The Ethics of Information-Gap Decision Making

by William J. Davis, Jr. and Penny Koerner

Not taking risks one doesn't understand is often the best form of risk management.

– Raghuram G. Rajan[1]

Classic decision-making theory incorporates three echelons of information required to make a decision: certainty, risk, and uncertainty.[2] Information-gap theory provides models to make decisions under severe uncertainty.[3] However, it fails to address the ethical principles that should accompany decision-making under such extreme uncertainty. In addition, questions remain as to the ethical implications of making decisions that are satisficing – that is, achieving a desired level of performance instead of an optimal level of performance.[4] For example, a company realizes that it released toxic chemicals into a river polluting the ecosystem downstream. It has vowed to clean up the mess and will put into place a comprehensive plan of action to do so. However, there are a number of unknowns (and probably some "never can be knowns") that will impact the cleanup plan: rate of flow, degree of turbulence, type of terrain (rocks, mud, soil), temperature, concentration of the chemical at certain parts, etc. While a predictive model to clean up the river may be used, it will be incomplete and contain a great amount of financial risk and risk to reputation. Likewise, a military commander who determines to attack the enemy in an urban environment will also have significant information-gaps: where exactly is the enemy, what is the extent of the weaponry, how will the populace react, what meteorological factors will affect potential support, etc. Under the two

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circumstances described, where human life is threatened, the confluence of the three elements of certainty, risk and uncertainty now take on a particular gravitas, and this makes decision-making in information-gap situations unique.

> ...decisions affecting thousands require a certain degree of wise uncertainty and a strong ethical framework, particularly in the absence of certainty.

While the literature is replete with mathematical probabilities and theories that ameliorate information-gap decisions, what is missing is the ethical component of making these decisions wherein "nonlinear dynamics reveals chaotic uncertainties and indeterminate bifurcations arising out of what seem to be simple and perfectly deterministic equations of motion."[5] Another perspective on decision-making is highlighted in the text *Thinking Fast and Slow*. In this book, Kahneman introduces his prospect theory of thinking and decision-making and addresses cognitive biases in making decisions of all types.[6] However, his theory is cognitively based and deals only tangentially with ethical issues. In warfare, decisions are made that impact thousands of individuals in a fast-paced environment wherein information may be scarce. In addition, military culture prizes the ability to distill the complexities of warfare (and almost all strategic issues) down to a one-page point paper, one PowerPoint slide, an elevator speech, or a "bottom line up front" mentality. While Napoleon's Corporal may be an important concept when communicating to the masses, it should not be the standard used to communicate the complexities of an issue to strategic decision-makers who are responsible for the lives and livelihood of thousands and possibly millions who will be affected by their decisions.

Some in public policy have offered a new standard annotated as the "precautionary principle." This principle "…recommends preventing possible harm to human health and environment. It has gained support in the international community as a higher-order legal principle."[7] This manifests the argument that if harm is plausible, then a decision should not be made. Unfortunately, during times of armed conflict or when responding to an environmental disaster, this principle could not only be counter-productive, but also not an option. What we are proposing is that decisions affecting thousands require a certain degree of wise uncertainty and a strong ethical framework, particularly in the absence of certainty. This paper will add to the body of knowledge concerning ethical frameworks used in information-gap decision making.

Research

This research is an exploratory study in that it will use a semi-formal qualitative approach to determining the nexus of information-gap decision making and ethics, an interaction that has not been fully addressed in the literature. It is also exploratory in that it will examine the data from five disparate disciplines to either find commonalities or differences in ethical matters considered when making information-gap decisions. The target population for this study was leaders at the organizational and above level. The research was supported by use of a purposive sample of a group of five organizational or higher level executives (Associate Director of an international architectural firm, CEO of a national mortgage company, former Naval Flag Officer, President of a large regional law firm, and CEO of a national civil engineering firm) who provided data through semi-structured interviews on ethical considerations in information-gap decision making from their perspective. The choice of five interviews (below the 12 normally recommended for qualitative

research) was based on the principle that this research was exploratory and preliminary and would initially provide data on the nexus of information-gap decision making and ethics which informed the researchers of potential constructs not yet identified in the literature. In addition, accessibility of the five participants was a factor because random selection was not feasible due to time, accessibility, and monetary constraints. The varied disciplines of the strategic decision makers provided a multi-disciplinary look at potential ethical components. The two research questions below aided in determining the nexus of ethical frameworks and risk in decision-making. For example, an international banker may look at the decision to loan money to a business in a developing country as an exercise in fiscal risk (considering markets, etc.); however, what if that company is also accused of violating worker's rights or polluting the environment? Should not an ethical component be applied to the process? This research will help to determine the extent to which ethics could/should be applied to risk decision-making.

The primary research question:

What ethical framework/s do strategic decision-makers use when faced with making decisions about issues wherein not all the information necessary is available to avoid risk?

Secondary research question:

Does the ethical framework used in making decisions vary according to the type/magnitude of decision being made?

Survey questions:

The following five survey questions were asked to gather data that was then analyzed to answer the two research questions:

1. What situations have you seen or experienced where decisions had to be made without the information required to avoid risk?

2. What ethical considerations/framework do you use when making such a decision?

3. Are those ethical considerations more externally driven (e.g. company policies, community standards, social norms, etc.) or internally focused (e.g. own value system, personal ethical philosophy, etc.)?

4. Does that framework/considerations differ depending on the potential impact of the decision (e.g. personnel, the future of the organization, client impact)?

5. How do you view the integration or separation of ethical considerations and risk in your decision-making?

Question 1 provided context for the interviews. Having the participants recall specific instances supported avoiding the espoused values/values-in-use incongruence noted by Argyris and Schon in *Theory in Practice*[8]. In other words, this was a forcing function to get beyond the hypothetical. Question 2 provided data to substantiate the ethical considerations used or not used when making the decision. Question 3 provided data as to the dominant ethical framework. Question 4 determined whether differing contexts influenced the ethical considerations. Finally, Question 5 was designed to gather data on how participants view ethical considerations in relation to risk.

In qualitative research, the richness of the data pertinent to answering the research question is not contained uniquely within specific questions. It is the gestalt of the data produced by each interview question that will provide the richness necessary to answer the overall research questions. These questions each have components that will be used to answer the research questions.
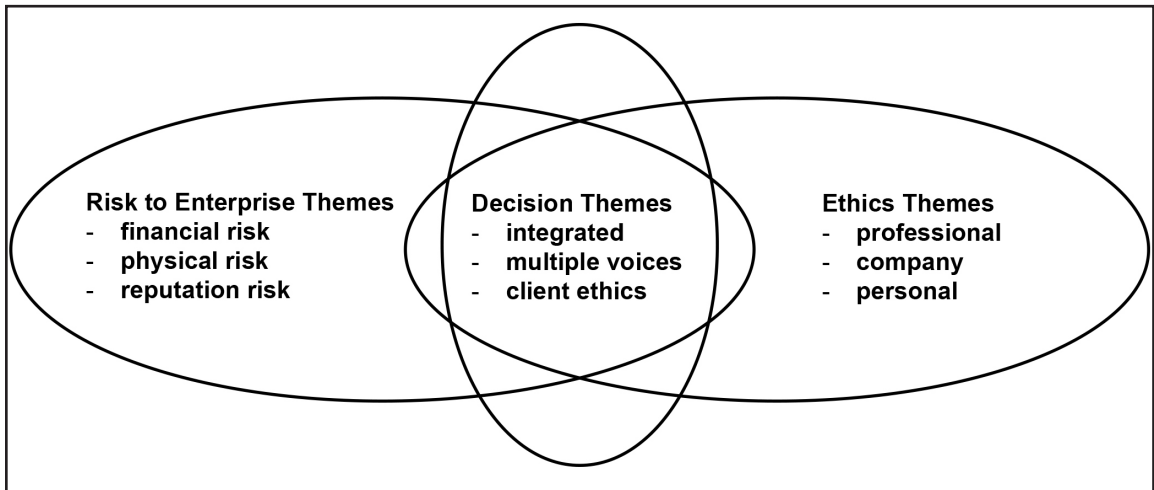
Risk to Enterprise Themes
- financial risk
- physical risk
- reputation risk

Decision Themes
- integrated
- multiple voices
- client ethics

Ethics Themes
- professional
- company
- personal

Figure 1. Risk Ethics Integration in Information-Gap Decision Making.

Methodology

All interviews were conducted via telephone and were recorded, transcribed, and analyzed per the specifications approved by the U.S. Army Command and General Staff College Institutional Review Board. Data was analyzed using established qualitative methods and identified themes or phrases across the interviews that could be used to provide an ethical framework for information-gap decision making for military leaders. Qualitative analysis was conducted using both Content and Thematic analysis. The researchers manually conducted this analysis using no software augmentation. Conducting Code Analysis, the researchers first coded the data for certain words or content, second identified patterns, and third interpreted their meanings.

Limitations

There were three significant limitations to this study. First, the exploratory nature of this study and resource limitations resulted in five interviewees compared to the normally recommended minimum of twelve. As such, generalizing the results is uncertain. Second, randomness was not possible and all interviewees were selected based on previous knowledge of

their duties and responsibilities which were projected to produce enriched data. Pre-selection bias was a limitation. It was mitigated by having each researcher independently analyze the data. Finally, the disparate disciplines of the interviewees might be considered a limitation since it could be argued that each discipline had its own code of ethics and resultant risks. However, this produced meta-concepts in risk and ethical decision making that could prove to be the strength of the research.

Data Analysis

Each of the two researchers independently coded the 21 pages of double spaced 12 font data. Both evaluated that there were approximately 173 separate codes resulting in 24 different categories which could be grouped into nine unique themes which could them be classified into three conceptual areas. Figure 1 (Risk Ethics Integration in Information-Gap Decision Making) shows the nine themes grouped into three concepts. The grouping of themes into those three concept areas will provide the framework for analysis.

General Data Characteristics

Analysis of the data generated some themes that could be typed under a single

concept classified as general characteristics of the environment. One recurring category among the interviewees was that there is never enough information available to eliminate risk completely when making decisions, so in essence all decisions were info-gap decisions. Quotes such as "I deal with decisions daily that involve risk with inadequate information," and "…there are times when I have to make business decisions when I may not have all of the information to totally avoid risk. I mean you can't." Also, temporally, there was a feeling that information-gap decision-making happened routinely, with common codes such as "daily," "every decision," and "day-to-day." These categories did not necessarily lend themselves to a distinct category other than to surmise that they had an environmental impact.

Risk

Interviewees also addressed risk in three major themes – financial risk, physical risk and risk to reputation. Each of the interviewees represented a different profession, yet each faced the same risk-associated themes when making decisions. The risk associated with decisions weigh heavily on how decisions are made.

- "I think it's much more difficult to make, for me, I think for most people, to make a decision that harms someone in a way professionally or personally."

- "It is ingrained, it is always trying to make the best decision that puts the fewest number of people at risk."

- "Yeah, so I'm in the, generally speaking, the risk business."

- "You were constantly making a decision to avoid risk and you often ran into ethical considerations."

The most prominent theme discussed by all interviewees was that of financial risk, to the enterprise or to themselves, but most importantly to the client.

- "Without full information then some risk in proceeding, the risk would be there. Not so much safety, there is always safety risk, but more risk of a wrong decision or decision that ultimately might cost the client more money or more time."

- "I deal with decisions daily that involve risk with inadequate information, typically it's a financial risk that would eventually be borne by our client."

- "We are always required to look out for our client's best interests."

> **The most prominent theme discussed by all interviewees was that of financial risk…**

Of those interviewees who discussed personnel decisions, each identified the financial risk to the enterprise associated with the making of hiring decisions.

- "In the last year and a half, my firm has hired 18 attorneys and in each of those situations there is risk. I mean from whether they're jerks you don't want to work with to whether they are going to be profitable."

- "There's always the risk when you're deciding to hire at your staff. There is a risk involved that I may be making the wrong decision."

Physical risk is a decision-making consideration for those interviewees that work in professions which contain inherent physical risk.

- "In military operations sometimes it's down to life or death and you have to decide, to I do something on a principle or an ethic and it ends up costing lives versus continuing

the mission the way it was intended to be even though I didn't agree with how it was going to work out."

- "It is always trying to make the best decision that puts the fewest number of people at risk."

> **A risk theme that was of concern to all interviewees was risk to reputation, personal/professional reputation or to that of the enterprise. In some cases the two could not be distinguished.**

A risk theme that was of concern to all interviewees was risk to reputation, personal/ professional reputation or to that of the enterprise. In some cases the two could not be distinguished.

- "So, really the consideration for me then would be more first the enterprise risk to call it to senior management's attention and two would be my reputational risk by hanging around."

- "When I was at XXXX, I did not decide to take on a client…they wanted me to bribe the state Fire Marshall…that I just flat out refused to do."

- "You know, there was maybe not enough information that it was clear as to the consequences, as to that I recognize that I was making the decision so there might be some consequences on my side of equation."

- "Recognizing it's okay to make decisions without all the information, but making them in a way that wouldn't be embarrassing."

Professional/Company/ Personal Ethics

Although the interview questions specifically asked about ethics and ethical frameworks when making decisions, the interviewees addressed ethics in three major themes – personal ethics, company ethics, and a professional codes of ethics. Although five disparate professions were addressed in the data, each one included professional ethical codes that were a factor in information-gap decision making. The professional codes provided the beginnings of an ethical framework.

- "So, the practice of Architecture is governed by a code of ethics…what we need to be ethical in our business star billing practices, we cannot enter into monopolies, any of that kind of stuff. It also requires us to be the best advocate possible for our client."

- "In my practice I'm sort of governed by two sets of ethical guidelines if you will. One is as an attorney I have very defined ethical duties to clients."

- "I have to deal with a lot of risk through their compliance people."

- "There are rules surrounding customer data and privacy that I would have to adhere to and how I handle that data and store it and all kinds of protocol."

- "So to some degree from the ethical stand point I have to pull back on some of my, ethical may be too strong a word, but pull back on some of my standards of defining the quality of the product to deal with regulatory compliance and to make that more comfortable."

Although written ethical guidelines and professional codes were discussed, qualitatively, they were described as a given, that they were there and had become ingrained to the point of

almost being second nature, e.g. "So, for years that has just been the training to do it. At this point it is ingrained."

The most prominent theme discussed throughout was that of personal ethics. Each interviewee mentioned how personal ethical beliefs were a key factor when making risk decisions without enough information.

• "The rest of the framework really is just the ideas, the thoughts, and beliefs of how I was raised."

• "I think I've always been more driven by my own personal philosophy especially when it came to environmental issues."

• "And I think I could have as an attorney under my ethical duties, I could have just chosen to believe him but we had reached a point where I couldn't do that. I mean, in my own personal ethics, I couldn't do that."

• "So I thought about things like fairness using wellness."

• "Would I want to see that story on the front page of the paper? That's how I always approach those kind of decisions."

There were also other aspects of the personal ethical theme, one of which was about doing the right thing. The researchers never followed up with a question as to what "doing the right thing" actually meant, but would recommend such data be included in the collection plan for further research. Therefore, the researchers would be remiss in conjecturing an interpretation of "doing the right thing." Did it mean doing what was right by personal measures, company policy, or professional codes?

• "And you put all those things kind of in front of you to think about and then you put that back stop question, which is, is this the right thing to do?"

• "Whichever way you go or definitely

evolve just think about doing what's right."

• "I think maybe the people go into it because it aligns with that, we are always looking to what is the right thing to do."

• "You had to go with what information that you had and so you would go back and rely on your instincts to tell you well what's the right thing to do."

> **A significant finding was that the ethics of the organization did not always align with the personal or professional code of ethics.**

Another ethical theme that manifested was one of company ethics. It appeared that in addition to professional and personal ethics, company or organizational ethics were a factor in making ethical decisions with limited information. A significant finding was that the ethics of the organization did not always align with the personal or professional code of ethics.

• "It was a very small firm but at one point there were, we had hired several women and the principals decided that they didn't want to hire any more women."

• "We think it is wrong and unethical to be using the world's resources that way."

• "When you hire someone, and I feel like when we hire someone you have a responsibility to them. And we need to support them, to enable them to be successful and there's risk involved."

• "Being successful in my business really requires relationships."

• "So I often have to make decisions relative to our policy without necessarily understanding what they're going to see as

a risk to their enterprise."

- "I have had to change my model; I have had to reconsider the position really and in some cases the ethical considerations…. So I can be tough on these guys but I can't be so tough that they don't want to do business with me."

- "So, I think it's hard, these are kind of hard words to say when you look at it to say ethical in terms of the opposite being unethical. I think it's more being, I think for me it's changing the vision to fit the market."

> **When interviewees spoke of client ethics, it was in terms of not really knowing what those ethics might be, therefore adding to the risk involved.**

- "I would say there are a number of instances in my career where you would run into situations where you felt people under your management weren't particularly ethical and my role was to drive a profitable business. And in some organizations it was very easy to call them out and get rid of them and in other organizations it was really hard because senior management would want to give the benefit of the doubt and in some cases look the other way."

- "It would often put us in a very what I would consider an uncomfortable, I wouldn't say unethical, but it certainly could cross that line from time to time. When you have to swallow what you believe is the right answer to be able to deliver the party line."

- "You find yourself kind of put into a situation where you have to exaggerate a point or an issue to try and sway over that staffer knowing that is what is going to

determine a vote in a particular committee that will advance a project or a program that the service wants to have. Even when you know that it is counter to just being/ doing the right thing."

Integrated Decision Concepts
(Client ethics, multiple voices, and risk/ethics integration)

The themes of client ethics, multiple voices and risk/ethics integration (REI) were categorized as belonging to the integrated decision concept. Each theme manifested as being used during the decision making process and could not be categorized as either risk or ethics. Although speciously it appears that client ethics is clearly in the ethics concept, it is not. When interviewees spoke of client ethics, it was in terms of not really knowing what those ethics might be, therefore adding to the risk involved. For example:

- "We are always required to look out for our client's best interest so for years that has just been the training to do it."

- "Where really I ever come into any conflict around that and that is having to convince clients at time to do the right thing."

- "And they literally wanted me to bribe the state Fire Marshal to not have to put in Deller sprinklers instead to only have to put in high capacity sprinklers."

- "So, I often have to make decisions relative to our policy without necessarily understanding what they (the client) are going to see as a risk to their enterprise. So, I have to move forward with the design to my enterprise without really knowing others."

- "They get pretty prickly about a number of factors; one giving away customer

information, which is becoming increasingly more sensitive and two letting those customers provide feedback in an open forum that they can't control."

- "There are a lot of things I can do, but at the end of the day nobody's going to let me go out there and trash their company so I have to put in place certain flexibility."

- "We have very strong feelings about what is right and best for our sailors, airman, and marines and the fleet for what they needed and yet we understood the political reality of trying to feed the constituents in a district or a state of a particular defense contractor."

REI was an important theme throughout the data. The essence of decision making in an information-gap environment was intimated to be the integration of the risk and ethics component of the situation. For example:

- "Where an individual can trip over that line is believing that your ethics are different than your organizations. Which really is not the case, I didn't have any different or higher ethics than what the U.S. Navy had, or the Department of Defense had, or U.S. military had or even the United States of America had that's where I was."

- "How you are behaving ethically mitigates a lot of risk. I don't see them as particularly separate ideas, I see them as dove tailing."

- "I think it probably differs, yeah depending on potential impact. I would say that I'm sure it does, I mean part of evaluating risk or thinking about any decision is looking at the potential impact. And I think it's much more difficult to make a, for me, I think for most people to make a decision that harms someone in any way professionally or personally."

- "I think it's probably integrated. I mean I certainly don't think about them separately. I wouldn't evaluate a potential decision first let me look at the ethical piece of it and then let me look at the risk because to me the ethical is part of the risk."

- I think that's probably the best evidence of the integration of risk and ethical considerations because as I said, acting in a way that is or feels or could be perceived to be unethical is a risk and I take that into consideration where someone who isn't as possibly sensitive to that or just doesn't feel that same about the ethics of it evaluates risk differently."

- "I don't think any differently, in other words if the risk is, I think about my work life, if the risk is huge. I might just not be willing to make a decision, I might tell the contractor I am not comfortable or that kind of thing. So that's maybe decision making as opposed to the ethics behind the decision making so I'd say my decision making might change but my ethics behind it probably not."

> **"How you are behaving ethically mitigates a lot of risk. I don't see [risk and ethics] as particularly separate ideas..."**

- "What I found was when it came to a very difficult decision and either you had integrate or you had separated you had to look at this decision and take a look at what the risks were. Was the risk in lives, was the risk in time, was the risk in resources, was the risk in reputation, and was the risk in follow-on operations? And, you put all those things kind of in front of you to think about and then you put that back-stop question, which is, 'is this the right thing to do'."
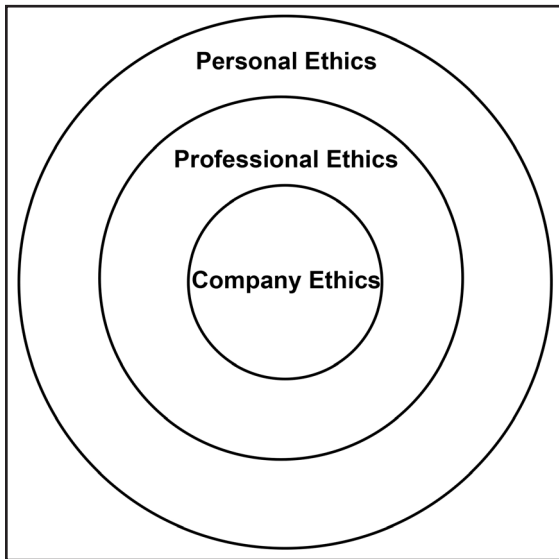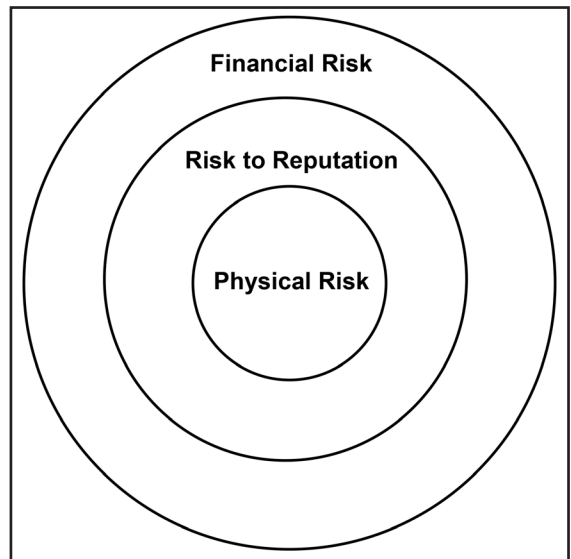
Figure 2. Ethical Hierarchy.

Figure 3. Risk Hierarchy.

Conclusions

The researchers used purposive sampling because of the expected richness of the data from the selected participants and the data did not disappoint. The themes that manifested contributed to an abundant gestalt on the topic of the consideration of ethics and risk in information-gap decision making.

In answering the primary research question: *What ethical framework/s do strategic decision-makers use when faced with making decisions about issues wherein not all the information necessary is available to avoid risk?* The researchers were able to make three distinct conclusions from the qualitative analysis of the data that apply in answering the question.

First, that although individuals thought about personal, company, and professional ethics when making a decision, it was personal ethics that determined the final action. Second, that while financial, reputation, and physical risk were considered when making decisions, it was financial risk to self, company or client that determined the final action. Third, that the research indicated that risk and ethical considerations are entwined in decision-making.

Ethical Hierarchy

Figure 2 represents the hierarchy of ethical considerations used in information-gap decision making. Although professional codes and company ethics were applied, the final ethical metric applied in all instances was a personal acceptance of doing "what's right."

The lawyer, who has a strict code of professional ethics which states that the lawyer must vehemently defend his or her client, made a final decision based upon personal ethics and stated they could not support defending a lying defendant.

In addition, it was noted in the data that although the company may look the other way at times, a personal intolerance of unethical behavior was paramount in making the decision to either continue employment for one's self or to terminate the employment of others. Even the military officer stated he would resign his commission if he couldn't abide by the rules of the organization. There was definitely a hierarchy that outwardly suggested that final decisions were based on personal ethics.

Risk Hierarchy

Figure 3 represents a hierarchical structure of risk considerations in information-gap decision making. Throughout the data, it was clear that financial risk (client, self, or company) was the primary consideration. Although interviewees considered safety and risk to reputation of self or company, financial risk was the focus of risk with the exception of the military officer.

Entwinement of Risk and Ethics

Figure 1 represents the interaction of risk and ethics in decision-making. The data showed that each interviewee noted the inextricable integration of ethics and risk when it came to decision-making. The REI theme was prominent throughout the data. The conclusion is that although risk and ethics are separate constructs, a third construct consisting of the confluence of multiple voices and client ethics in considering the ethical and risk aspects of decision-making manifests.

Secondary Research Question

Does the ethical framework used in making decisions vary according to the type/magnitude of decision being made? The data collected by researchers was inconclusive. Although asked directly in the interview questions (Does that framework/considerations differ depending on the potential impact of the decision e.g. personnel, the future of the organization, client impact?) the answers provided were inconsistent and contextual with no codes being prominent enough to garner a theme. A limitation of the study was the use of five disciplines and this proved to be detrimental to the collection of data in answering this question.

Recommendations for Future Research

> "And what I've discovered and I wouldn't have believed it going out the door of the military, I would have thought the military held way more ethical positions than what I saw in business; but, the truth is in business I have seen much stronger ethics in business than I've seen in the military."

The above quote from our military interviewee is closely aligned with the thoughts of B. H. Liddell Hart in the book *Why Don't We Learn From History* when he stated, "I found that moral courage was quite as rare in the top levels of the services as among politicians."[9] The researchers undertook this research to better understand the frameworks used by decision makers when faced with uncertainty and information-gaps. What we found was a clear use of an integrative framework for information-gap decision making. We recommend the following areas for future study to clarify the information gained during this exploratory study:

- A study to focus on the hierarchy of risk factors and ethics that are used for military officers during information-gap decision making.

- A study to investigate the truth of the commonly held perception that the military has higher ethical standards than business personnel. This should also include a study of military officers, Department of Defense officials, as well as other government agency employees.

- A study to develop a more definitive theory as to the construct that manifested in our research – the nexus of risk and ethical considerations in information-gap decision making. ***IAJ***

NOTES

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