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Rasmussen's legacy and the long arm of rational choice

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ABSTRACT

Rational choice theory says that operators and others make decisions by systematically and consciously weighing all possible outcomes along all relevant criteria. This paper first traces the long historical arm of rational choice thinking in the West to Judeo-Christian thinking, Calvin and Weber. It then presents a case study that illustrates the consequences of the ethic of rational choice and individual responsibility. It subsequently examines and contextualizes Rasmussen's legacy of pushing back against the long historical arm of rational choice, showing that bad outcomes are not the result of human immoral choice, but the product of normal interactions between people and systems. If we don't understand why people did what they did, Rasmussen suggested, it is not because people behaved inexplicably, but because we took the wrong perspective.

1. Rational choice

Rational choice theory says that operators and managers and other people in organizations make decisions by systematically and consciously weighing all possible outcomes along all relevant criteria. They know that failure is always an option, but the costs and benefits of decision alternatives that make such failure more or less likely are worked out and listed. Then people make a decision based on the outcome that provides the highest utility, or the highest return on the criteria that matter most, the greatest benefit for the least cost. If decisions after the fact don't seem to be optimal, then something was wrong with how people inside organizations gathered and weighed information. They should or could have tried harder.

The rational decision maker, when she or he achieves the optimum, meets a number of criteria. The first is that the decision maker is completely informed: she or he knows all the possible alternatives and knows which courses of action will lead to which alternative. The decision maker is also capable of an objective, logical analysis of all available evidence on what would constitute the smartest alternative, and is capable of seeing the finest differences between choice alternatives. Finally, the decision maker is fully rational and able to rank the alternatives according to their utility relative to the goals the decision maker finds important. These criteria were once formalized in what was called Subjective Expected Utility Theory. SEUT was devised by economists and mathematicians to explain (and even guide) human decision making. Its four basic assumptions were that people have a clearly defined utility function that allows them to index alternatives according to their desirability, that they have an exhaustive view of decision alternatives, that they can foresee the probability of each alternative scenario and that they can choose among those to achieve the highest subjective utility. Herb Simon, in his *Reason in Human Affairs*, described it as "beautiful" but showed all across his work how inapplicable it was to real human decision making (Simon, 1983, p. 13).

Rational choice theory has a long arm reaching out from history, morally holding up the premise that people who face a decision choose among fully reasoned, exhaustively considered alternatives. It stretches far back into the West's past—through Weber, Calvin, Augustine and the story by an author simply named "J" about how two humans rationally chose between following a rule or breaking it. Let's start with that story, of Adam and Eve, as many know it from the book of Genesis in the Judeo-Christian Bible. It has had a profound effect on how the West reads the primacy of human choice and subsequent disaster. All cultures evolve allegories about their own birth, but few place as much emphasis as J's on humanity's free will. J cast the serpent (who was going to beguile Eve into making the choice to eat the fruit) in antropomorphic terms, not capable of deploying asymmetric resources like some satan, but capable of a rational conversation. The serpent, said J, was crafty. But so was Eve. "Is it true that God has forbidden you to eat from any tree in the garden?" It was not just about eating, Eve explained to the snake. The fruit of the tree was not even to be touched, never mind the eating part. If they would, they would die. Eve made up the part

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about touching. The regulation had only covered eating. This allowed J to show Eve as possessing independent wisdom and rationality, eventually moving her to indeed eat the fruit. The most influential interpretation of J's account for Western moral thinking comes from Augustine of Hippo (354-430 CE), who placed moral responsibility for bad outcomes on human choice. Writing in the early fifth century BCE, Augustine argued that:

> … when an evil choice happens in any being, then what happens is dependent on the will of that being; the failure is voluntary, not necessary, and the punishment that follows is just (Yu, 2006, p. 129).

Rationality and freedom of action, without coercion, are necessary for moral responsibility (even if they may not be sufficient). Bad outcomes, in his interpretation, are caused by bad human choices. Eve's conduct perfectly matches current definitions of recklessness—of the kind that we now charge various practitioners with (see the case study below):

> … to be reckless, the risk has to be one that would have been obvious to a reasonable person. It involves a person taking a conscious unjustified risk, knowing that there is a risk that harm would probably result from the conduct, and foreseeing the harm, he or she nevertheless took the risk … recklessness is a conscious disregard of an obvious risk (GAIN, 2004, p. 6).

Eve took the risk knowingly and consciously, even though it was unjustified (there would have been plenty of other fruit). She knew that harm would probably result. Foreseeing this harm, she took the risk, consciously disregarding it. Eve was reckless. A rational, reasoning being, she chose to err, she freely elected to violate, knowing that she was doing it, and knowing the consequences.

Calvin (1509–1564), instrumental in shaping the West's interpretation of this ethic of rational choice and individual responsibility, relied heavily on Augustinian thinking (Han, 2008). In *The Bondage and Liberation of the Will* (1543), a publication that mainly addresses the freedom of human will and human choice, Calvin includes many citations from Augustine—significantly more than from any other patristic authors (e.g. Tertullian, Pelagius), agreeing on the essential links between human choice, sin and evil. Sociologist Max Weber subsequently traced these ideas into what he called the 'Protestant ethic' in 1904. This is the view that a person achieves success through individual hard work, commitment, diligence, engagement and thrift, and that such success is a sign of salvation. The opposite is easy to imagine: failure is the result of a lack of individual hard work, application, commitment. Individual workers, in the Protestant Ethic, were responsible for the creation of their own salvation; their own choices determined their success at this; and their actions got measured by the consequences, the outcome. Such thinking "is still present and pervades contemporary organization and management … though today it is rarely referred to in religious terms, nor typically called salvation" (Dyck and Wiebe, 2012, p. 300).

Rational choice theory remains dominant in safety work, and it has led, in Rasmussen's view, to attribution errors when "highly skilled people depart from normative procedures" (Rasmussen, 1990b, p. 1192). In hindsight, we might ask how people back then and there did not see what we now know was important—what sloth, bloody-mindedness, immorality or stupidity clouded their choice to do the right thing? Accident probes and managerial reactions to failure are often founded on the premise that people's decision making was driven by rational, fully informed choices, concluding that they either must have been amoral calculators who prioritized production or personal goals over safety (Vaughan, 1999) or made shortcuts that Reason once chose to call "violations" (Reason, 1990). The long arm of rational choice can be seen in an explanation of bad outcomes in an otherwise well-designed system (such as paradise) in a sister journal not long ago:

> It is now generally acknowledged that individual human frailties … lie behind the majority of the remaining accidents. Although many of these have been anticipated in safety rules, prescriptive procedures and management treatises, people don't always do what they are supposed to do …. This undermines the system of multiple defences that an organisation constructs and maintains to guard against injury to its workers and damage to its property (Lee and Harrison, 2000, pp. 61–62)

"Unsafe acts," a term coined by Heinrich in the 1930's, remains a trope in Reason's popular accident model (1990), reifying the belief that things ultimately don't go wrong (however the odds are stacked up) until and unless a frontline worker "adds the final garnish" (p. 173).

2. Case study

A 16-year old patient died after a nurse named Julie accidentally administered a bag of epidural analgesia by the intravenous route instead of the intended antibiotic. Julie was a 15-year veteran nurse in a midwestern hospital obstetrics ward. During a busy holiday season, nurses were asked to 'please help' manage staff shortages, to pitch in. Julie did. Around that time a new barcode technology was introduced. As is common, the scanners had trouble reading barcodes off clear plastic infusion bags. That meant information about the medication had to be entered manually. The antibiotic and epidural bags were very similar: both were clear plastic with identical ports to fit the infusion pump and tubing. Also, a workaround had been put in place that got nurses to prep patients for an epidural—obtain the medications, insert and prime tubing and put medications on the infusion pump—all before the anesthesiologist arrived with the written order. Anesthesiologists' satisfaction increased.

After a busy double shift (almost 17 h), Julie had a few hours of sleep in the hospital before starting yet another shift. A young mother, about to give birth and in pain and distress, was one of her first patients. In the wake of the mother's sudden death (the baby survived), Julie collapsed, was admitted to the hospital as patient herself, then fired and criminally charged by the state attorney general. She returned to the hospital one day for pastoral care, but was barred at the entrance by one of the directors and told to leave the property (Dekker, 2010; Denham, 2007).

When I met Julie later, she described how a director dismissed her with an anxious, angry, hissing "You can't be here … !" and pointed to the end of the street—away from the hospital. Facing years in jail, a large fine, a loss of licence, a destroyed career, a lost identity as carer, she was abandoned into the "heart of darkness" that can engulf any clinician after killing or harming a patient (Christensen et al., 1992). Julie must have flirted with the place where other second victims have ended up: nowhere to turn but suicide (Ostrom, 2011).

Fortunately, some time after the incident, Julie was embraced by several patient safety leaders internationally and asked if she could help turn her story into a learning case to prevent similar harm. How could this happen to Julie, and how could it happen to any other nurse? It must have made sense for Julie to do what she did—with the similar bags and interchangeable ports, tired to the bone, with a distressed patient clamoring for pain relief now, with