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DECISION MAKING IN ORGANIZATIONS: INTUITION, INFORMATION, AND RELIGIOSITY¹

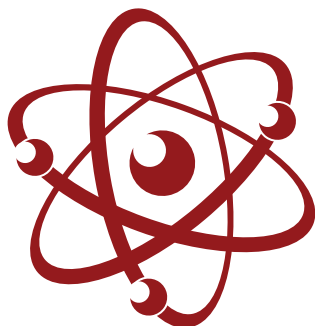
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Abstract: Previous research in experimental psychology suggests that religious belief is influenced by one's general tendency to rely on intuition rather than information. A corollary emerging from this based on *balance theory* is that managers who are religious might make more intuition-based decisions than their counterparts who are not religious. The latter group might tend to make more information-based decisions. Recent research also indicates that the use of scientific method, a close cousin of information-based decision making, triggers moral behavior. Employing critical incident technique, the present researchers test this potential relationship among business executives at various ranks, various cultural contexts, and holding various religious beliefs. Our analysis indicates that theist managers, both gnostic and agnostic, preferred intuitive decision making. Likewise, both gnostic and agnostic atheist managers preferred information-based decision making. Also, atheist managers articulated better logical explanations as to why their decisions were morally correct.

Keywords: religiosity, decision making, spirituality, reason, intuition, management, organizations

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INTRODUCTION

Managerial decision-making style can be classified into intuitive or rational [1, 2]. Managerial information processing and decision making reflect this underlying dual nature of human consciousness, observes Robey and Taggart [3]. According to a study by Khatri and Ng [4], Organizational performance in an unstable environment was positively correlated with the managerial use of intuition although the relationship was found to be negative in stable environments. The unstableness of environment may not be the only factor here – associated factors that typically covary with this include incomplete information and also the rate of change of the currency of information. The rational model works better in tried and tested conditions, strategic first mover decisions are almost always riddled with puzzles, and avoidance of intuition will be perilous.

Plato, in his *Republic*, considered intuition as a quality higher in order than intelligence, reason, belief, and illusion. From the time of Plato, intuition was considered to be non-inferential, at least in a conscious way. Descartes clarified the concept of intuition by stressing its a-priori nature: fundamental knowledge is gained not by referring to sensory experiences but rather from the 'natural light of reason'. Intuition is attaining direct knowledge without the interference of conscious thought [5]. Our intuitions are affectively charged judgments, although domain knowledge, prior learning, and task characteristics determine the effectiveness of intuitive judgements [6].

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Intuition emerges from the cognitive structure of human mind and it is possible that it may have imprints of what worked or did not work in the past [7]. Notwithstanding the recent advances in social cognitive neuroscience and allied fields, intuition is still a largely underexplored territory [8]. What we know is that intuitive judgments are made based on largely effortless and automatic processes. Intuitiveness is often associated with thinking that is reflexive, heuristic, associative, holistic and experiential [9]. On the other side, we can posit reflective judgments as those that are made consciously based on the systematic analysis of data [10].

If it is agreed that beliefs in the supernatural spring to mind automatically or effortlessly, such beliefs may as well be termed as intuition driven [9]. Since the consistency motive or the drive toward psychological balance is something that is fundamental to human nature [11, 12], intuitive judgmental style may be employed by religious individuals even in the conduct of more secular aspects of their lives.

Religiosity might predict not only managerial decision-making style but also the moral nature of the decisions. Decision alternatives are morally judged before one alternative is adopted. Based on a widely held belief, religiosity influences morality. Mainstream society holds that religious people are more likely to be concerned about the morality of their decisions [13]. Wright [14] sees moral development as the progressive betterment of self-consciousness and conduct by the instrumentality of volition. He posits religion as the final step in the self-organization process leading to superior morality. In other words, to say the least, religious faith provides a fertile context for moral development. Yet, recent research by Wainwright [15] offers a critical relook at this claim and concludes that the relationship is not so straightforward. McKellams and Blascovich [16] fortifies this view by highlighting that rational-scientific thinking rather than religious thinking is positively associated with moral development. In the light of this discussion, we believe that managerial decision-making presents a special but important context to examine the impact of religiosity upon managerial decision-making style.

RELIGIOSITY, INTUITION, AND DECISION MAKING

It is widely known that religiosity influences one's ethical standards. Research by Keller, Smith, and Smith [17] highlights how accountant's views on what is ethical varies in accordance with their religious faith. Religious politicians employ a different set of cognitive heuristics in arriving at their judgements, observe Lau and Redlawsk [18]. Risk aversion is positively correlated with religiosity and religious finance managers are less likely to invest in risky stocks with uncertain payoffs [19]. These authors also conclude that religious managers tend to choose employers similar to their current ones, when they switch jobs. The anxiety while dealing with uncertainty, rather than religiosity, could be the key factor that determines the conservative behavior. Uncertainty avoidance is a key driver for religious faith, too [20].

Religious managers tend to construct an issue in ethical terms [21]; the inherent uncertainty this construction affords may make a fertile condition for the application of intuition in judgements. Ruth-Sahd and Hendy [22] observed that religious nurses employed more of intuition in their patient care decisions. Religious purchase managers used intuition in key decisions and then used post hoc moral reasoning to justify them rationally. The cognitive-affective process sequence is: issue construction, intuitive judgment, explanation, and justification. Cavanagh and Hazen [23] takes a potentially controversial position that prayer organizes the mind to see causes and consequences clearly and thus lessens the chance of making wrong decisions. The often-found negative relationship between reasoning and religiosity happens only in those situations when intuition and logic are in conflict [24]. If this is true, religious managers might apply their bias towards intuition only in those situations where there is an unresolvable conflict between intuition and reason. Ecklund and Scheitle [25] investigated the religious faith of academic scientists at twenty-one elite U.S. research universities and found that their trust in the scientific method was not diluted by their faith. It is more likely that religious faith adds a different kind of awe factor into their investigations and findings.

THE BELIEF-NONBELIEF SPECTRUM

Most people hold a particular view on the belief-nonbelief continuum as well as on the certainty-uncertainty conundrum [26]. Based on this classification (see *figure 1*), atheists are individuals who do not believe in god(s); theists are those who believe in god(s); gnostic individuals hold that the existence or non-existence of god(s) is verifiable; and, finally, agnostic individuals hold that this knowledge is not verifiable. Thus, a gnostic atheist is someone who not only does not believe in god(s) but also claims to know that for a fact. An agnostic atheist also does not believe in god(s), but does not make any claims about the verifiability of this position. Similarly, an agnostic theist believes in god(s), but does not claim that his belief is factually verifiable. A gnostic theist, on the other hand, not only believes in god(s), but also claims that his belief is provable.

Dawkins Scale [27] is a spectrum of theistic probability, devised by the English evolutionary biologist Richard Dawkins. In his famous but controversial book, Dawkins suggests certain milestones to summarize one's place along the spectrum:

1. *Strong theist*. 100% probability of God. "I do not need to believe, I know for sure".
2. *De facto theist*. Very high probability but short of 100%. "I don't know for certain, but I strongly believe in God and live my life on the assumption that he is there."

3. *Leaning towards theism*. Higher than 50% but not very high. "I am very uncertain, but I am inclined to believe in God."

4. *Completely impartial*. Exactly 50%. "God's existence and non-existence are exactly equiprobable."

5. *Leaning towards atheism*. Lower than 50% but not very low. "I do not know whether God exists, but I'm inclined to be skeptical."

6. *De facto atheist*. Very low probability, but short of zero. "I don't know for certain, but I think God is very improbable, and I live my life on the assumption that he is not there."

7. *Strong atheist*. "I know there is no God, with the same conviction as Jung knows there is one."

THE RESEARCH PROBLEM

Despite the diversity of personal beliefs [28], social scientists have been able to successfully predict the broad religious orientation of individuals based on variables such as social status, gender, race, region and city size, family structure, and family denominational affiliation [29, 30]. Cognitive structure might impact religiosity, too [31]. Noting that cognitive style, social context, and demographic antecedents might largely predict the religious orientation of an individual, the present researchers argue that religious orientation can, in turn, predict the decision-making styles of managers. In other words:

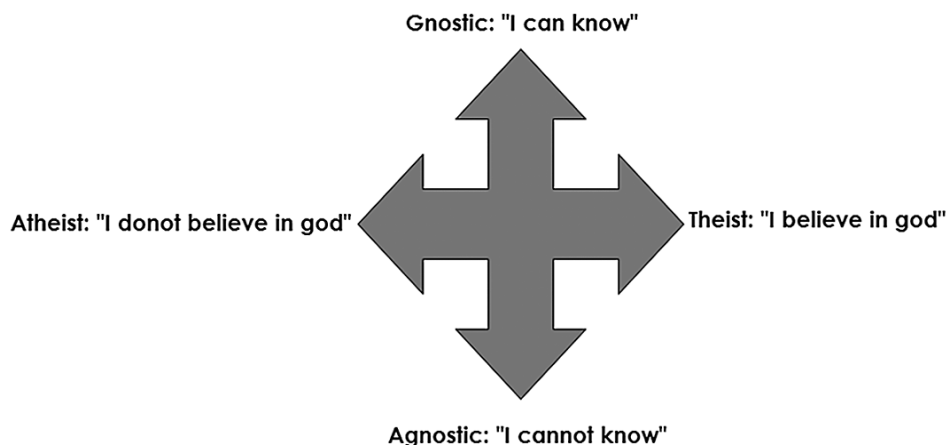


Figure 1. The Belief-Certainty Classification

Since religious beliefs are largely based on gut feelings, could managers who are religious be more prone to the use of similar gut feelings for managerial decision making, too? Are non-religious managers more likely to adopt information based decision strategies?

The support for this comes from the research by Shenhav, Rand and Greene [9] which posits that belief in God is intuitive and that the extent to which one believes in God may be influenced by one's more general tendency to rely on intuition. In order to enrich the study, we also bring in the research by Ma-Kellams and Blascovich [16], according to whom even merely thinking about the scientific method can make people to behave morally. This could mean that decision makers following the scientific method might make morally superior decisions. Reliance on intuition or gut feelings is linked to the trust one gives to fake news, observes Garrett and Weeks [32]. Poor understanding of the physical world and paranormal beliefs go together [33]. According to Saribay and Yilmaz [34], religiosity is predicted by a special kind of analytic cognitive style: religion is related to quick and intuitive thinking processes and religious people tend to be less reflective. These authors also state that religiosity is co-positioned with low cognitive ability and low IQ levels.

In the light of the above discussion, the following relationships are proposed for empirical examination:

- I. Theist managers prefer to employ intuition based managerial decision-making style.
- II. Atheist managers prefer to employ information based managerial decision-making style.
- III. Atheist managers tend to articulate logically sound explanations of the moral correctness of their managerial decisions.
- IV. Theist managers tend to articulate faith bound explanations of the moral correctness of their managerial decisions.

METHOD

The study employed a mixed method of research to understand the managerial decision-making styles of the participants chosen for the study and how the decision-making styles are related with aspects of religiosity. Data collection involved the use of a self-administered questionnaire. Item statements included in the questionnaire measured the religious orientation of the respondents. The questionnaire also included four mini case studies presented as critical incident narrations with the need to make decisions. Two colleagues of the researchers examined the cases for face validity and agreed that the cases showed a good range of decision complexity and the presence of decision support information. Responses to these case studies coupled with an understanding of the religiosity of the respondents would help the researchers better understand how the use of reason Vs intuition in managerial decisions are related to the religious orientation of the respondents.

Data was collected from Chinese business executives during 2011 and 2015. The 2011 sample consisted of 25 mid and senior level software development executives working in the Dalian Software Park, Liaoning Province, China. The 2015 data came from 17 engineering managers in various industries located in the Zhengzhou High-tech Industrial Development Zone, Henan Province, China.

The following classificatory scheme was used in the questionnaire to identify the religious orientation of each participant:

The critical incidents were case studies describing relatively simple managerial decision-making situations. The respondents were asked to make decisions and also to briefly indicate how they arrived at their solutions. The responses were qualitatively analyzed following the guidelines established for content analysis and then

Table 1

Classificatory scheme of religiosity orientation

I do not believe any god exists BUT I do not claim to know that no god exists.	Agnostic atheist
I do not believe any god exists AND I do claim to know that no god exists.	Gnostic atheist
I believe a god exists BUT I do not claim to know this belief is true.	Agnostic theist
I believe a god exists AND I do claim to know this belief is true.	Gnostic theist

contrasted with the respondents' religiosity orientation. The final question in the questionnaire asked the respondents to explain qualitatively the moral correctness of the decisions they made.

ANALYSIS AND DISCUSSION

Out of the 37 managers who participated in the study, 14 reported they were agnostic atheists. Of the remaining, 9 were gnostic atheists, 8 were agnostic theists, and the remaining 6 were gnostic theists. In terms of education, 2 had research degrees, 6 had a masters degree, 19 had an undergraduate degree, and the remaining ones were at least high school graduates (with additional vocational training). Males were 23 in number and the rest of them were females. In terms of age, 16 were in the age group of 35–50, 7 were between 20–35, and the rest of them were above 50 years.

Preliminary analysis indicates that, while religiosity per se is not a significant predictor of managerial decision style, agnosticism component indeed is. Agnostic managers were more likely to depend upon intuition, irrespective of whether they are theists or atheists. This is amenable to the post-hoc interpretation that agnosticism is "I cannot know" and hence I adopt a decision style that taps into intuition. It must however be noted that while it could be true that agnostic managers tap more into intuition, it is not right to claim that they make qualitatively superior decisions (in the light of the prevalent popular notion that intuition is superior to reason).

More than particular factors in isolation, their interaction ([Agnosticism – Gnosticism] X [Theism – Atheism]) helps us better predict decision styles. It was observed that gnostic theists tended to feel more deterministic about the consequences of their decisions. They trusted in the divinity and even when presented with ambiguous decision situations, they were confident about the quality of their decisions. They rationalized their decisions, despite the lack of sufficient data. When presented with ambiguous decision situations, they did not quickly recognize ambiguity or state that as a stumbling block. Gnostic atheists felt it important to solve a problem step by step, following a logical process. They tended to think that the use of relevant data and

good decision processes alone ensured reliable outcomes. They did not offer solutions to some of our sample problems, for want of details. Among all the groups, agnostic theists made the most of leap of faith decisions. They did not feel the need to rationalize decision making because the consequences were unknowable anyway. Yet, they trusted in the greater powers of their intuition to yield superior quality outcomes. Only reluctantly did the agnostic atheists offer solutions to some of the ambiguous problems that we presented to them. Unlike gnostic atheists, however, they were not adamant for data because anyway these problems were not deterministically solvable. They made intuitive decisions but exhibited the least amount of trust in their solutions.

The moral correctness of the decisions was explained differently by respondents of different religious orientation, too. Knowledge Vs belief made significant differences in the explanations. Gnostic theists and gnostic atheists were both certain about moral consequences of their decisions. Some gnostic atheists admitted that their decisions were not morally correct; nevertheless, the point to be stressed is that they knew the moral incorrectness of their decisions. Agnostic theists assumed moral correctness because they felt their decisions were going to do good for others; generally, they did not attempt to rationalize the moral correctness.

As noted in a few paragraphs above, agnostic theists made intuitive decisions but did not trust the value of their decisions. However, when it came to judgements on the moral correctness of their decisions, they were more singular in their opinions despite them being agnostics. Their belief made them all believe that their decisions were morally correct. In other words, belief thumped over knowledge when it came to the determination of moral correctness.

CONCLUSION

This research reveals some interesting differences in the use of intuition among managers holding different religiosity views. Many authors in the "spiritual turn of management" school uphold that spiritual practices of managers improve their abilities of intuition which in turn helps

them make superior decisions [35, 36]. While this study does not raise a counter view against the burgeoning literature on spirituality and management, it questions the view that religiosity or the spirituality perspectives held by the decision makers will make their decisions superior.

The strengths of each approach should be optimally used by the decision maker concerned. The findings of this study call for a more sympathetic and integrative understanding of decision style diversity. The authors of this research wish to reiterate that any attempt to classify religious people as less intelligent be resisted. We do not yet have that evidence. There are numerous world class scientists and thinkers who believe in divine forces. What the findings

indicate are that certain managerial decision-makers have a greater tendency to simplify the realities surrounding their decision situations and make decisions in a manner that conserves cognitive effort. We should also note that this study is inconclusive on whether religiosity or intuition precedes the other. Some of the atheist respondents in this study did make intuitive decisions: so, there is also the probability that even atheists would make swift and instinctive decisions while pressed for time or while the negative consequences of a wrong decision are not considered to be critical for their businesses. Since we used imaginary case studies as critical incidents, this is a real possibility and hence is also a limitation of this study.

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В БАЗУ ДАННЫХ WIPO PEARL ДОБАВЛЕНА ТЕРМИНОЛОГИЯ, КАСАЮЩАЯСЯ COVID-19



В терминологическую базу данных WIPO Pearl добавлено примерно 1500 новых терминов по COVID-19 на 10 языках, с тем чтобы предоставить в распоряжение изобретателей, ведущих поиск новых лекарств от коронавирусной инфекции и средств ее диагностики, базовый набор профильных терминов с их эквивалентами на различных языках.

База данных WIPO Pearl содержит 147 основных понятийных кластеров, относящихся к COVID-19, что эквивалентно почти 1500 терминам, поскольку каждый кластер содержит термины на 10 языках. В основном они относятся к таким областям, как биология, медицина (в особенности эпидемиология и диагностика) и общественное здравоохранение; каждый кластер содержит термины на английском, арабском, испанском, китайском, корейском, немецком, португальском, русском, французском и японском языках. Цель – обеспечить последовательность и четкость основной терминологии, связанной с пандемией COVID-19, на различных языках. База данных будет доступна третьим сторонам для скачивания и использования на безвозмездной основе.

Эта мера будет способствовать развитию международного сотрудничества и обеспечению более удобного доступа к информации, содержащейся в патентных документах, а также в других открытых источниках по всему миру.

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