Designing solutions to problems 1 – Using analogies

In chapter 11 of *Smart Thinking* we learned how to generate analogies and to identify when an analogy is likely to be unreliable. On pages 185-6 I listed four arguments and asked you to assess the analogies on which they are based by working your way through the three issues I outlined in chapter 11. You can find answers to these below, followed by more exercises that you can use to develop your skills.

Question 1:

Recently, an American politician defending nuclear power argued, ‘We don’t abandon highway systems because bridges and overpasses collapse during earthquakes.’

Answer:

The weakness in this analogy lies in the depth and breadth of harm that a malfunctioning nuclear generating plant can cause compared with the collapse of a bridge or an overpass. If a nuclear generating plant goes into meltdown or just releases nuclear radiation in whatever form, this can not only cause a large number of deaths, but result in long term illnesses, like cancer, and even genetic harm that can be passed on to future generations. In contrast, the collapse of a bridge or overpass results in fewer fatalities and casualties. You might also argue that in most cases with bridges and overpasses there is no alternative, whereas there are alternative methods of generating electricity.

Question 2:

‘Some basic facts about memory are clear. Your short-term memory is like the RAM on a computer: it records the information in front of you right now. Some of what you experience seems to evaporate – like words that go missing when you turn off your computer without hitting SAVE. But other short-term memories go through a molecular process called consolidation: they're downloaded onto the hard drive. These long-term memories, filled with past loves and losses and fears, stay dormant until you call them up.’[[1]](#endnote-1)1

Answer:

This seems to be a fairly reliable analogy. The one difference that may make it unsafe is that short-term memory works by a process of reinforcement. In the immediate period after we have learned something, the memory degrades quite rapidly from hour to hour. But if we revise it a number of times at regular intervals, we reinforce the memory and, as a result, we are able to recall it quite accurately. In contrast, with RAM, once we have switched the computer off without saving the information, we have lost it. And, by the same token, once we have saved something, it doesn’t degrade as with our short-term memory.

Question 3:

During the Watergate hearings in the 1970s, the second-in-command at the White House, John Ehrlichman, used two analogies to explain why he thought it was appropriate to burgle the offices of the psychiatrist who was treating Daniel Ellsberg, the Pentagon consultant who released the Pentagon Papers to the press. Clearly they were after something they could use to discredit, or even blackmail, him.

Ehrlichman said the situation was like the following: suppose you heard that there was in a safe deposit box in a bank vault in Washington DC a map showing the location of an atomic bomb due to go off the following day in the middle of the city. Breaking into the vault would be like breaking into the psychiatrist’s office. It was the only reasonable thing to do.

One of the senators on the investigating committee then suggested that in such circumstances it would have been more appropriate to phone the bank president, ask for the keys and explain why you needed them. In response, Ehrlichman argued that they had, in fact, attempted the equivalent: they had tried to bribe a nurse in the psychiatrist’s office to give them the file.[[2]](#endnote-2)2

Answer:

Both of these analogies are unreliable. The first, between breaking into the offices of the psychiatrist who was treating Daniel Ellsberg and breaking into a bank vault to get a map showing the location of the atomic bomb, ignores the difference in significance between the two examples. In the first case, the aim of breaking into the psychiatrist’s office was to acquire something that would discredit an opponent of the government. In the second, this would have been an attempt to save the lives of hundreds of thousands of people.

The consequence of accepting this analogy would be to endorse the view that it is right to do anything, no matter how invasive of individual rights and freedoms, to protect the political party in power, which is identified with the welfare of hundreds of thousands of people, indeed, even the nation as a whole. In effect, it would mean that it is legitimate to imprison the most vocal critics of the government on the grounds that their criticisms are causing serious damage to the welfare of the people.

As for the second analogy, between phoning the bank president to ask for the keys and bribing the nurse to give them the file, a more accurate analogy would have been to ask the nurse for the file in the same way as asking the bank president for the keys. There is a substantive difference between asking someone for something, leaving them the freedom to make up their own minds as to what would be the right thing to do, and trying to circumvent this freedom of choice by influencing their judgement with a bribe.

Question 4:

‘The only proof capable of being given that an object is visible, is that people actually see it. The only proof that a sound is audible, is that people hear it: ... In like manner, I apprehend, the sole evidence it is possible to produce that anything is desirable, is that people do actually desire it.’[[3]](#endnote-3)3

Answer:

The analogy that John Stuart Mill develops here in his essay, *Utilitarianism* (1861), was famously criticised by the English twentieth century philosopher G. E. Moore, who pointed out that ‘desirable’ does not mean ‘able to be desired’ as ‘visible’ means ‘able to be seen’. Things can be seen by virtue of our sight alone, but things are not desirable by virtue of the fact we desire them alone. The word ‘desirable’ presupposes a criterion by which we judge them, which means not everything that is desired is, in fact, desirable. I might desire to smoke a cigarette, but I can still ask if it is desirable and as long as I can do that without self-contradiction ‘desire’ and ‘desirable’ are not conceptually the same.

Question 5:

In the eighteenth century the philosopher William Paley argued that when he saw a complex object, like a watch, he immediately knew it was designed. Therefore, in the same way, when he saw a complex object, like an eye, he must likewise infer that it, too, has been designed. He argued that the natural world is as complex a mechanism, and as manifestly designed, as a watch. The rotation of the planets in the solar system, and on earth the regular procession of seasons and the complex structure and mutual adaptation of the parts of a living organism, all suggest design. Such complex and efficient mechanisms, he claims, could not have been created by chance. Insofar as we infer from a watch that there must be a watchmaker, we can likewise infer from the world that there must be God. This is the argument from design, also known as the teleological argument.

Answer:

The analogy between the world and a human artifact, such as a watch, is weak, because the universe is not particularly like a vast machine. One could just as plausibly liken it to a great inert animal, such as a crustacean, or to a vegetable. And, if this were the case, the argument would fail, for whether crustaceans or vegetables are, or are not, consciously designed, is particularly the question at issue. Only if the world is shown to be rather strikingly analogous to a human artifact is there any proper basis to infer an intelligent designer.

Question 6:

 Just as a sword is the weapon of a warrior, a pen is the weapon of a writer.

Answer:

This analogy is more reliable. However, it depends on how it is used. It would certainly be difficult to argue convincingly that, like a warrior, a writer uses his pen to kill his enemies. But in more general terms we can say that some writers use their pens, like a warrior uses his weapon, to win conflicts and differences of opinion.

Question 7:

A doctor diagnoses diseases like a detective investigates crimes.

Answer:

This, too, is a reliable analogy as long as it is not taken too far. A doctor, like a detective, will ask questions and gather evidence before she comes to her diagnosis, in the same way that a detective will ask questions and gather evidence from witnesses before he develops a theory as to who might have committed the crime.

Question 8:

'Freedom of speech is obviously vital in a civilized community. But when a community is at war, and the basis of its civilization threatened, then freedom of speech has to be curtailed. We are a nation at war, and the war is the more insidious for being fought with words rather than bombs. Our most cherished institutions, church, family, and private property are under attack.'

Answer:

During the Cold War this analogy was pressed into service to justify restricting freedom of speech and information generally. But the main reason it is unreliable is that during an actual war operational intelligence as to what the military plans to do can have a significant impact on the success of its operations. Consequently, it is important to restrict access to this sort of information. In the Second World War this included all sorts of information that ordinary people might convey in personal correspondence and everyday conversation. But during the Cold War there were no similar operations that would involve actual armed conflict. Therefore, the only information that needed to be restricted was that involving the latest research into defence technology, to which only a few scientists and civil servants had access.

Question 9:

'Democracy must include not just the freedom to determine by one man one vote in elections every few years who governs the country, but also the freedom to determine how the resources of the country are distributed by how people vote to spend their money every day in the market place.’

Answer:

This analogy is unsafe for a number of reasons. As the quotation makes clear, democracy, or at least liberal democracy, involves the equal distribution of political influence, ensured by one person having a single vote periodically every few years. But the influence people wield in the market place as they purchase goods and services is not distributed equally. Those who have more wealth exert more influence on how the resources of a country are distributed, because they have more money to spend.

Question 10:

‘There were people who objected to trains. There were people who objected to aeroplanes. Every invention beneficial to mankind has had its critics. No doubt somebody objected to the wheel. So those who object to GM food should think again.’

Answer:

This is similar to our first analogy involving nuclear power. It is unsafe for the same reasons. Comparing trains, aeroplanes and the wheel with GM food underestimates the scale of the risk that GM food might present to health, farmers and to the environment. Some health groups point to unanswered questions regarding the potential long-term impact on human health. In addition, unlike these other inventions, GM food has the tendency to concentrate power and influence into the hands of a few large companies that have patented grains.

Question 11:

In support of his opposition to the parliamentary system of government by representation Thomas Carlyle argued that a ship could never be taken round Cape Horn if the crew were consulted every time the captain proposed to alter the course.

Answer:

This analogy ignores the distinction between day to day operational matters involved in captaining a ship and running a government department on the one hand, and influencing policy and holding people accountable for their decisions on the other. Like the captain of a ship, ministers are responsible for the operational matters involved in running a department; they don’t have to consult parliament every time they make a decision. So, Carlyle’s analogy fails because it implies that government ministers would have to consult parliament every time they wanted to make decisions, whereas in fact the influence parliament exerts is to make them ultimately accountable for the effectiveness of their policies.

Question 12:

If you introduce a policy designed to reduce the numbers of obese people on the grounds that over-eating is a dangerous thing to do, you might as well also try to reduce the numbers involved in watching football, in studying science, and in buying cars and electric can-openers.

Answer:

Like analogies 1 and 10 this is unreliable because it oversimplifies the comparison it is making. Consequently, it underestimates the impact of obesity on people’s health. It can lead to cardiovascular disease (heart disease and strokes), type 2 diabetes, musculoskeletal disorders, like osteoarthritis, and different forms of cancer. In contrast, the dangers involved in watching football, studying science, and in buying cars and electric can-openers, are much less significant. The one exception to this might be buying cars. However, although buying a car can lead to injuries and even fatalities as a result of careless driving, these are far from being probable consequences as many careful drivers can testify. In contrast, the likelihood of developing serious health conditions as a result of being obese is much higher.

Question 13:

Trying to interfere with the course of Nature is like putting your finger among the cogs of a huge machine. The machine will continue to function unaffected, but you will lose a finger. Leave Nature well alone.

Answer:

The main reason this analogy fails is that nature does not function like a machine. Unlike the description of a machine causing injury if you interfere with it, we can and do routinely interfere with nature to our own advantage. The achievements in medical science over the last three hundred years in finding cures and developing techniques to improve health care have amounted to man’s most successful attempt to frustrate nature, to extend life and to evade death. Rather than posing the danger described in this analogy, it demonstrates that it is possible to interfere with nature for the benefit of mankind.

Question 14:

We maintain the health of our bodies through exercise. The same applies to the ‘body politic’: for any state a just and honourable war is the essential exercise it needs from time to time in order to maintain its health.

Answer:

Advocates of this analogy seem to be arguing that in the same way that physical exercise places demands on our bodies and gets us to use them in ways we don’t usually, sending young people off to fight in a war detaches us from our habitual concerns and gets people thinking patriotically about the sacrifices they need to make for the state. Rather than thinking about themselves, they begin to think beyond self-interest about the needs of the nation and society as a whole; about the importance of defending tradition and national values.

The analogy seems to work to a degree, but, as we discovered in chapter 11 of *Smart Thinking*, all analogies tend to break down at some point. This one rests heavily on the concept of the state as one coherent, organic being, which, like an individual, needs exercise to maintain its health. But it is here that the analogy breaks down. In liberal democracies, societies are conceived as just collections of individuals, all of whom have rights, freedoms and interests invested in them as individuals. The state is merely the means of protecting and promoting these: it has no claim to being pre-eminent over the individual. Quite the contrary, the individual, and his or her interests, comes first. The state is merely the means of serving these interests.

Bernard Fleming – Bribery problem

In chapter 3 we unravelled the implications of this problem so that we could decide what sort of questions we would need to answer to solve it.

In 1989 Bernard Fleming, a UK teacher, moved to a Southern European country and set up a training college in a large town. The college was running courses that were designed to train the employees of local businesses and anyone who wanted to retrain or gain promotion by getting better qualifications. Six months after the college had opened it was struggling to survive with very low student enrolments. Then Bernard had a visit from the local mayor, who explained that for a ‘consideration’ he would tell his employees that they must come and enrol on courses. Then he would tell other employers to follow his lead and send their employees to be trained. Each year, for a similar ‘consideration’, he would make sure that the enrolments kept growing.

Bernard knew that if the college were to survive he needed to get more students enrolled. He had tried everything. The mayor’s offer now explained why all his efforts had come to nothing. Indeed local businessmen told him that nothing happens there without the mayor’s approval. He could even close the college down if Bernard refused to go along with his plan.

Now see if you can find from your own experience a safe analogy that might help you solve the problem.

Possible answers:

1. Can we resolve Bernard Fleming’s problem by treating the mayor’s proposition as if it were like buying a licence to operate a business or like having to pay for a work permit in a foreign country?

2. Can we view it as nothing more than an insurance policy that we pay in order to protect our property from fire or theft?

3. Or perhaps the mayor’s proposition could be viewed as something like the membership fee of a loose confederation of businesses? There must be many businesses in the town that have to make the same type of payment and, perhaps, by doing so they join this confederation which assures them of the support and protection of the mayor – a guarantee of their success.

These are merely suggestions. You might have a more inventive answer.

1. 1 ‘To Pluck a Rooted Sorrow’, *Newsweek*, April 27, 2009. [↑](#endnote-ref-1)
2. 2 Michael Scriven, *Reasoning* (New York: McGraw-Hill, 1976), p. 213. [↑](#endnote-ref-2)
3. 3 J.S. Mill, *Utilitarianism*, 1861 (London: Fontana, 1970), p. 288. [↑](#endnote-ref-3)