

Particles, People and Purpose

Introduction

What is real? You have probably asked the question at some point.

I want to attempt a practical and pragmatic approach to this question. If we want to live well, what do we need to take sufficient care about? What, in the end, matters? What do we need to regard as real – or maybe *recognise* as being real?

This question may appear to be purely academic, something not worth wasting your time on, but sometimes we can find ourselves with a lifestyle or set of beliefs which don't work as well as we thought they should, and then we start to wonder about some of the unexamined assumptions which have brought us to this point.

I don't want to try an abstract or academic approach – the subject is far too deep and complex. Philosophers have been arguing about this for centuries (they call it 'Ontology'), and in recent decades Physicists have frequently joined the debate as they try to make sense of Quantum Mechanics. Much of the discussion has very little – if any – relevance to ordinary life ... much of it, but not all.

So perhaps the Philosophers did have a point: perhaps we should aim to consider the question, 'What is real?' before committing to living out one specific answer.

I'm not suggesting that what follows is the last word on the subject, but I hope it is at least a helpful contribution, something that can stimulate useful thought and discussion without getting bogged down in obscure detail.

Three Areas

I would like to suggest that there are three distinct areas where we need to consider the question, 'What is real?' These areas are distinct, but related, and the principles which apply to each area are also distinct but related.

You may notice some similarity to Abraham Maslow's famous 'hierarchy of needs' but they are not being presented as a hierarchy here: they are each just different aspects of reality, each one important, which manifest themselves in different ways.

The three areas are described here as *particles*, *people* and *purpose*: these are just useful labels – examples, not definitions – and refer respectively to objective reality, to subjective actual reality and to subjective potential reality.

Particles

The obvious starting point is the material world, objective physical reality. If you can kick it, it's clearly real. Of course, the material world is not only made up of things you can touch and kick: we know that light beams, gravity and magnetic fields are also objectively real – they can be measured. This is the stuff that science deals with.

Progress in science requires hard work, and modern science arose because a few people were prepared to put in that hard work as part of their religious duty. Belief in the Christian creator God who makes laws and desires to be known created a framework in which the desire and obligation to understand God better could be worked out through exploring the material world and the laws it follows. They wanted to improve their understanding of the Creator through studying his creation.

Of course, religious faith was not the only motivation. The necessary investment of resources can always be justified to the people who control them with the argument that ‘knowledge is power’. And the key individuals involved were probably also driven by an insatiable curiosity. But power and curiosity are human universals, while science as a discipline only arose within a very specific social and religious context.

Over the centuries, science has built up an impressive track record, enabling us to manipulate the physical world in ways which our ancestors could not have dreamed. It has achieved this by observing the physical world and asking two inter-related questions.

- What is the story? (We often call this a ‘theory’ or ‘hypothesis’.)
- What is the evidence for this story? (An experiment is a way to look for it.)

Humans are story-telling creatures: every culture around the world has its stories, some of which serve as an explanation of the world around them. Science combines our need to tell stories with our natural curiosity, and asks the story teller two basic questions: “Is this true?” and, “How can I be sure?”

Our curiosity, when it can be pursued, leads to greater understanding, which leads to improved ability to manipulate the world to suit us. Importantly, the understanding – the story we tell about what is happening – doesn’t need to be right, as long as it is *right enough* to produce an improved ability to manipulate the world. And this improved ability then enables us to ask new questions and devise new tests, which sometimes lead to new stories.

People who do not understand science often imagine that it deals with *facts* and *proof*: these are the things that headline writers tell us about. The scientists themselves talk about *theories* and *evidence*. Theories are just stories we tell, couched in scientific language; the evidence is gathered through observation and experimentation. And, as Karl Popper pointed out, all the evidence in the world cannot prove that a theory is right: it can only prove that the theory is wrong, or confirm that the theory has not been disproved yet.

Science sometimes progresses by demonstrating that a previous theory was wrong (blood does not flow through the body like the tide going in and out) and sometimes progresses by finding a new theory which offers both the key results of the old theory and some new results (Einstein’s equations provide surprising new predictions, while confirming Newton’s laws as very close approximations in familiar conditions).

Headline writers do not always distinguish between the theories we are confident about, even if we don’t fully understand what is happening, and the theories which seem likely because we have not been able to think up a better story yet. Scientists know the difference, but it is not always communicated very well to the rest of us.

For example, scientists talk about both electricity and dark matter. They are both respectable, mainstream science, but the confidence we should have in the truth of these two stories varies a great deal.

On the one hand, we are confident that electricity consists of electrons moving, even though we don't really understand what an electron is or how it moves: the experimental evidence for this is overwhelming, so any new theory about electrons has to explain what we already know.

On the other hand, dark matter is (at the time of writing!) a theory which was produced in order to explain some astronomical observations we don't understand: it may exist, or those observations might be explained by modifying our understanding of gravity – or in some other way.

Even a casual reading of the history of science should make it clear that science is an activity undertaken by fallible humans, with petty rivalries, greed, pride and jealousy shaping its activities just as much as experimental research and peer review.

Here are three very quick recent examples. In 2009, Daniele Fanelli (in '*How many scientists fabricate and falsify research?*') found that 2% of scientists admitted to submitting false data, and 14% knew a scientist who had done so.

In 2014, the BMJ published an essay ('*Evidence based medicine: a movement in crisis?*') by Professor Greenhalgh and others, which identified numerous areas where good scientific practices turned out to be distorted by groups with a vested interest, or simply do not work when faced with the complexities of the real world.

And in 2016, *Scientific American* published a poll of 1500 scientists which found that 70% of them had failed to reproduce the results of a published experiment – not all of these will result in the original experiment being proved wrong, but it does mean that peer-reviewed research does not mean what most people thought, and it significantly undermines the idea of scientific certainty.

In principle, and very often in practice, science gives us a way to gain a reliable understanding of the world and the power to manipulate it in predictable ways – but the people who blithely contrast the 'certainty' of scientific results with the 'wishful thinking' of religious results simply demonstrate their own lack of understanding of actual scientific practice. It is always tempting to contrast the purity of our own principles against the messy reality of the other group's practice.

The most effective way we have found to deal with objective present reality – particles, and the forces which act on particles – is through the use of science, technology, engineering and mathematics (the 'STEM' subjects). But, on their own, they are not enough: they give us tools to understand and manipulate the physical world, but a great deal of human activity cannot be understood within this framework.

People

It is a trivial observation that the way we do science is not determined by science – it is determined by people with their own motives and agendas. Science gives you theories to reliably predict what will happen, and you can't do that with people.

While we live in a material world we can explore through science, very little of our time and attention is taken up with the material aspects of the world: most of our life, and almost all the important parts of it, are taken up with other people. Our lives are shaped by our family and friends, by our colleagues and rivals. Your life was probably not changed by learning about the theory of gravity, but it may have been changed by the teacher who taught you about it.

This point seems obvious to many people, but not to everyone: people are more than just particles. Or, to quote the title of a book: ‘People Matter More Than Things’. People *are* things, of course, our bodies are made of atoms and molecules just like everything else, but we are more than just a collection of chemicals.

This second area is about the subjective reality we live in. While we do live in the objective material world, most of our time and energy is taken up with people and relationships. We navigate the physical world fairly easily: the ball we drop falls to the ground, the path we walked along last week is still there today. It all works as expected most of the time.

But people are another matter. The antagonistic colleague at work is suddenly very helpful, and we want to know why? An old friend seems a bit distant, and we worry we said something wrong. We *need* to understand why the people around us behave the way they do, and we can’t answer this question by talking about atoms and molecules.

Our understanding of people – both people in general and the individuals who matter to us – is mainly expressed in stories: narrative which tell us the way the world is. “Foreigners want to destroy our way of life.” “You can’t rely on anyone but family.” “All children deserve a decent education.” The stories we believe shape our lives, so we need to distinguish between the stories we should accept and the stories we should reject: we have to ask the vital question – what is the evidence for this story? We can look for evidence even if there is no absolute proof.

What we need, when we are engaged with social reality – with people rather than particles – is not science, but it is not entirely different from science either. It requires honesty and clear thinking, a willingness to face the evidence whether or not it points in a direction we like. We call the disciplines which do this, ‘the humanities’.

Science might be able to tell us what is happening at the physical level, but most of the time we don’t worry about *what* is happening: we worry about *why* it is happening. In the humanities, the stories we need to tell are not about objects moving when a certain force is applied, or about chemicals reacting at a certain temperature. Instead, they are about the things which matter to us – about friends and enemies, about alliances and rivalries, about love and hate, about loyalty and betrayal.

It is important to note that none of the things which really matter to us can be measured. Money probably comes the closest, but money is irrelevant unless you have another person willing to do something or exchange something for it – coins exist as material objects, but money only exists within a human society, within a set of relationships which give it human value. Money can be measured, but in the end it only matters because it gives us access (or, at least, *we believe* it gives us access) to the things which really matter to us.

And because you can't measure anything which really matters, science is unable to tell us about the things which are most important to us. Some people dislike this being pointed out, but most scientists are very comfortable with it: they know the limitations of their work.

A few people claim that science is the only way to certain knowledge of the most important questions we face, but this is an odd claim – especially for anyone speaking as a scientist: we can't even define the important things in scientific terms, we can't predict which relationships will 'click', we don't understand why we do the things we do, let alone why anybody else gets up to the things they do.

Those who claim that science explains everything can't say exactly what it explains, or offer any evidence to support the truth of their claim. It is a popular re-working of a philosophical movement (sometimes called 'Logical Positivism', 'Logical Empiricism' or 'The Viennese School of Philosophy') which flourished briefly until people realised that its methodology led to the conclusion that its own claims were meaningless, and then Gödel and Tarski came along and proved that its aims were unachievable.

Sometimes in a conversation, someone tells me they are a materialist, someone who believes that only material objects exist, but after further discussion they never claim to live that way. You may believe intellectually that love is just a collection of chemicals swilling round your brain, but if you have ever asked, "Do you love me?" you were not asking about the presence of chemicals.

If you care about love or truth or beauty, if freedom or morality or justice matter to you, then you are not a materialist. If you object when somebody steals your car, you must believe that ownership is real. If you desire freedom, you must believe that freedom is real – it may not be a material object, but that does not stop it being deeply important to you. Many people are willing to fight for freedom, and to die for it.

Moreover, to be consistent, a materialist must admit that they don't exist: science says that a belief in your own identity is an illusion. You are just a label, a word used to identify a collection of chemicals, which is constantly changing. Your body is real, but it is not the same body that existed yesterday, and after maybe seven years almost all the atoms which made up your body are somewhere else, making other things. If you believe that there really is a 'you' which exists, you are not a materialist.

It is sometimes suggested that it is valid to talk as a materialist about a person or a family, or about love and truth: these words don't refer to material objects as such, but they refer to relationships between material objects – the objects are real, and it is valid for us to seek to understand the nature of the relationships between them. But this suggestion rather misses the point: the question is not whether it is possible to understand these words in terms of relationships between material objects, but whether this relationship has any reality.

There is nothing wrong with defining something and then talking about it, purely as a linguistic convenience, but you can't define something into existence. People marry for love and they sometimes die for love; love causes people to do many different things, so it has a massive impact on the 'real' physical world. It is hard to maintain that something which doesn't actually exist is changing the world.

To take another obvious example: when we buy things, the transaction can be described in material terms. But the transfer of ownership from one person to another is not a material change, and the reason why we buy one thing rather than another usually has very little to do with material considerations.

It is not only our purchasing choices: much of our behaviour is shaped by our values, by the way we consider one thing (such as quality, price, the approval of other people, ...) to be more important than another. And our values, while they constantly enable us to place one consideration above another, cannot be measured or turned into numbers.

Whatever people claim, we can only live successfully when we recognise that we live not only in a physical world but also in a human world, working on the basis that both human beings and human values are real and important. This is necessary, but not sufficient, for a full and fulfilled life.

Purpose

When we talk about people, values, truth and love, we are discussing things which shape our lives. They may be subjective, intangible and unmeasurable, but we can still investigate them. The question, “Do you love me” is meaningful and important, even if it is not easy to test the truthfulness of the response. But our lives are also shaped by questions of purpose, which is different again.

At its outset, science was largely concerned with understanding the connection between the form of things and their purpose: it seemed evident that all things had a purpose, and we could understand what that purpose is through careful observation and thought. Slowly, as science retreated from the study of all things to the study of physical reality, considerations of purpose faded away and eventually disappeared.

That is, questions about purpose disappeared from science in principle – in practice, scientists still regularly make reference to the purpose of things, especially when they operate within the biological sciences. They sometimes point out that the word ‘purpose’ is used as a shorthand for something else, but the truth is that we find it hard to understand the world without including the notion of purpose somewhere.

It is widely recognised that people cannot live without purpose. Religious people incorporate this within their worldview without difficulty; materialists explain that we have to ‘discover’, ‘create’ or ‘invent’ our own purpose – which, when you think about it, is a really hard thing to do.

It is not hard to see the purpose for many of the things we do: we eat because we are hungry and sleep because we are tired, we practice our scales because we want to improve our playing, we get married because we love someone and want to be with them. All the time we connect the things we do with the reason we have for doing them.

And when we can’t see a valid purpose for the things we do, we may try psychotherapy to help us understand the reason for our actions, and perhaps change what we do as a result. We want to know why we behave the way we do, but all too often the answer we are given fails to satisfy because it comes at the wrong level.

We want to know ‘why’ but we are often given a reason, not a purpose. “Why do I push people away?” “It is a defense mechanism, to avoid the pain of rejection.” This may be true, and it may be helpful to understand better what is happening, but it is not enough. Reasons are important, but they don’t satisfy.

When I ask, “Why is the kettle boiling?” I usually don’t want to be told the reason: “Because electricity is heating the element.” I want to be told the purpose: “Because I want to make a cup of tea.”

The point is that we know there is a reason, even when we can’t see it. We need to understand what is happening: why am I using a defense mechanism? And we need to discover the purpose, not invent one. We have this desire because most of us believe there really is a purpose to discover. You can only invent a purpose if you think a made-up purpose will satisfy your need, and few people do.

We need to understand the reason for the things we do, but we also need to understand the reason why we do anything at all. We have all asked the classic question, “Why am I here?” Once you have asked the question, it never goes away.

Inventing a purpose for your life is essentially what Sartre (along with the other Existentialists) was telling us to do. According to him, you have to give meaning to your life through the choices you make; or, to put it another way, life is meaningless, but you have to act as though it has meaning. Either way, it is an attempt to explain the presence of purpose in a life which – as, in their view, we are *only* material objects – can have no possible purpose. A stone has no purpose: it just is.

Just as we can’t live without believing that our life has some value, we can’t live without believing it has some purpose – even if we aren’t quite sure, right now, what that purpose might be.

A challenging question to ask someone is: what is the purpose of your life? What are you living for? If you are feeling particularly cruel, you might go on to explore with them what they mean by their answer.

Hardly anybody will say that their life has no purpose – and, when they do, it is usually just a mind-game they are playing, to see if anyone has the confidence or the courage to call their bluff and challenge the claim. The one exception to this rule is when someone says their life has no purpose in order to explain why they are about to commit suicide: at this point, they probably mean it – and we treat this belief as evidence of mental illness. You cannot be mentally healthy if you believe your life has no purpose.

Of course, many people can’t say clearly what their purpose for living is, but we tend to follow the crowd and assume that the purposes identified by the people around us actually work. Our aim may be to get rich, or to look after our family, or to work for the good of our village, our nation or the human race. We assume that this is a good enough reason, and don’t examine it too closely so that we won’t discover that it doesn’t work for us. If we are only chemicals, life itself is not important.

Once people start to consider their purpose for living, it is hard to avoid finding the answer in some form of religion: it is the only place to discover a purpose in life, if you don’t invent your own, as science can’t provide one.

‘Religion’ here refers to a system of beliefs and practices which relate to understanding people and purpose, just as ‘the humanities’ are a system of beliefs and practices which relate to understanding people and human activity and ‘science’ is a system of beliefs and practices which relate to understanding particles.

We also need to consider the question of morality. In the same way that few people can live without purpose, few people can live without morality – and those who do, we consider to be mentally ill.

Like purpose, morality operates in the realm of religion. Science can tell us what happens, but it cannot tell us what should happen: in the classic phrase, you cannot derive an ‘ought’ from an ‘is’. Science can tell us what is, but it cannot tell us what should be. And neither can the humanities give us a morality: they can tell us that all human societies have moral rules and principles, and that they are (at root) remarkably similar – but they cannot tell whether right and wrong are real, or just social conventions.

Different religions tell us different stories about morality and purpose, about how we should live, and why. We may be born into a religion, just as we are born into a human society with its beliefs and practices, but in each case we are able to question and examine what we have been told is ‘right’ and ‘normal’. It may not be easy, but nothing worthwhile is ever easy. Science, the humanities and religion all tell us stories about the world, and in each case the same two basic questions help us.

- What is the story? What are the details? Is it coherent? How does this story differ from the other stories people tell?
- What is the evidence for this story? Are there other stories the evidence could support? Is there other relevant evidence which should be considered?

Summary

We can’t live a successful, healthy and fulfilled human life without believing in the reality and importance of particles, people and purpose.

This does not mean that any particular religion is true, but it does mean that the questions and issues raised by religions are real and important, and they deserve consideration in the same way that other important areas deserve our consideration.

This does not mean that God exists, but it does mean that we cannot plausibly deny that God is real on the basis that only material objects are real: none of us live a life which is consistent with that claim.

It does mean that we can consider questions of religion in the same way as other questions: by seeking to understand the story being told, and by considering the evidence for that story. Our lives are shaped by the answers we give to questions of purpose, morality and what it means to be human, so we need to choose carefully.