

Intensive Session 3: What is Decision-Making?

Introduction

Philosophers have pondered and reasoned about human decision-making for millennia. In early mediaeval times, the theologian Johannes Buridan (ca. 1360¹) is attributed with the story of “Buridan’s Ass”: a hungry donkey positioned at an equal distance between two bales of equally succulent, equally fresh bales of hay. The donkey dies of starvation owing to being unable to decide which bale to eat. Buridan (apparently) used the story to illustrate the difference between humans and animals -- the poor donkey lacks free will, thus cannot come to a decision; humans, with free will, can make an arbitrary choice, even when both possible outcomes are equally desirable.

What separates a ‘decision’ from mere (random/impulsive) choice? Make some notes of the words and phrases you associate with decision-making. Do you find the “Buridan’s Ass” example, above, ridiculous or intriguing? If you were choosing to buy a new vehicle, or selecting a new mobile phone, how would you choose between equally desirable choices?

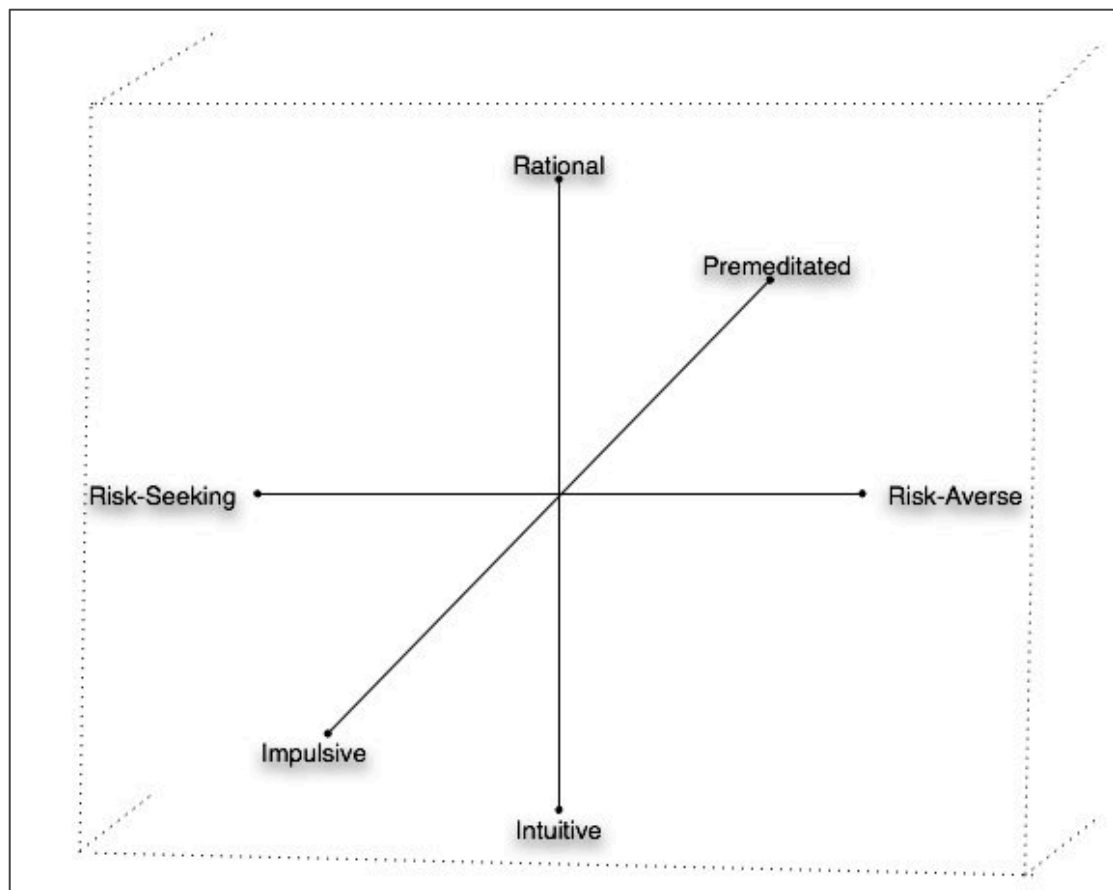
Buridan is not the first to have pondered whether there is anything special about humans’ capacity for decision-making. Millennia earlier, the Greek cynic Diogenes of Sinope (ca. 370 BCE²) suggested that animals make logical decisions in ways similar to humans: a dog, hunting for its master, is confronted by a junction with three possible turnings. It sniffs at the first, then at the second, then races off down the third without sniffing (having found no trace at the first two). [For the pedants amongst us, this is known as the law of disjunctive syllogism: amongst three alternative choices, if the first two are eliminated, choose the third!].

Consider again the thoughts you had above. Choosing a new car – what information sources would you use? To what extent would you calculate or reason about the best purchase? How influenced would you be by friends’ recommendations? Prior experience? Advertising? ‘Getting a good deal’ (whether or not the vehicle best meets your needs)? How might your decision-making change if you were forced (by circumstances) to choose the least worst amongst a number of bad options, rather than choosing amongst equally good options?

Effective decision-making is about making a choice based on the best information available and putting that information to effective use. “Deciding”, in the sense used in this module, is not about making arbitrary choices (flipping a coin, sticking a pin in a list), because acting at random (or acting on a whim / impulse) is not decision-making; it is merely choosing. In the sense intended for this module, “deciding” is a process of making best use of information available to select the optimal course of action (or, at least, the least worst). “Decision-making” in this sense may be individual or collective (and there are critical differences between the two), but it depends crucially upon the quality, accuracy, timeliness and usability of the information available to the “decision-maker”.

In this session of this module, our concern will be with setting the scene for this relationship between decision-making in operational management theory and the information resources upon which effective decision-making depends. In particular, we begin by investigating existing theory about decision-making by concentrating upon the “decision traps” to which all decision-makers may be prone.

Consider the 3D ‘graph’ below – you can think of it as like a cube or box inside of which you can position yourself as closer to or further away from the extremes of each axis. Where would you place yourself – as a decision-maker (in relation to your work, your family, your social responsibilities)? Does your position within the box depend on the importance of the decision being made (we are not considering moment-by-moment decisions and arbitrary choices here; only those which may make a significant difference to your and others’ futures)? Has your position changed depending on the responsibilities you have taken on over time?



In the business world, there are some who claim that good decision-making is based on experience - having a “hunch”, intuitive “gut-feeling” that one course of action is better than others. There may be some truth in this -- but even the most ‘intuitive’ of decision-makers has to acknowledge that their decisions must also be based on the information available - not the least of which comprises the information about which courses of action are feasible and available.

Equally, those who oppose the view that effective decision-making in organisations can be wholly ‘intuitive’ may still express reservations about how ‘rational’ organisational decision-making (in businesses, institutions, complex organisations) can be. Herbert Simon, one of the forefathers of modern studies of organisational behaviour, challenged the idea that rational, premeditated, risk-averse decision-making characterised the most successful enterprises:

“[The rational approach] . . . suffers from superficiality, oversimplification, lack of realism. It has confined itself too closely to the mechanism of authority, and has failed to bring within its orbit the other, equally important modes of influence on organisational behaviour. It has refused to undertake the tiresome task of studying the actual allocations of decision-making functions. It has been satisfied to speak of ‘authority’, ‘centralisation’, ‘spans of control’, ‘function’, without seeking operational definitions of these terms.” (Simon, 1952, p. 53³)

Spend a little time re-reading this quotation. In your own words, note down examples of what you think Simon may mean by ‘authority’ ‘centralisation’, ‘spans of control’, ‘function’ in the context of organisational decision-making.

Decision Traps

One way to begin to begin to understand the difficulty of identifying and defining what makes organisational decision-making ‘effective’ (how to make good individual and collective decisions in business) is to consider the opposite: what can (and often does) go wrong in choosing the optimal alternative based on the best available information? Many times, decision-makers make poor decisions, not so much because of lack of information or even inaccurate or obsolete information; their decision-making is flawed because the individual or collective decision-maker has fallen into a “decision trap”.

A summary of (so-called) “decision traps” is provided in the Reading (PDF file) available for this Session’s Activity. The summary is based on a more extensive discussion of “decision traps” available from Hammond, J.S., Keeney, R.L., and Raiffa, H., (2006), Harvard Business Review (HBR), re-published in HBR “*Making Smart Decisions*”, 2011, pp. 1 – 27.

If you would like to see a video of how easily human beings fall into “decision traps”, then take a little time next week to watch (and rewind if you need to – it goes very fast!) a talk given by the American psychologist, Dan Gilbert, on reasons for bad decision-making – available from the link, below:

Dan Gilbert on Decision Making (Video):

http://www.ted.com/talks/dan_gilbert_researches_happiness.html

Activities for Session 3.1:

Activity 1:

Select at least two of the following tasks and discuss in your groups relating to the “decision traps” concerned (See guidance, below).

1. *Consider and discuss situations in which the “anchoring trap” may have a negative impact on effective decision-making. (For example, a builder gives you a quote for building work at £1,500; a second builder quotes £450). You choose the first one because the second quote is clearly too low to ensure the work is of sufficient quality! (or, perhaps, the first builder did not really want the job?). Concentrate your thoughts on how best the “anchoring trap” may be avoided.*
2. *Consider and discuss situations in which the “status-quo trap” may have a negative impact on effective decision-making. (For example: your supplier has notified you of an increase in their prices; you have used this supplier for many years. Does the extra cost of keeping your present supplier outweigh the cost of finding a new one?). You choose to stay with the existing supplier because you trust them more than the alternatives. Concentrate your thoughts on how best the “status-quo trap” may be avoided.*
3. *Consider and discuss situations in which the “sunk costs trap” may have a negative impact on effective decision-making. (For example: having been responsible for recruiting a staff member to a highly-paid position, recent appraisals and staff complaints indicate that they are under-performing, despite being sent on training and staff development courses. You may choose to terminate the employee’s contract, but that would mean beginning again the recruitment and training process. Should you stick with your original decision and invest more in improving the employee’s performance?). Concentrate your thoughts on how best the “sunk costs trap” may be avoided.*
4. *Consider and discuss situations in which the “confirming evidence trap” may have a negative impact on effective decision-making. (For example: As a small business manufacturer of B2B components, you are trying to decide whether to abandon plans to open another production plant, in a different region, owing to fears that the current recession will weaken demand from your current major clients. You seek advice from a business partner, who recently ‘moth balled’ a factory, in order to check her reasoning. She confirms that her decision was based on a feared weakening of demand). Concentrate your thoughts on how best the “confirming evidence trap” may be avoided.*

5. *Consider and discuss situations in which the “framing trap” may have a negative impact on effective decision-making. (For example: suppose you had £200 of disposable cash. You are asked by a (gambling) friend: “Would you accept a 50:50 chance of either losing £30 or winning £50?” Would you accept the chance? Suppose, instead, the offer were framed as follows: “Would you prefer to keep your cash at £200 or to accept a 50:50 chance of having either £170 or £250 cash-in-hand?”. Rationally, your answers to both questions should be the same (since the offers are the same). Studies appear to show, however, that many people refuse the offer in the first question, but accept it for the second). Concentrate your thoughts on how best the “framing trap” may be avoided.*

6. *Consider and discuss situations in which the “prudence trap” may have a negative impact on effective decision-making. (For example: defence procurement agents put out a tender for a new generation of missiles – a contract for which your company wishes to compete. The contract, however, requires that the missiles be designed and engineered to meet their “worst case” analysis of operational requirements – even though the best analyses of operational conditions show that these “worst cases” may arise in fewer than 1% of missile firings. Meeting the additional cost of engineering the missiles to operate in such conditions will more than double the price for your bid). Concentrate your thoughts on how best the “prudence trap” may be avoided.*

Guidance:

Whatever your choices and your explanations of the means to avoid the traps described, you need to listen to others’ comments and explanations. Are the suggestions in line with your own? Have you (or they) understood the way in which a decision trap may impact negatively upon a decision? For example, what makes the ‘status-quo’ trap, as described, a potentially wrong decision (give reasons)? Is there a way of “ranking” (placing in order) the alternative decisions which would enable the decision-maker to act upon the highest ranked decision?

Does the risk or danger associated with your chosen “decision trap” depend upon the context within which the decision has to be made? Or upon the (relative) importance of the outcome? Or upon whether the decision-maker is adopting a ‘rational’ or an ‘intuitive’ approach. You should include in your online discussion with others your answers to these questions and (if you can) the comparisons with your own work- or personal- experience which illustrates your answers.

Purpose:

The objective of this activity is to enable participants to share perceptions of the risks associated with decision-making in practical personal, social and work-related contexts. It is hoped that, by comparing and commenting upon each others’ thinking about the means to avoid such “decision traps”, you will find suitable contexts within which theories and techniques to support decision-making in business (introduced later) acquire a practical relevance.

Activity 2:

Make a careful reading of the seminal research paper by Tversky, A., and Kahnemann, D., “*Rational Choice and the Framing of Decisions*”, Journal of Business, 59, 4, part 2, pp. 251 -278, Chicago: Chicago University Press, 1986 – available from the Moodle site for this Session’s Activity. It is a fairly old research paper but contains a lot of detail about the debate over decision analysis in business. Make notes formulating your own characterisation and definition of what makes a decision ‘rational’ (as mentioned pp. 1-2, above). Reflect on what you believe distinguishes individual from collective decision-making (in business contexts); try to recall and record instances how well (or badly) decision-making processes in your own work-related / organisational context conform to Tversky’s analysis of decision-making factors.

There are many details and examples in Tversky’s study. Do not worry if these prove difficult to understand initially. Focus instead upon Tversky’s characterisation of the distinction between ‘normative’ and ‘descriptive’ factors in rational decision making. Where terminology or points raised prove to be difficult for you to understand fully, raise questions (giving the page reference from the paper) on the online forum so that others may assist or raise similar questions. We will be considering this paper further in later weeks.

Guidance

This seminal paper is being introduced early in the module to enable you to grasp one of the central academic debates which surround research into business decision-making. Try to make notes which explain in your own words the distinction between a ‘normative’ and a ‘descriptive’ theory of decision-making (in business), together with the arguments Tversky makes in support of his claim that

“We argue that the deviations of actual behavior from the normative model are too widespread to be ignored, too systematic to be dismissed as random error, and too fundamental to be accommodated by relaxing the normative system. . .” (p. S252)

Purpose

This seminal research paper is introduced early in the module to enable participants to become familiar with a central debate about how best to theorise about business decision making and to confront core issues about the centrality of “rationality” to optimal decision making in business.

If you want to anticipate the questions and problems of Week 2, then you may wish to undertake preparatory research into problems like “the St. Petersburg Paradox” (Bernoulli), “Pascal’s Wager”, “the Prisoner’s Dilemma”, “Parfit’s Hitchhiker” and/or “Newcombe’s Problem”. Some of these are discussed in the Wiki:

http://wiki.lesswrong.com/wiki/Decision_theory#Thought_experiments

References used:

¹ Johannus Buridan, (ca. 1360), in King, Peter (1985) *John Buridan's Logic: The Treatise on Supposition; The Treatise on Consequences*. Translation from the Latin with a Philosophical Introduction, Dordrecht: Reidel (See: <http://en.wikipedia.org/wiki/Buridan> , Accessed: 18/05/2013)

² Attributed to Diogenes of Sinope, (ca. 412 – 323 BCE), (See: <http://www.egs.edu/library/diogenes-of-sinope/biography/> , [Accessed: 15/05/2013]).

³ Simon, H. A., (1952), 'Some Further Requirements of Bureaucratic Theory', in R. K. Merton, A. P. Grey, B. Hockey and H.C. Selvin (eds), "Reader in Bureaucracy", New York: Free Press, pp. 51 – 59.

Dan Gilbert's presentation about decision traps, "*Why We Make Bad Decisions*" at TED.com, http://www.ted.com/talks/dan_gilbert_researches_happiness.html , [Accessed: 08 July, 2013].

Hammond, J.S., Keeney, R.L., and Raiffa, H., (2006), Harvard Business Review (HBR), re-published in HBR "*Making Smart Decisions*", 2011, pp. 1 – 27.

Tversky, A., and Kahnemann, D., (1986), "*Rational Choice and the Framing of Decisions*", Journal of Business, 59, 4, part 2, pp. 251 -278, Chicago: Chicago University Press.