

Analogies

Whenever we set ourselves the task of explaining something we assemble as much evidence as we can and then search for a pattern in the evidence.

Usually what we have are disconnected facts and assumptions. To create an explanation from this we must search for connections between them. Facts are inert: they don't just offer up a pattern of interconnections that suggest a possible explanation. We have to create it. And we do this by imagining possible connections based on our experience of similar situations elsewhere.

But where do we find these patterns of ideas to create connections between our ideas? In many, if not most, cases these are analogies: patterns of explanation that have worked in other situations that we suspect might work in this. They give us a sufficiently stable pattern that we have used before in different circumstances, which are reliable enough for us to conclude that given one event the other will follow with high probability. We might conclude from the fact that A, B and C all have characteristics x and y, and A and B in addition have characteristic z, that C too will probably have characteristic z.

They may have nothing to do with the problem you are trying to explain. Indeed the most effective usually haven't. We learn from an early age the power of simple parables to explain the most complex ethical problems. And much of the scientific progress over the last three hundred years has developed out of the use of simple analogies. They have provided models and pictures, like waves and billiard balls in the theory of light, out of which to construct scientific theories that have fuelled research and extended our understanding of the world.

Examples

Darwin and variety in species

Early in his work Darwin assumed that stability in species was the norm and variety the exception. But this seemed to be at odds with the immense bewildering variety of species that he saw all around him. If stability were the norm, why was it that species appeared to go on generating even more variety? The competition for survival should restrict this: the more competitive an environment the more likely it was that a few successful species would dominate. But, now, how was he to explain this?

He found the answer in the analogy of industrial progress that he had seen developing in nineteenth century Britain. It was clear that fierce competition in overcrowded markets favoured those who could use and adapt their skills to fill niches. The individuals who thrived in these circumstances were those that seized new opportunities and filled niches as they opened. When he looked at crowded markets he saw they were full of all manner of people with different skills, each working next to each other, but not in direct competition.

Nature, he realised, was no different. The same pressure of competition forced species to adapt to fill unoccupied niches. And the greater the functional diversity of species the more an area could support. Indeed, nature was even more efficient at this than industry. Natural selection increased the 'division of labour' among animals who were caught in competitive situations, resulting in the immense variation in species.¹

¹ For more on this look at Adrian Desmond and James Moore. *Darwin* (London: Michael Joseph, 1991), p. 420.

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Unreliable analogies

However, not all analogies can be relied upon to organise our ideas into a pattern from which we can draw relevant and reliable inferences that will help us explain a problem. Many are used because they offer a powerful and persuasive explanation, when there are in fact no relevant and reliable connections to be made. Vague associations are often the source of error and oversimplification. Politicians are always eager to exploit our gullibility by using a graphic analogy on which to hang their argument, even though with a little probing it is not difficult to see that it will bear very little weight.

And most analogies just break down at a certain point, so we must be alert as to when this is likely to occur.

Newton's theory of Light

Newton used the analogy of billiard balls to explain the behaviour of light as molecules or particles. Although useful, it reached a point when it became clear that light behaves in ways the analogy could not help us explain. Along with other electromagnetic radiation, it behaves like a wave motion when being propagated and like particles when interacting with matter. So, a conflicting theory appeared, modelled on a different analogy of light as waves travelling through an elastic medium.

Exercises

Using the three points listed on page 125 of *How to Write Better Essays*, critically evaluate the following analogies.

1. The connection between the analogy and the inference

Business management and Darwinian theory

Some business people use the analogy between competitive markets and Darwin's theory of the competitive struggle for survival in nature to justify their methods of doing business. Cut-throat economic competition, they argue, is the natural state of affairs and the rise to the top of the strongest is an inevitable law of nature. They describe their working lives as a jungle in which they are continually engaged in a struggle with others for survival. Everything, they argue, is justified as long as it promotes survival.

What differences between this description of business management and Darwinian theory make this analogy unsafe?

Answer

Darwin's theory of natural evolution is driven by blind forces that select from random mutations those characteristics that improve the chances of survival. Business, on the other hand, is driven by conscious intentions and nothing guarantees that this will result in the best run businesses surviving, while the worst lose out: it is just as likely that bad management will drive out good.

2. The numbers involved

Up to a point the number of samples we can find between which the analogy is thought to hold the more confidence we are likely to have in it. The same is true of the number and variety of characteristics shared by the analogy and the actual situation. But problems arise when we ignore differences and push similarities beyond what is reasonable – the ‘fallacy of false analogy’.

The economy

In the 1980s, in an effort to persuade us that cuts in government expenditure were unavoidable, some governments seized upon what seemed like a useful analogy telling us that ‘The economy is like a household budget’ and we were simply spending beyond our means and getting into debt.

What differences are there between a household budget and an economy that make this analogy unsafe?

Answer

What you spend in a household budget doesn’t usually generate more income and jobs in the household, whereas in the national economy such investment not only can improve productivity, but can have significant multiplier effects, lifting economic activity, increasing revenue from direct and indirect taxes and reducing welfare costs by taking more people into jobs.

3. The relation between the analogy and the inference drawn from it

Lastly, we have to be sure that the inference drawn from the analogy is of the right strength and takes into account all the significant similarities and differences between the analogy and the situation it helps to explain.

Life on other planets

You might argue that there must be life on other planets in our solar system, after all, they are similar to Earth in so many ways.

How many similarities and dissimilarities can you list? Once you've done this decide whether on balance the analogy is safe.

Answer

Similarities:

1. They revolve around the sun.
2. The sun is their sole source of light.
3. All are subject to gravitation.
4. Some revolve around their axis, giving them day and night like the Earth.
5. Some have moons.

Dissimilarities:

But these similarities are not the most relevant conditions we would look for in a planet that could sustain life.

1. Breathable atmosphere.
2. Plentiful supply of water.
3. For this we need the so-called 'Goldilocks zone': an orbit that is not too far from the sun, where water freezes, and not too close, where it boils, but just right.

Exercises

Using these three points critically evaluate the following arguments, explaining why you think the analogy is unsafe.

1. An advertising copywriter justifies his work on a campaign promoting the smoking of cigarettes.

'Writing cigarette copy doesn't worry me at all. Why should it? Should a copywriter of car commercials worry about writing copy for cars just because thousands of people die in car accidents every year? Is it wrong to write alcohol advertisements just because there are alcoholics?'²

2. 'There's no more reason for a country to have two political parties than there is for a man to have two heads.'

3. Read the following two arguments made during the Cold War in the 1950s and 60s. What are the analogies on which they're based and why are they unreliable?

3.1 '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

² This example was adapted from one in Richard D. Altick's book, *Preface to Critical Reading* (New York: Holt, Rinehart and Winston, 1969), p. 333.

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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.'

3.2 '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.'

4. What are the dissimilarities that make the following analogies unsafe?

4.1 In the 1980s, in an effort to persuade us that cuts in government expenditure were unavoidable, some governments seized upon what seemed like a useful analogy telling us that 'The economy is like a household budget' and we were simply spending beyond our means and getting into debt.

4.2. This is from a *Guardian* report on the effects of the Japanese earthquake and the nuclear crisis that developed around the Fukushima nuclear power plant. It assesses the chances of a revival of the American nuclear industry struggling to emerge from the shadow of its own disaster at Three Mile Island in 1979.

'In the US, proponents of nuclear power remained steadfast. Lamar Alexander, a Tennessee Republican who has called for building 100 reactors in the next 20 years, called on America to cling fast to the nuclear dream. 'We don't abandon highway systems because bridges and overpasses collapse during earthquakes', he said in a speech to the Senate.'³

5. Once you've read the following argument, critically evaluate it by checking the relation between the analogy and the conclusion drawn from it. Pay particular attention to the two points explained on page 125 of *How to Write*

³ *Guardian Weekly*, 25th March 2011

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Better Essays under the subheading 'The relation between the analogy and the inference drawn from it.'

The Watergate hearings

During the Watergate hearings in the 1970s, the second-in-command at the White House, John Ehrlichman, used an analogy 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.⁴

⁴ Michael Scriven, *Reasoning* (New York: McGraw-Hill, 1976), p. 213.

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