1992, Managing with Power: Politics and Influence in Organizations, Boston, MA: Harvard University Press.

Pfeffer, J., and Salancik, 1974, "Organizational Decision Making as a Political Process: The Case of a University Budget," Administrative Science Quarterly, 19, 135-151.

Pinfield, L., 1986, "A Field Evaluation of Perspectives on Organizational Decision Making," Administrative Science Quarterly, 31, 365-388.

Pounds, W., 1969. "The process of problem finding," Industrial Management Review. Fall, 1-19.

Quinn, J. B., 1980. Strategies for Change: Logical Incrementalism. Homewood, IL: Dow Jones-Irwin.

Rodrigues, S. and Hickson, D., 1995. "Success in Decision-making: Different Organizations, Different Reasons for Success". Journal of Management Studies. 32 (5) 654-679.

Schon, D.A., 1987, *Educating the Reflective Practitioner*, San Francisco, CA: Jossey-Bass.

Schon, D.A., 1983, *The Reflective Practitioner: How Professionals Think in Action*, New York: Basic Books.

Schultz, R.L. and Slevin, D.P., 1975, *Implementing Operations Research/Management Science*, New York: Elsevier.

Simon, H. A., 1977. *The New Science of Management Decision*, (revised edition). Englewood Cliffs, NJ: Prentice Hall.

Soelberg, P., 1967. "Unprogrammed decision-making," Industrial Management Review, Spring, 19-29.

Snyder, R.C. and Page, G.D., 1958, "The United States Decision to Resist Aggression in Korea: The Application of an Analytical Scheme," Administrative Science Quarterly, 3, 341-378.

Starbuck, W.H., 1983, "Organizations as Action Generators," American Sociological Review, 48, 91-102.

Toulmin, S, 1979, *Knowing and Understanding: An Invitation to Philosophy*, New York: Macmillan

Van de Ven, A., Polley, D.E., Garud, R., and Venkataraman, S., 1999, *The Innovation Journey*, New York: Oxford University Press.

Witte, E., 1972, "Field Research on Complex Decision Making Process-The Phase Theory," International Studies of Management and Organization, 56, 156-182.