

A Theory of Useful Belief

This article describes the Theory of Useful Belief. One of the conclusions of the theory is that an individual must not hold a belief until it has been tested against their own personal experiences. This principle of course also applies to this article; you must not accept what I have written as true, but rather use it to stimulate the development of your own beliefs. The motto of the Royal Society is *Nullius in verba* which means *nothing upon another's word* and I endorse this advice. You must not believe anything that you are about to read.

Let me begin with four definitions used in this article:

The Truth: is that which is correct in every detail.

A Fact: is that of which we are certain.

A Belief: is that of which we are uncertain but which we judge to be true. Reality: is the way things truly are.

Imagine that Janet and John are sitting in a room together. Janet picks up a pencil, holds it out at arm's-length and then releases it. The pencil falls to the floor. Both Janet and John are certain that the pencil fell to the floor and thus by my definition it is a fact for both of them.

Now, John picks-up the pencil from the floor and takes it into the room next-door where Janet cannot see or hear him. While he is in that room he holds-out the pencil at arm's-length, releases it and the pencil falls to the floor. He then comes back to Janet and tells her what happened in the other room. John is certain that what he has just told Janet is true; the pencil falling to the floor in the other room is a fact for him, but Janet cannot be certain that what he is saying is true. Janet must make a judgement about the truth of what John has just told her and so, by my definition, she arrives at a belief about what happened in the other room.

Janet does not know the facts about events in the other room, instead she has beliefs about those events. Without firsthand personal experience of an event that event is not a fact, and this means that most of the things we think of as facts about the world we live in are not facts for us. Nothing that we have read in a book, seen on TV or been told about by teachers, friends or family is a fact for us. These things may seem like facts, and we may be convinced of their truth, but a fact requires certainty and without that certainty these things are not facts but beliefs for us; we do not know many thousands, or perhaps millions, of facts about the world around us, rather we have many thousands, or perhaps millions, of beliefs.

The idea of having beliefs, rather than knowing facts, about the world is difficult to accept because we can be sure of a fact and we must be unsure of a belief. If we cannot know that a belief is true but instead must always be uncertain that it is true, then what is the point of having a belief? There is one good reason for having a belief and it is because a belief can do something quite amazing that a fact cannot. In my first Janet and John example above, the falling pencil was a fact. If this pencil releasing was repeated it would be a fact each time, but no matter how many times it was repeated it does not make the next time a fact, all you can say is that it was a fact all the previous times; it is a fact that the pencil has always fallen to the floor, it is not a fact that the pencil will always fall to the floor. After repeating this pencil dropping experiment a number of times however, you will develop a belief that the pencil always falls to the floor when you release it. This belief tells you that the next time you release the pencil it will fall to the floor. A belief can do something quite amazing; it can predict the future.

Is it really possible to predict the future? Not only is it possible but it is so easy for us that we are doing it all the time without realising it. We have all experienced something happening that we have not expected or that we have been surprised by. If we have been surprised by an event then we must have been expecting a different event, and if we were expecting that different event then we

must have predicted that this different event would occur. If we had not predicted anything then we would have not expected something different and would not have been surprised.

I will define a belief that makes predictions about the future as a *Predictive Belief*. Not all beliefs are predictive. The belief that: *Jack Frost causes frost* is a belief, and there are those who hold this belief. However, this belief does not predict frost before it occurs, it only provides an explanation for the frost after it has occurred.

Predictive beliefs can be useful to us. We can use the predictions of our beliefs as part of the decision making process we employ when choosing a course of action to take. We can propose to take an action and use our beliefs to predict the outcome of that action. If the predicted outcome is unsatisfactory then we can propose an alternative action and predict the outcome of that action, repeating this process until a satisfactory outcome is predicted and then we can choose to perform that action. Our predictive beliefs have been useful because we have been able to avoid unsatisfactory outcomes by not having to go through the process of performing every action until we found a satisfactory outcome. Having different beliefs will result in different outcomes being predicted, and thus different courses of action being chosen, and in this way the actions we take are influenced by the beliefs we hold; our actions are modified by our beliefs.

I will define a belief that we use to modify our behaviour as a *Useful Belief*. Not all beliefs are Useful Beliefs and I will describe three tests by which we can determine whether a belief is Useful. The first of these is that the belief must make predictions that can be verified. A belief that: *each decision we take generates a parallel universe* makes predictions, but because we cannot detect anything connected with these parallel universes we cannot say whether these predictions are

true or false. The only way of verifying a belief is to compare its predictions with our experiences, and thus:

Test 1: a Useful Belief must make predictions that can be compared with our experiences.

Using a belief to modify our behaviour will only be useful if the belief predicts correctly. If things do not happen in the way the belief predicted then we may well experience an unsatisfactory outcome. It is not possible to be certain that our beliefs are true, but there is a way in which we can gain confidence in our beliefs. We can use the predictions made by our predictive beliefs as a test for those beliefs. If we believe that a pencil will always fall to the floor when released, then this predicts that the next time we release the pencil it will fall to the floor. If this is what we experience when we try it then our belief has made a correct prediction and this improves our confidence that it is a Useful Belief. We cannot say that our belief is true because if this were so then we would be certain that its predictions were always correct and we cannot be certain of this, we are only certain that this time the prediction is correct. It is also quite possible that at some point in the future we will have an experience that disagrees with the predictions of the belief. Even if it has made many correct predictions before, when a belief makes a false prediction it is no longer a Useful Belief. We must also ensure that the belief is giving a prediction and not an explanation, and we do this by requiring our experience to follow the prediction:

Test 2: a Useful Belief must not make predictions that disagree with our future experiences.

When a belief makes a prediction that does not agree with our experience it becomes an incorrect belief. The conventional view is that we must respect the beliefs of others even if we disagree with them, but this is not the case when we are using the Theory of Useful Belief. A belief must make a prediction and a future experience must agree with this prediction. This testing of beliefs enables us to say

with confidence that there are some beliefs that are false because they fail to predict how things truly are. We can respect a belief that has made a correct prediction, but we cannot, indeed must not, respect a belief that has made an incorrect prediction.

A third test arises because we are always uncertain of the truth of a belief, and we must test for this uncertainty in a belief before we can use it as a Useful Belief. I call this test the *conceivability of being wrong test*. When we perform this test we are not trying to prove the belief false, only to prove our uncertainty in the belief.

To perform the test we simply ask: “can we conceive of an experience that will disagree with the predictions of the belief?” This conceivable experience must not be impossible for us to have, but it can be so improbable that we believe we will never have the experience of which we have conceived. If we can conceive of such an experience, then our belief would be proved wrong were we to have that experience, and thus we can say that we are uncertain of the truth of our belief. However, if we cannot conceive of such an experience, then because there is no experience that will prove the belief wrong it will always be true, and thus we are certain of it when we should be uncertain of it, and it is therefore not a belief but fact or a definition. The *conceivability of being wrong test* is similar to Popper’s *Fallibility*, but it only applies to beliefs because it is only beliefs of which we must be uncertain.

For example, the belief that: *a house brick is heavier than a pen* passes the conceivability of being wrong test because we can conceive that if we were to weigh both a house brick a pen, and the pen was found to be the heavier, then our belief would have predicted incorrectly. We do not think that this conceived event will ever happen, but were it to happen the belief would be proved false. However, the belief that: *there is life on other planets* fails the test. Suppose for a moment that the belief is false and the Earth is the only planet in the Universe that has life. Every planet we look at will fail to have life, yet we will retain the belief because there is always

somewhere else to look. We cannot conceive of an experience that will prove our belief false, even though in this supposition the belief is false.

Test 3: we must be able to conceive of an experience that will disagree with the predictions of a Useful Belief.

These three tests are the basis of the Theory of Useful Belief. I have only been able to give the briefest of descriptions and there are many subtleties that have not been discussed. There is one more major element of the Theory I need to present, but this involves one of these subtleties and I need to discuss this first.

I have emphasised the importance of using our own personal experiences to test our beliefs for Usefulness. Unfortunately we live in a complex world, and while it is not impossible it is often inconvenient for us to obtain these necessary personal experiences. Instead we rely on others, those we call Experts, to have the experiences necessary to develop our beliefs, and because we have gained our beliefs in this way we must be aware that they are weaker than those we have developed from our own experiences. We do have our own Useful Beliefs about experts; we believe that some of them are trustworthy and some are less so, but one of our beliefs is that different groups of experts are watching over each other, and while this is happening, and they all agree, then what they say can be accepted as true.

The final element of the Theory examines our perception of Reality. What are our beliefs concerning how we perceive Reality, and are these beliefs Useful Beliefs? I am going to concentrate on a single sense; that of hearing, but my arguments can be applied to all our senses.

I believe that what we call sound is a variation in air pressure that radiates away from a source. When these sound waves enter my ear they vibrate a thin piece of skin called my eardrum. This movement is then transferred by three small bones to a fluid filled tube deep inside my ear, and small hairs of different lengths within this 6

tube sway in response to the vibrations in the fluid. The swaying of the hairs triggers a chemical reaction in the base of these hairs, and this generates bursts of electrical energy that move down nerve cells to my brain. These bursts of energy are received by my brain and are interpreted as sounds, and then by a process, which we have yet to discover, my brain makes me aware of the sound, and I ‘hear’ the sound.

While most of us may believe this is how hearing works, it is only for small parts of the whole set of beliefs that we will have any of the personal experiences necessary to make our beliefs Useful. The beliefs pass all three tests for a Useful Belief, but these tests have been performed by experts and our beliefs are weaker because of this. However, there is very little in my description that is controversial, and nothing new, but the beliefs have a serious consequence.

If we believe our bodies have a nervous system that relays information from the outside world to the brain then, in spite of not knowing how things work exactly, it follows that the brain does not have any direct contact with the outside world. If my ear converts sound waves into electrical pulses then my brain does not receive sounds, it only receives these electrical pulses. My ear sends information about sounds as electrical energy bursts which are quite unlike the sounds they represent. Once that information reaches my brain it must be interpreted as sound, and this means that every sound I realise I have heard has gone through at least one level of interpretation in my brain. It is not the sound itself that I hear, but my brain’s interpretation of information it has received about the sound.

The serious consequence is that the sounds I hear have been generated by my brain; they are not the sounds that entered my ear. The sounds have been constructed within my brain and I have no way of knowing if what I am aware of is anything like the sounds which entered my ear. Even when we are aware of an external stimulus, we cannot be certain that our brain’s interpretation of that stimulus matches reality. This means that we cannot even be certain of our own personal

experiences, and if this is so then even our own personal experiences cannot be facts for us.

We have already learned that nothing is a fact outside of our personal experiences, and now we find that we are uncertain of our personal experiences and even these are not facts; it is therefore not possible for any of us to know any facts at all about the world around us. This idea is not new, but I do not say that Reality is an illusion; it may be an illusion or it may not, we are completely unable to say what is the truth. I was therefore wrong to say, in the Janet and John example earlier, that they were certain of the falling pencil and that it was a fact for them; we can be certain of nothing, but we are able to generate beliefs about Reality, and while those beliefs make predictions that agree with our experiences then, despite our uncertainty of both our beliefs and our experiences, we gain confidence in both.

There are those who will argue that the Moon ceases to exist when you are not looking at it, but I will argue that looking at it, or even landing on it, does not prove its existence. We cannot prove that these experiences are facts, these experiences only generate beliefs about the Moon, and we can believe the Moon exists both when we are looking at it and when we are not looking at it. There are no facts; instead all we have are beliefs.

Surely this cannot be true. If we cannot know any facts then it is a fact that we do not know any facts! The cause of this apparent contradiction is my use of language; I should have written *I believe that* there are no facts, and had I written this it would have been clear that the statement itself is not a fact. Indeed, I should have used the words *I believe that* at the beginning of every sentence in this article because none of it can be proved to be fact, it is only my belief. As I have already said, you must not believe what I have written but develop your own beliefs, and if you doubt that I mean this, then you must reread the article putting *I believe that* at the beginning of every sentence.

There is a clear distinction between deductive and inductive logic. Using deductive logic we can know things for certain, but we do not learn anything new. Using inductive logic we can learn new things, but we cannot prove these new things to be the truth. Everything we learn about Reality is through inductive logic; we cannot be certain that what we have learned is true, and thus we can only have beliefs about Reality.

There are some facts, but they do not tell us anything about Reality. $5+7=12$ is a fact, but if I had 5 coins in one hand, 7 in the other and when I added them together arrived at the answer 13, then I have not made a new discovery but rather have miscounted because we define the sum of 5 and 7 to be 12. If a ball is yellow, then it is a fact that the ball is not blue, but this is a fact of deductive logic. We already know that the ball cannot be blue so we have learned nothing new, and the fact that the ball cannot be blue does not make us any more certain that the ball is indeed yellow because we can only say that the ball is not blue if we believe the inductive logic of our perception that the ball is yellow.

The *Theory of Useful Belief* postulates that we can know no facts but can only have beliefs about Reality, and that these beliefs must pass certain tests before they can be used to modify our behaviour. The power of the Theory of Useful Belief lies in the realisation that beliefs can be tested, and in its embracing of the superiority of belief over fact. We must abandon the notion that Reality is a set of facts awaiting discovery but instead pursue the development of beliefs; science is not the search for Truth, it is the search for Useful Beliefs. I believe that the Theory has applications to every sphere of human activity: it explains why we are afraid of the dark, why we do not like change and why we develop conspiracy theories: it can improve the scientific method, and alert us to the danger of believing that Reality obeys the laws of mathematics: it provides a new insight into the philosophical questions of free will and determinism, and it can develop new systems of non-religious ethics, education and justice.

Perhaps the most important application is to that of religion. The theory says that we must not ask “*does God exist?*” because answering this question requires us to prove facts, and we cannot prove any facts about Reality. Rather we must ask “*is the belief in the existence of God a Useful Belief?*” and when we test this belief we find that it fails the *conceivability of being wrong* test. We must not use the belief that *God exists* to modify our behaviour, not because we can prove that it is false but because we cannot conceive of a way of proving that it is false.

I cannot disprove that *God exists*, but I can say that it is not a Useful Belief and so we must not use that belief to modify our behaviour. Praying, attending a place of worship and living by the teachings of Holy scriptures are just three examples of actions we take based on a belief in the existence of God, and they are all actions that we must not take.

The Theory of Useful Belief is unambiguous in arriving at this conclusion, but it is not the last word on the subject; it is not a fact that we must not use the belief that *God exists*, it is only a belief that we must not use this belief. We cannot be certain that a belief is true and because of this we must continually review all of our beliefs to ensure that they remain Useful. It is not impossible that at some point in the future the belief that *God exists* will become a Useful Belief. The Theory of Useful Belief even provides the criterion for this event; it will happen when the belief that *God exists* passes the *conceivability of being wrong* test. Those who wish us to believe that God exists should stop trying to give us evidence of His existence, because no amount of evidence will prove His existence, and instead give us one example of an experience they would accept as proof that He does not exist, only then will the belief in His existence become a Useful Belief.

I do not believe that an anti-religious argument has ever been expressed in this way. I believe that the Theory of Useful Belief has many similarly powerful insights to offer Humanity and that it is powerful enough to change the course of

human intellectual development, I therefore believe that the Theory of Useful Belief represents a major philosophical advance. However, as I said at the beginning, my beliefs are not important; it is what you believe that is important. You must not believe what I have written here but instead be highly critical of it, and in so doing to develop your own beliefs. *Nullius in verba.*

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