

INTRODUCTION

Here's an illuminating analogy from the late Douglas Adams (of *The Hitchhiker's Guide to The Galaxy* fame):

...imagine a puddle waking up one morning and thinking, 'This is an interesting world I find myself in – an interesting hole I find myself in – fits me rather neatly, doesn't it? In fact it fits me staggeringly well, must have been made to have me in it!' This is such a powerful idea that as the sun rises in the sky and the air heats up and as, gradually, the puddle gets smaller and smaller, frantically hanging on to the notion that everything's going to be alright, because this world was meant to have him in it, was built to have him in it; so the moment he disappears catches him rather by surprise. I think this may be something we need to be on the watch out for.

This is an example of Adams being funny and thought provoking at the same time. What's Adams getting at here? Well, one of his targets is of course the sort of creationist who says: 'Why, look at how this planet fits us so perfectly: just the right amount of oxygen in the air; just the right sort of foodstuffs for us to eat, just the right amount of water. Clearly the way planet Earth "fits" us so perfectly is no mere *coincidence* – it was *meant* to have us in it!'

This creationist spots the remarkable *fit* between us and our environment: planet Earth. That fit really is, in many respects, astonishingly good. But of course our creationist then gets the direction of fit the wrong way round. They suppose our environment must, then, have been made to fit us, whereas in fact we were made – by a long process of evolution by natural selection, etc. – to fit it. The same

backwards approach to explaining fit is adopted Adams's puddle. Every last contour of the puddle is indeed mirrored by the hole. 'Remarkable!' thinks the puddle. 'That's no mere *coincidence!*' And of course the fit really is no coincidence. But it's not explained by the hole's being created to fit the puddle. Rather the puddle was formed by gravity pulling it into the hole.

In both these examples we get the direction of explanation the wrong way round. We ask: What made the planet fit us? The answer, of course, is: Nothing did. The right question to ask is: What made us fit the planet? And now the theory of evolution provides an answer.

Here's another example of how we can be overly impressed by fit without paying enough attention to how that fit is achieved. As reasonable people, we want our beliefs to fit the evidence. Many suppose that if our beliefs do achieve fit with the evidence, then they are *confirmed* by that evidence – as well confirmed as any other theory. But not every way of achieving fit with the evidence is equally good.

Here's an illustration of the wrong way to achieve fit with the evidence. Dave believes dogs are super-intelligent spies from the planet Venus. Dave's friends think he has a screw loose, and attempt to convince him of his error like so:

DAVE: It's only a matter of weeks now! The spacecraft will arrive and then you'll wish you had listened to me. We must act immediately – let the government know!

MARY: Look Dave, dogs are pretty obviously not space invaders. They're dumb pets. They can't even speak, for goodness sake, let alone communicate with Venus!

DAVE: They can speak – they just choose to hide their linguistic ability from us. They wait till we leave the room.

PETE: But Venus is a dead planet Dave. It's horrifically hot and swathed in clouds of acid. Nothing could live their, certainly not a dog!

DAVE: They don't live on the surface of Venus, they live below, in deep underground bunkers. Why do you think they want to come here?!

MARY: But then how do Earth dogs communicate with their allies on Venus? I've never found any mysterious alien gizmos hidden in my dog's basket.

DAVE: They don't use technology we can observe. Their transmitters are hidden inside their brains!

MARY: But Pete is a vet, and he's X-rayed several dog's heads, and never found anything in there!

PETE: I even chopped one up once – nothing!

DAVE: You are assuming their transmitters would be recognizable as such. They are actually made of organic material indistinguishable from brain stuff. That's why they don't show up on X-Rays. This is advanced alien technology remember – of course we cannot detect it!

MARY: But we don't detect any weird signals being directed at Venus from the Earth.

DAVE: Of course you don't – remember this is advanced alien technology beyond our understanding!

PETE: How do dogs fly spaceships? They don't even have hands. So they can't hold things like steering wheels and joysticks.

DAVE: You are assuming that their spacecraft will be designed to be operated by human hands. Obviously they won't. They'll be designed to be manoeuvred by a dog's limbs, mouth, tongue and so on.

You can see how this conversation might continue forever. Mary and Pete keep coming up with evidence against Dave's belief that dogs are spies from Venus. But, being smart and ingenious, Dave keeps coming up with moves to salvage his theory. Dave continues to make his theory *fit* – be *consistent* with – the evidence. No matter how much evidence his friends come up with against his bizarre belief

system, that evidence can always be dealt with. So Dave can always achieve fit. But does that mean his theory is confirmed? Of course it's not confirmed. It's borderline insane.

Here's the young earth creationist Ken Ham making just this mistake of assuming that getting your theory to *fit* – be *consistent with* – the evidence means it's *confirmed* by that evidence, as well confirmed as any other theory:

Increasing numbers of scientists are realizing that when you take the Bible as your basis and build your models of science and history upon it, all the evidence from the living animals and plants, the fossils, and the cultures **fits**. This **confirms** that the Bible really is the Word of God and can be trusted totally.

Actually, Ham really can get his theory – that the Earth was created just as described in Genesis less than 10,000 years ago – to *fit* the evidence, given enough patience and ingenuity. He and his colleagues can endlessly concoct convoluted explanations involving the Biblical Flood, etc. to account for the fossil record, for example. Just like Dave, Ham can in principle account for every last evidential anomaly. By such means, he can make his theory *consistent with* the evidence. (Check out Ham's AnswersinGenesis.org for many more examples of this sort of Dave-style lunacy). But mere consistency or fit is not enough for *confirmation*.

The moral is: there are different ways of achieving fit with the evidence, and not all are good!

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