



**To be or not to be: A matter of commonsense**

**What the Universe is — how it works — our role in it**

**Norman G. Wheatley**

*Matter of commonsense: what the universe is made of, how it works and our role in it:  
introducing the commonsense principle and a universal momentum theory superseding the theory of relativity*

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Cover image: The Rho Ophiuchi cloud complex, viewed from NASA's Wide-field Infrared Explorer (NASA public domain image).

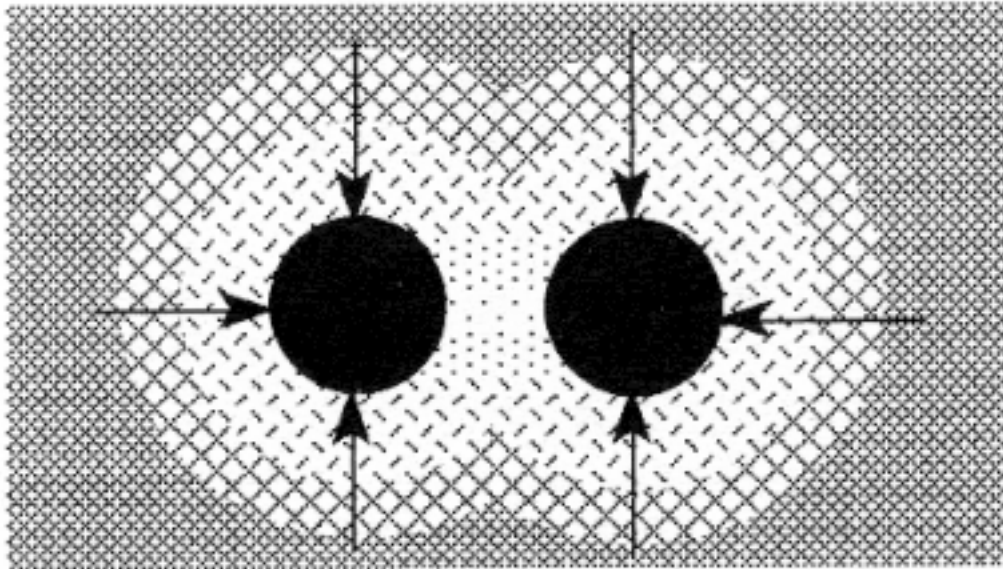


## Matter of commonsense

The Universe is driven by momentum.

Gravity is pressure, not attraction.

A pressure difference, due to shielding, forces objects toward one another.



# Contents

Acknowledgements.....	5
Author's preface.....	6
Introduction .....	7
1: Histories and propaganda .....	11
2. Superstition versus science .....	19
3. A brief history of Stephen Hawking.....	24
4. Specifying the real world .....	32
5. Wandering in Wonderland .....	40
6. Space and time and motions .....	44
7. How the universe works .....	48
8. The speeds of light .....	54
9. Traditional mathematics .....	59
10. Modern mathematics.....	66
11. Future mathematics .....	76
12. One universe, two worlds.....	84
13. The purpose of life.....	91
Epilogue .....	97
Bibliography .....	103

## Acknowledgements

It is impracticable, in times of mass media, to list all the teachers who have contributed to one's view of the world.

We can express a general gratitude to our teachers for their good ideas and blame ourselves for our adoption of bad ideas, and I do that now.

Of course I bear responsibility for the collection and presentation of the ideas.

My job has been to scrub some scribble off the walls of history and to offer some reliable writing material. But it is a joint venture.

The message on the walls must be the responsibility of readers.

The bibliography (page 103) covers the works from which I have quoted.

I thank my most enthusiastic supporters: my wife Joy (my eyes and ears among other things); my brother Harry and his family; and Robert S. Rossi.

With sincere thanks,

*Norm Wheatley*

## Author's preface

Ask not who wrote this book, ask how much it speaks for you.

Should anyone ask, "What authority has this book?", just bear in mind the good lesson of logic: take the message, not the messenger.

And borrow awhile these words from Omar Khayyam, the twelfth century Persian poet, astronomer and philosopher:

Myself when young did eagerly frequent  
Doctor and saint, and heard great argument  
About it and about, but evermore  
Came out by the same door as I went.  
Oh, come with old Khayyam and leave the wise  
To talk; one thing is certain, that life flies,  
One thing is certain and the Rest is lies;  
The flower that once has blown for ever dies.

And should any "Authority" ask, "What are the original sources of this book? On whose Authority is this version of behaviour founded?" just bear in mind the Authority that imprinted, at pain of death, for two thousand years and more, that the earth was master of the sun. And wonder at the Authority that created so many contradictory Gods, all blessed with infallibility.

Let us respond by saying: if the Authorities won't laugh with us, we will laugh without them.

If they cry "Unfair!" we'll laugh at them.

Ask now of old Khayyam: whence cometh wisdom? And share with him the answer, as he would share his wine:

Understanding is born of commonsense.

# Introduction

This book is essentially optimistic and constructive.

However, in order to provide a sound foundation it is necessary to demolish obstructions and sweep away the trash, not negatively, but in a whole hearted positive fashion. The reward is worth the effort and one of the bonuses is enhanced views of the world and every thing in it.

## Welcome to the commonsense principle

Here is a new explanation of what the universe consists of, how it works, and our role in it.

It defines the fundamental difference between the sole physical world and the countless worlds we are able to conjure up in our imagination. It explains the role of commonsense in learning to distinguish the one from the others and in relating them intelligently.

It also traces the disastrous confusion produced by our traditional failure to understand the proper distinction and relationship between tangible objects and their intangible relationships, and it reveals the Theory of Relativity as a modern expression of the religious dogma established by ancient mythology.

But its main message is that commonsense can produce the intelligence required for us to live in harmony with the universe.

We are what we make of our physical and philosophical intake. We have no choice of our initial intake because our genes, our parents, and the environment provide the initial nourishment for our minds and bodies without consulting us. But somehow we make something of it. We react and metabolise the food and information and in that sense we make ourselves.

From the beginning we are the products of our sensations but — to the extent that our will power becomes effective — we have the choice of shaping ourselves with either commonsense or common nonsense.

The initial task of commonsense is to distinguish differences between things and the most basic of all distinctions is that between wholesome nourishment and noxious fare, both physical and mental.

## Old theories never die, they simply fade into myths

Myths are superseded theories, and theories are statements about behaviour. Their purpose is not merely to describe patterns of behaviour of things in our world and beyond, their function is to fashion the foundations for our future.

Myths and theories are more than simple ideas, for ideas in themselves are of no consequence unless and until they are communicated and realised in some way as part of general intelligence.

Our intelligence has four stages of development: the discovery or invention of differences and patterns in behaviour, the transmission of the concepts of such discoveries, the reception of the ideas, and reaction to them.

Each stage in the development of intelligence is vulnerable to distortion and delusion and fairy tales ride lighter than facts. Consequently, as the story of the universe unfolds, the odds will often favour fiction against facts unless the theories are monitored effectively. It's like keeping bugs out of computer networks.

Imagine for a moment what the computer world would be like if viruses dominated programs and virtual reality superseded actual reality. We wouldn't be able to distinguish what is, from what is not. We wouldn't have to worry because we wouldn't know right from wrong, there would be no real differences, no real differences at all — for a while.

Clearly, it is essential to distinguish imagined things from actual physical things throughout the four stages of the development of our intelligence, and our only monitor is our commonsense.

### About the commonsense principle

The commonsense principle is the practice of referring to sensible things, in preference to imaginary things, as the fundamental source of intelligence.

The general use of the principle is to distinguish actual physical things from images, dreams, hallucinations, fiction et cetera. It is the only way we can resolve particular issues such as the validity of claims that

there is no real difference between material objects and empty space, time, or speed.

The principle applies the test of sensibility and asks whether we can commonly see, hear, smell, taste or feel things such as empty space, time, and speed. If we can't sense such things they probably exist in a different way from physical bodies.

Of course we can imagine objects appearing with speed and disappearing into the distance, or simply being here today and gone tomorrow. But do material objects actually change into bits of Space or bits of Time and vice versa as claimed by the Theory of Relativity? Is space/time an object as claimed by Relativity?

By what features will we know Einstein's bits of Space, Time and Velocity? When they come together will they interfere and cancel one another as the light waves do? On reflection may we send them back the way they came as we may send light photons? What distinctive colours, sounds, perfumes, flavours and textures will they have? Is it that they share no differences and therefore cannot be different from the creatures of Alice's Wonderland: the cat that could appear and disappear, the grin it could leave behind, and the clock that could control time?

The Theory of Relativity has no answer to such questions for they are about reality whereas Relativity is played in an altogether different world.



## The alternative to commonsense

The dominant alternative to the principle of commonsense is the doctrine of Platonism. It's an ancient Greek philosophy which maintains that the form of things, particularly the mathematical form, is more substantial than the physical content.

Plato proclaimed specific geometrical shapes for his forms but the doctrine itself is not so constrained. For instance, one could start with the number of times one can imagine mysterious morphological changes and multiply such numbers by the number of people who can imagine such things and then "prove" the substance of the imagined things by producing the product of their multiplication. The final seal of authenticity is in giving it symbolic form. That symbolic formalism, in effect, is the substance of the Theory of Relativity.

Plato inherited superstition from his Pythagorean predecessors. The ancient Greeks were devotees of doctrinal numbers thousands of years before Lotto. Odd numbers were male, even numbers were female, and some like our unlucky thirteen, had transcendental powers. Whereas commonsense says some characters represent numbers, Platonists maintained that numbers represented powerful characters controlling destiny. They got reality and fantasy back to front and believed that numbers possessed a deeper substance than the objects they counted. Einstein embraced the ancient superstitions and extended them to their ultimate absurdity.

Einstein published his special theory of relativity in 1905 and his General Theory of Relativity in 1915. For brevity we will generally refer to them jointly as the Theory of Relativity, or the Theory and the devotees as Theorists.

We use common sense to recognise, compare and understand the differences in the things that exist in our world, and to apply each particular understanding to enhance our intelligence and our general comprehension of the world.

But the Theory of Relativity obliterates the distinction between physical and non-physical things. It equates tangible mass with intangible ideas of speed and energy. It confuses observations with the observed events and it denies the distinction between imagined things and material objects.

Because the Theory denies our recognition of the fundamental differences between physical things and non-physical things it can cripple common sense. Instead of increasing our knowledge, the Theory initiates an endless chain of false concepts which infects our commonsense like a computer virus and consequently corrupts our comprehension of the world.

Einstein, after some novel practical work, squandered the rest of his life and his genius in the abyss of abstraction pursuing an imaginary mathematical formula that would contain the Form of Everything (FOE). The Holy Grail he sought has other forms such as, a Theory of Everything (TOE) and an Essence of Everything (shades of alchemy).

Such searchers are notorious for failing to distinguish between delusion and reality. Nevertheless we do in fact depend on distillation or compaction of concepts, to make our world intelligible. The proper aim of such searches is not to explain every thing but to identify a fundamental common property. That's how atoms were discovered. For explanations we require quite the opposite, an encyclopaedia.

Einstein lived in troubled times including two world wars and a great depression. With the whole world in turmoil physically and intellectually the security of mathematical constants — with which he propped up his theory — must have appeared like beacons of safety. He was not only an inventor of mathematical constants, he was a computer before its time. He came to fame before the world had learned the lesson of “garbage in, garbage out”. Perhaps that helps to explain why Einstein, basically a good man as well as a mathematical genius, chose fantasy instead of reality.

In order to show how he was able to spread his myth called the Theory of Relativity we will review the environment which produced both Einstein and his equation. We will compare Ptolemy’s false description of the world (as being centred around man on earth) with Einstein’s false description of the world (as being centred around each man’s observation of the world).

## Return to commonsense

This book offers for consideration a common sense alternative to Einstein’s metaphysical view of the world. It invites you to challenge those who would deprive you of the foundations of your intelligence. It also invites you to recognise that we need to improve our ability to distinguish facts from fantasy so that we may enhance our enjoyment of both, and therefore of life.

The bonuses include a master key to the genuine knowledge with which countless great teachers have stocked our intellectual warehouses, a lifetime pass to a real pressure driven universe, and a far better understanding of the implications of Einstein’s infamous equation than Einstein himself had.

Included in the offer is a unified explanation of the physical world (the Moton Theory of the Universe) on which we can build a genuine sense of security and confidence in our own commonsense. On the way, we will take a precious lesson, not from Einstein’s genius but from his foolishness in embracing superstition and confusing an imagined world with reality.

Briefly, this story is an open invitation to the best views of two worlds — wonderland and reality. It is an invitation to unlimited exploration and return to commonsense.

# 1: Histories and propaganda

The untold stories of behaviour within and between countless galaxies are part of the physical history of the evolution of the universe. The told stories, which we commonly call history, are ideas about some of the behaviour that constitutes that evolution.

A true understanding of past behaviour helps us comprehend what is happening now and enables us to predict future events. Achievement of that understanding requires realistic thinking that distinguishes true ideas from false ideas about behaviour. The Commonsense Principle is our only monitor for sorting factual history from fairy tales.

## The two kinds of histories

There are two kinds of world history. The first is the actual behaviour of physical things whether or not they are observed by humans. It is comprised of material particles and the way they move and generate events. The second is the non-physical scholastic history. It is comprised of human observations or comments on events, whether or not they have actually occurred, and of ideas about causes and consequences.

The two kinds of histories interact and produce more history and we are products of the mixture. Despite ages of speculation, research, and exploration we have not yet discovered precisely how the interaction is performed but there is no shortage of evidence of the mixture and its

effects. Cities, atomic bombs and industrial pollution are examples. And, just as climatic differences have helped in producing our various shapes and colours so differences in our beliefs have fashioned variations within and between our cultures.

One common factor in our heritage is the religious nature of our ideas — but it is a double faced agent. On the one side there is commonality but on the other side infinite differences. The old saying that man is a religious creature has validity, not merely in the fact that people build churches, but in the basis of our ideas. In order to start thinking we have to believe in something — to have faith in a basic assumption — otherwise our thoughts would be hopelessly chaotic. Consequently, thinking creatures are necessarily religious creatures but the converse is not necessarily true. In deed, it may well be that thinking and faith share an inverse proportional relationship.

The effect of histories on our cultures has produced a general trend of claiming one supreme God in lieu of countless gods and spirits. Nevertheless God is different for different cultures, and people have gone to war to prove the differences.

Some extreme differences are expressed in beliefs that the surest way to heaven or paradise is to exterminate the other God and His followers. But the differences do not stop there. Various sections of each religion are prepared to die for their sectional differences, and if

one million individuals wrote a one page description of their God there could be nearly one million different descriptions.

However, our story is not about sorting out religions or about whether gods and spirits exist. It is about *how* they exist.

Here we consider two crucial points.

1. Ancient histories portrayed man and his Gods as being made of the same stuff. They were somehow interchangeable. “Intangible” gods could materialise and some “tangible” bodies could get to heaven (the ancient Egyptians provided boats and nourishment for the journey). But some later histories differentiated between bodies and spirits. The general tendency has been toward a belief that bodies and spirits can exist separately and also together, but that they exist in different ways.
2. Science can not escape religion because scientists are human (religious creatures). Science was keeping abreast of religion and becoming modern by separating the spirits from the physical mass or vice versa. Modern science is displacing alchemy, but the General Theory of Relativity reverses history, or more precisely, resurrects the fundamental superstition of ancient religions as the basis of theoretical physics. Instead of bodies and spirits existing in different ways the Theory of Relativity asserts that they exist in the same way and that only the form is different — the spirits and the bodies are essentially interchangeable.

In considering those two points it is well to keep in mind that the sciences and mathematics in particular, have been inseparable from religion and that they are all about behaviour. We can now recognise

that Einstein’s famous equation ( $E = Mc^2$ ) is not an objective mathematical proof of anything, it is an historical statement of a powerful superstitious belief about the behaviour of bodies and spirits.

In obliterating the difference in the ways in which material and non-material things exist the Theory of Relativity confuses observational histories with physical history.

## Propagation of history

Just as the different shapes of evolving objects of the physical world are products of their particular ancestry and history (such as the formation of the solar system) so our cultures are products of the histories fed into them. But observational histories are not simple records of events, they are selections of ideas about events, and some of those ideas are selected, not for their veracity, but for the entrenchment or advancement of the authority selecting them. We call that process *propaganda*.

The term propaganda does not have to imply malice, and it certainly does not require conspiracy. One thing we could all agree on is that there is no shortage of evil in the world but false histories need no malice aforethought, they can breed their own evil from unintentional misinterpretations and apathy. Propaganda even produces new language to propagate its preferences. New twists of scholastic history are presented with new ways of speaking. But in many respects “newspeak” is only recycling traditional propaganda practices.

The following examples illustrate both intentional and unintentional corruption of history.

The vehicle industry provides a useful analogy. New models are promoted with a lot of blurb but the products can only be assessed by commonsense and with experience. Second hand cars have a physical history which may be significantly different from the scholastic history asserted by an eager seller. (Would you buy a second hand history from that propagandist?) The golden rule is: buyer beware, apply The Commonsense Principle.

When we consider the power of propaganda in current war and peace we can easily appreciate the importance of idea selection as an instrument for controlling contemporary human behaviour. But it is necessary to at least glimpse back to ancient history to fully appreciate the long term impact that such selection has had on the development of human intelligence.

The following examples of selection and development of ideas are chosen because of the magnitude of their impact on community behaviour and the tenacity of nonsense to prevail over commonsense. Make your own assessment about the kind and extent of force applied to sustain the nonsense.

These two quotes are from *The Illustrated Encyclopedia of Science*, 1975–84, p. 2:

An atomic theory of matter had been conceived by early Greek philosophers, notably Democritus (about 420 BC) and Epicurus (about 300 BC).

... however, Aristotle rejected Democritus' theory in favour of the view that all matter was composed of different combinations of the four elements — earth, water, air and fire.

Aristotle (384–322 BC) is the most famous of ancient Greek philosophers and his authority was generally beyond question. His unfortunate choice of ideas displaced the atomic theories of matter and formed the basis of alchemy — the study of matter that dominated science until the seventeenth century. Alchemy was practised world wide with two main objectives: to find a way of turning lead into gold, and to find an elixir of life. Alchemists made many interesting discoveries but alchemy was fundamentally flawed because it embraced the idea that objects contain spirits which are the essence of things.

Alchemy was supported by religious leaders of the time, whereas atomic theories with their implied atheism were suppressed by Jewish and Christian teachers.

The choices made by superstitious leaders in favour of mythical forces and against atomic behaviour (and the neglect of recourse to commonsense) were fundamental factors undermining intelligence and prolonging the Dark Age.

Another classic case followed from the doctrine of Claudius Ptolemy (c. 90–168 AD) that the world revolved about the earth and thereby around man. The impact of Ptolemy's theory was not so much in the theory itself but in the consequences generated by selection of Ptolemy's pattern of physical behaviour as a foundation for a prescription for human behaviour. As a general consequence Ptolemaic superstition bound and gagged scholars for about 1500 years.

That Ptolemy's false theory of the physical world was embraced as dogma appears even more tragic in view of the alternatives available.



For instance, Pythagoras (the astronomer) had proposed a theory similar to solar theory of Copernicus which eventually displaced Ptolemy's theory.. Also there was the work of Archimedes (287–212 BC). Archimedes discovered the principles of the lever and specific gravity. He said in effect, "Give me a pivot and I will move the earth" and he did in fact move the earth. So a commonsense world should have known that Ptolemy's theory (that the earth was a fixed centre about which the world moved) was false.

With the benefit of hindsight we can see that Ptolemy's package contained a corruption (a virus) that was cultivated by the process of idea selection to cripple human intellectual development and entrench established authority.

After some 15 centuries of propaganda which propped up the Ptolemaic picture of world behaviour, Galileo Galilei (1564–1642), who was condemned by the Inquisition for using common sense and for spreading the truth about the solar system, might well have said,

Give me a free voice and I will overturn this world of lies.

By the nineteenth century commonsense had prevailed over Ptolemy's superstition and looked set to challenge all ideas of mystical forces, but in 1905 the Ptolemaic myth was re-incarnated in a new form. It was like a new computer virus infecting the expanding network of scientific intelligence. It was called the Theory of Relativity.

This time the myth addressed all regions of the universe and its author was Einstein. According to his superstitious Theory of Relativity the world revolves around man's observations of events, (not around the events themselves) and everyone has his own laboratory in which he

controls his universal time and space. The Theory in effect, proclaims the restoration of each man to the centre of his universe. This gives it an appearance of democracy but it inherits the Ptolemaic authority with its doctrinal power to bind and gag scholars.

Common sense has revealed the truth about our place in the solar system. We are not at the centre of the solar system let alone the centre of the universe. Einstein, with his fabulous clock is attempting to take us back to the superstition of Ptolemy.

### Archimedes – the earth mover

The third example of selecting false ideas involves the great ancient engineer, Archimedes, and a misinterpretation of the behaviour of bodies which he moved with the aid of levers. It is included to illustrate how unintentional errors can be tolerated through the ages and give rise to fallacies in powerful new theories.

Archimedes (287–212 BC) claimed that with a suitable pivot he would be able to move the earth with a lever. It would have seemed impossible to move the earth because the idea conjures up a picture of a mighty lever ready to be turned about a pivot fixed in space, and also, because of the general belief that the earth had been fixed in place at the time of creation. Furthermore, moving the earth could have been dangerous as Galileo discovered at the beginning of the seventeenth century when his Church condemned him for merely talking about movement of the earth.

With profound admiration for Archimedes we might imagine him as a powerful man who could move the earth. And he actually did move it, but he was unaware of his feat. If his feat had been recognised it would

have moved the intellectual world much more than the physical world. But, unfortunately it happened long before Newton explained the law of reaction — the law that every action is matched by an equal and opposite re-action.

That law means that whenever an object is pushed away from earth (lifted) the rest of earth is pushed away from the object. It means that whenever Archimedes lifted objects with his famous levers he imperceptibly moved the earth. It also means that exactly half of the work that the lever did went unnoticed. In addition to that, when Archimedes lowered the object the earth moved back. That, as will be explained shortly, is actual movement. However, although all motion is relative, objects actually move only when pushed and this means that related objects that are not pushed, move only in a relative sense.

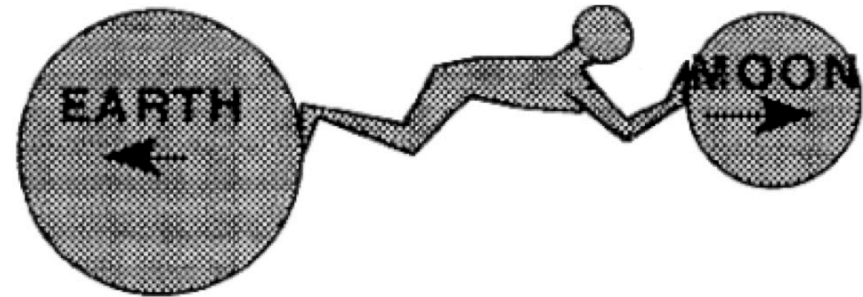
For instance, when the earth moves in relation to the cosmos, the cosmos moves in relation to earth. Therefore, when we send a rocket into space we move both heaven (relatively) and earth (actually) — quite a feat for small creatures!

It certainly warrants further explanation, and we do that in the next section.

### How earth reacts

Let's start with two drawings which illustrate the law of inevitable reaction.

FIGURE 1: MOON AND EARTH — ACTION AND REACTION



*A push on the moon from earth would cause equal and opposite movements in the moon and the earth. The distance that each would move would be inversely proportional to their mass but the amount of motion of each would be equal. The principle of equal and opposite reaction applies irrespective of size.*

FIGURE 2: OBJECT AND EARTH — ACTION AND REACTION



*When an object is pushed from or around the earth, the resulting motions of the object and the earth are equal and opposite. The push is shared*

*equally between the object and the earth. Measurement of the movement of the object represents only half the effort applied, the other half is attributable to earth movement.*

Newton explained three laws of motion:

1. The motion of a body will not change without being forced to change.
2. The amount of change in motion is proportional to the force producing it.
3. For every action (change in motion) there is an equal and opposite reaction.

If you have a little difficulty in visualising the logical implications of the law that for every action there is, without exception, an equal and opposite reaction take heart in the fact that you are participating in the removal of three superstitions that have hindered commonsense for thousands of years.

The first superstition is a combination of primitive instinct and propaganda that the earth does not move (like the old myth that the sun and moon rise in the east and set in the west, the stars move across the heaven, but the earth is immovable). The second superstition is that the actions are caused by phantom forces, and the third is that intangible action and forces interchange with tangible bodies.

Here we are dealing primarily with earth movement. Let's be precise about this. There are two quite proper ways of viewing earth moving events. The difference between the views stems from how we define the earth.

The first is to define all earthly objects, including the atmosphere, as part of the earth so that we can consider the movement of the earth as a whole thing in relation to the universe. In this sense earth has a centre of gravity and that centre point represents the location of the earth. Some parts of earth move in relation to one another but no internal agent or movement of the parts of the earth will move the centre of gravity of the whole earth in relation to the universe. Only external forces, such as asteroids and gravity, can move the whole earth.

The second is to define a moving object as separate from the rest of the earth so that we can consider the relative movements of the object and the rest of the earth as illustrated in the drawings above. The main cause of difficulty is inconsistency in definition. Once the parts are defined the definition must be held throughout the exercise. That is the consistency that distinguishes science from mythology. It is the lack of that consistency that distinguishes the Theory of Relativity from science.

To illustrate the distinction between the two views and definitions, imagine the earth and the moon as having once been a single planet having a single centre of gravity. Now imagine that a force has blown the planet in two parts — earth and moon. If we continue to consider the two parts as one whole thing the centre of gravity will not have been moved by the separation of parts and will lie in the space between them, at a distance from each part inversely proportional to its mass. So long as we view the two parts as one entity their interaction will not move the centre of gravity and therefore will not move the entity as a whole.

The picture changes when we view the earth and moon as separate entities. If we imagine the earth and moon as adjacent entities blown apart by an exploding force their centres of gravity will each have been blown a distance inversely proportional to their mass. The action and reaction is opposite and equal and it does not matter which part is tagged as actor or reactor. And the principle holds good irrespective of the disparity in the sizes of the two parts.

For instance the centre of gravity of a rocket blasted into space moves with the rocket and the centre of gravity of the rest of earth reacts equally. For practical purposes we consider the earth reaction as imperceptible but the earth must move and the perceivable shudder of local earth is evidence of the movement.

The law makes no distinction between moons, rockets and rocks. When David slung a rock at Goliath he really rocked the world. Now it's our turn.

The basic reason we cannot walk up walls and slippery slopes is that we need a firm foothold in order to push the earth in an equal and opposite movement. With commonsense and co-operation we can build steps and ladders and get to where we want to go. Together, we may move heaven and earth.

## Summary

1. When an object, for instance a recently landed meteorite, is considered (defined) separately from the rest of the earth, any force (like Archimedes) applied between that object and the earth will cause an equal amount of movement in each of them and the force will be shared equally between them. Their separate centres

of gravity will move according to the inverse ratio of their mass. The arrival of a very large meteor would move earth and the principle applies irrespective of size or whether its departure or arrival.

2. When every object is considered (defined) as part of the earth so that there is only one entity and one centre of gravity an internal force (like Archimedes) may move every part of earth by moving one part in relation to the other parts but there can be no movement of the centre of gravity of the whole earth without an external agent. The force must always be shared equally between action and reaction.

The movements of the earth as illustrated above are not exceptional. In fact the first point of the exercise is to show that the earth is not exempt from the universal law of action and reaction. The second point emphasises the equal division of the force. When one part is moved by internal force the other part must move equally and oppositely and in such an event the effort of movement is divided equally between the two parts.

Who, 23 centuries ago, would have believed they could move the earth? Even today some readers will be reluctant to accept that they can move the earth. But be sure of this point, false modesty is no excuse for failing to face facts. After all, believing one can move earth a tiny bit is nothing compared with believing one can get from earth to heaven, or be the image of a perfect being, or as the Theory of Relativity would have us believe, that particles moving at the speed of light are bigger than the universe.

It is not surprising that Archimedes never realised he could move the earth. But it is remarkable that the universal significance of the achievement has been neglected to this day despite the fact that the law of reaction is common knowledge.

We will expand on these observations later and illustrate that the centre of the whole universe cannot be moved because, by definition, there can be no external force to move it. We will also explain that the only demonstrable force is momentum.



## 2. Superstition versus science

Archimedes is also credited with the discovery of specific gravity.

Unfortunately, in accordance with primitive superstition, gravity was assumed to be a force within objects instead of being the effect of an external force. Newton apparently accepted the ancient doctrine without question and used it as the basis of his theory of gravitational attraction. Einstein embraced the superstition as part of his Religion of Relativity. Commonsense gives us an alternative explanation.

### Gravity

The force of gravity on mass is called weight and the weight of an object is nearly the same everywhere on the surface of the earth. Lifting a one pound weight one foot against gravity requires a force called one foot-pound and that is a basic unit of work, effort or energy. The speed of the lift depends on the power of the lifter.

When an object falls freely its velocity gradually increases from zero and the average speed during the fall is half the final velocity. Therefore, the distance it falls is half the final velocity multiplied by the duration (time) of the fall. Or, looking at it another way, in one second the object reaches a velocity of about 32 feet per second but because its average velocity is only half the final speed it only falls 16 feet in the first second. So, in calculating the work (energy) of gravity, or of any other acceleration, only half of the final velocity or distance is used.

Local reaction such as earth disturbance can sometimes be observed, but the distance the whole earth moves in re-action to the movement of an object weighing a billion tons (such as the matter in a volcanic eruption) is less than one billion billionth of the distance the object moves. Therefore the earth movement (Archimedes' feat) is ignored and half the total action is generally neglected.

Ancient alchemists believed that heavy objects contained a force called gravity which caused them to sink, and that belief infected Isaac Newton's information network like a computer virus when he was metaphorically stunned by a falling apple. Newton did not get rid of the alchemists' mythical essence, he merely changed its name to the force of attraction.

Alchemists also believed that a force called levitation invaded light objects like smoke and caused them to rise. It was that delusion, that virus, that caused pioneering aviators to light smoky fires under their hot air balloons. But, fortunately for hot air balloonists, common sense prevailed when observations demonstrated that there was no mysterious lifting force in smoke. Thanks to the science of commonsense balloonists are now able to laugh at levitation but they remain passively attracted to the perverse idea of gravity reaching up to drag them down.

Einstein's peers didn't know what gravity was so it is not too surprising that they neglected the fact that when gravity acts on an

object there has to be an equal and opposite reaction — without exception. Instead of resolving the problem Einstein complicated it by proclaiming that energy (activity) could change into mass.

## Relativity

The history of false concepts of behaviour and confusion of mass and activity which we have briefly traced from Archimedes' earth moving enunciation to Einstein's theory has spawned the following inter-related superstitions:

1. There is a force called energy which exists as mass exists.
2. Speed increases the mass of a particle.
3. Speed, space, time and mass are interchangeable forms.
4. Energy is a form of mass and interchangeable with mass.

Those four superstitions about the behaviour of energy, mass, space, time and speed are fundamental ideas of the Theory of Relativity and because we are made of mass we are supposedly subject to the same behaviour. In the following chapters we will test those ideas against the Commonsense Principle and begin relegating the Theory of Relativity to the realm of Myths.

Myths were accepted theories that explained extraordinary events and behaviour by inventing causes or gods and generating superstition. Despite the advances of science some old gods have been recycled as causes of behaviour. The main difference is that the gods are now called physical forces and when not riding on the band wagon of scientific achievements they shelter in the shadow of science.

Of course the world's problems can not be attributed to any one cause but it is fair to say that Aristotle's theory of mythical forces was used to suppress common sense and thereby human behaviour and that the perpetrators received praise instead of condemnation. It is also fair to ask, with reference to the Theory of Relativity, to what extent modern "heretics" suffer academic penalties, and whether Einstein and other propagators of the relativity virus should be praised.

The first world war (1914–1918) raised unprecedented questions about the role of science and put further pressure on theoretical scientists to produce a more cohesive and comprehensive explanation of the world in which we live. At the time, and before the war, there were confusing debates about what electrons were made of, what carried electromagnetic waves through space, what was energy, and how the speed of light might be explained.

The confusion was exacerbated by wild superstitious speculations, such as time running backwards, space having a self contained existence, ideas being the only reality, and material objects existing only in the imagination. Consequently facts and fiction were hopelessly entangled.

The time was ripe, the superstitious theorists had to come up with a response and by 1915 they were already placing their faith in Einstein's Theory of Relativity without realising that Einstein's equation merely describes one unknown (the phantom of energy) in terms of another unknown (the phantom of inherent speed).

In his book, *A Brief History of Time*, Stephen Hawking, on page 87, tells the tale that until the 1920s only three men in the world understood the Theory of Relativity. We can be more lenient and

suggest that even they did not understand its implications — because if they had they should have rejected it.

In 1919 British scientists reported a highly questionable confirmation of Einstein's (German) theory. It was hailed as a great act of reconciliation between the two countries after the war. But more than that, it was a chance to announce their embracement of a new doctrine. That doctrine was absolute faith in the abstractions of a new mathematical equation. So long as they lived within the equation, superstitious physicists could believe they could create and annihilate matter, and cause immaterial things to move objects.

Ironically, because the various departments of research and development can be properly linked only by common sense, the acceptance of Einstein's ideas, which override commonsense, destroyed the opportunity for a profound reconciliation of international philosophy with physics and with reality.

The intellectual wealth from the great thinkers of the world could have funded the essentials of a world wide reconciliation with reality. Particularly in 1905, when Einstein explained that the random motion of dust particles in liquid was caused by atoms bumping into one another, and that photo-electricity was generated by photons bumping into electrons.

Einstein's explanations were good instances of the force of impact (pressure) and they should have led towards a better understanding of how physical pressure drives the universe. Instead, superstitious scholars of the world turned backwards to play in Wonderland with Einstein's fabulous clock that could control time. They were back in the company of Aristotle and alchemy.

The history of alchemy is a tragic drama of misguided innovation.

All substances are composed of the same elementary particles; therefore they are essentially the same stuff and at least theoretically interchangeable. But Aristotle ruled that the form or spirit, and not the atom, was the essence. By following Aristotle, alchemists took the wrong track, they sought to turn the spirit of lead into the substance of gold. Einstein extended alchemy by seeking to turn speed into matter and time into distance, and he became hopelessly entangled in the superstitions that doomed the aspirations of alchemy.

In 1905 some of the virus carrying essences of alchemy joined forces and emerged in their most virulent form as "energy" in Einstein's infamous equation,  $E = Mc^2$ .

Since then they have been programmed by the Theory of Relativity to play their roles on the world stage, mainly in the guise of attractive and repulsive forces. They are the clowns that fooled Einstein. Let's take a glimpse of the performance.

A sun god called Energy is the producer and star performer in the farce called Relativity. The plot is about Energy playing the interchangeable roles of Mass, Space and Time and the highlight is a massed chorus of photons who have lost their mass and perform in waves as pure poetry in motion (according to the Theory of Relativity the photon chorus consists of acting without any actors).

There is a whiff of plagiarism about the play of Relativity because the myth that sunlight is a spirit (energy) harks back to the ancient Egyptians and other sun worshippers. In the absence of a better understanding of sunlight such a myth may have been very useful, but

it is always a tragedy for commonsense to be sacrificed on the altar of mythical gods and forces.

Fortunately it has been established beyond reasonable doubt that all electromagnetic radiation, including sunlight, is composed of particles which have linear and oscillating motion and enough mass to move physical objects. The so-called evidence of the equivalence of mass and energy (that actors can dissolve into acting) can now be seen to be misinterpretations of facts and experiments. There is absolutely no need of a myth to explain light and its behaviour. The myth could have been abandoned in the light of Newton's and Faraday's explanations and it certainly should not have been invoked by Einstein.

Myths can be fun and educational but if embraced as fact they can destroy the foundation of reality. The survival of reality depends absolutely on maintaining the distinction between actual physical things and ideas of things that are only in the mind. Recycling a myth as a theory in a society is roughly analogous to infecting an information net work with a computer virus. In order to cope with the problem we need to identify it and recognise how it is spread.

## Evolution

History is about behaviour and the most fundamental lesson from a study of behaviour is the influence of the environment on the patterns of life. Clearly the sequence of day and night has dictated the daily patterns of life and it is therefore natural that we should recognise the sun as the cause. We can easily understand why the sun came to be worshipped as a god.

It is also clear how the annual seasons have dictated the seasonal reproduction and other annual cyclic patterns for many creatures and consequently the behaviour of hunter gatherers. In short we can easily recognise that it was natural for the relative orderliness of the environment to have a massive impact on behaviour and that humans would seek causes and invent gods and other spirits to represent the causes.

Darwin's theory of evolution has extended our understanding of the role of the environment in forming patterns of behaviour. It took years of sailing around the world for Charles Darwin to observe life on earth as he saw it. It also took him years of studying the works of other scientists to fashion the ideas of evolution as he conceived them.

Since then technological changes have revolutionised our intelligence. We can witness events around the world as they unfold, we can see the microscopic and the macroscopic and we can zip to any place on the surface of the earth and even beyond.

The evolution of electronic communication has given us a chance to review all the intelligence that has accumulated since we learnt to record our ideas. But we have recorded such a vast amount of ideas that a review of them leaves no time to think. By simply sitting with a computer an individual can instantaneously summon a single word or sequence complete encyclopaedias, or fill the screen with a continuous stream of pictures of natural events or of figments of imagination. We are overwhelmed with information and our problem has become one of how to choose and evaluate intelligence and identify superstitions.

What technology has not yet provided is a commonsense theory of emotions and imagination and the way patterns of thought impact on patterns of behaviour.

Our thinking falls naturally into three regions or classes of magnitude and superstitious historians, like the myth makers before them, have created gods called scientific forces to match these classes. First, we have the heavens in which they have replaced the power of stellar gods with the force of Attraction of Gravity. Second, we have the world around us where they have replaced the spirits of nature with Attractive and Repulsive forces of electromagnetism. Third, we have the internal structure of atoms where they have replaced the alchemical essences with Weak and Strong nuclear forces. To govern in general all three regions they have invented a god called Energy who travels in a chariot called the Speed of Light.

Our evolution began with us making realistic judgments about the environment and our evolution continued because physical history judged our assessments as realistic. Survival is dependent on success in a continuous interplay of judgments. Dinosaurs and dodos eventually got it wrong and their history closed with one word — extinction. Other creature populations, like lemmings and locusts, wax and wane because they instinctively misjudge the physical larder. We also gamble our future on dubious judgments of our environmental larder.

Like all creatures we survive symbiotically. The bees and the flowers share a social contract based on mutual trust and their continued existence is dependent on their reading of history being realistic. If the flowers fail or the bees buzz off and breach their contract there's no way that they will be saved by transmutation. Obviously there are still some lessons to be learned from the birds and bees.

In order to review history our first need is to recognise our two histories for what they are — one, an inexorable evolution of the physical universe of which we are a passing phase, and the other a possibly unique means of transmitting information and thereby influencing the evolution of a part of the physical universe. That's a significant role and surely warrants a realistic effort on our part, and that requires a reframing of our attitude, a review of our assumptions about behaviour.

That is what this story is about: getting ideas of history right by distinguishing science from superstition.



### 3. A brief history of Stephen Hawking

Intelligence is inseparable from ethics because they have a common purpose. That purpose is to achieve the best means for, and best kind of, survival.

Any society that will not recognise that a thing cannot be both a thing and a non thing is clearly unable to distinguish what is right from what is wrong.

The society that embraces the Theory of Relativity believes that photons are particles but are not particles, that light has a speed that is not a speed and that photons have mass but don't have mass. It is therefore a society that is both intellectually and ethically crippled by superstition.

#### To be *and* not to be

In his book, *A Brief History of Time*, Stephen Hawking summarises significant scientific and superstitious developments since the times of Aristotle. The book is extremely important for several reasons:

1. It represents the thinking of the top echelon of our intellectual society which has applauded his appointment to the post of Lucasian Professor of Mathematics at the University of Cambridge. (Incidentally, there is a twist of humour in the introduction, in which Carl Sagan says that Hawking is a worthy successor of Newton, whereas Hawking closes his book with a scathing attack on Newton's ethics.)

2. It portrays the society's intellectual condition on a broad canvas so that we can glimpse the spread and depth of the confusion generated by the relativity virus.
3. It presents what could be the ultimate challenge to common sense which if neglected might indeed mean that our history has a brief time to run.

We can now consider some of the statements and other symptoms appearing in Hawking's book. It will be simple if we use quotations from his book and then offer some common sense responses.

[*The page numbers quoted below and on pages 25–29 are from Hawking's A Brief History of Time.*]

#### The spread of superstition

- p. 11: A good theory makes predictions and can be disproved by observation.

Unfortunately the Theory of Relativity is a superstitious doctrine and therefore immune from facts, as the following quotes and comments clearly illustrate.

- p. 21: The fundamental postulate of the theory of relativity was that the laws of science should be the same for all freely moving observers, no matter what their speed.

p. 43: The universe looks identical in which ever way we look and wherever we are.

But we know that the world looks different in different directions from different positions at different times. If the world looked the same in all directions we would not be able to find our way home — let alone back to reality. Hawking has a problem. Our observations are enough to destroy the Theory but not the doctrine. Common sense says an observation of any universe from the perimeter must be different from an observation from the centre of that universe.

But Hawking goes on to demonstrate the confusion that inevitably follows once the fundamental differences are abandoned. He says:

p. 43: The assumption that the universe looks the same in every direction is clearly not true in reality... but a lucky accident uncovered the fact that ... [it] is in fact a remarkably accurate description of our universe.

That rather curious proposition flies in the face of actual observations. Common sense assures us that the universe must appear different in different directions otherwise we would be unable to observe even one close galaxy let alone the thousands of distant galaxies that have been observed. He supports his statement by a flimsy premise that some scientists detected cosmic microwaves but were unable to detect any difference in them no matter where they pointed their antenna. But he ignores the main issue — what carries the waves in space?

## Self-deception and egocentrism

Relativity requires that every man must be always at the centre of the universe and that is a curious attitude that Einstein and Ptolemy had in common.

p. 13: The general theory of relativity and quantum mechanics are known to be inconsistent with each other — they can not be both correct.

Logically they can both be wrong and must be if Einstein's equation is wrong.

p. 54: Penrose and myself in 1970 ... proved that there must have been a big bang singularity. ... It is perhaps ironic, having changed my mind, I am now trying to convince physicists that there was in fact no singularity at the beginning of the universe.

So mathematical proof is not proof; but the author continues:

There was a lot of opposition to our work ... however one cannot really argue with a mathematical theorem.

Hawking is wrong. Both the assumptions and conclusions of so-called theorems can be false. But Hawking entirely misses the point. The point is that the acclaimed master of the Theory of Relativity is not only fooling the world, he is also fooling himself. The real issue is where he went wrong. He should be questioning his blind faith in Einstein's equation and its assumptions.

## The four forces and virtual existence

p. 74: Force carrying particles can be grouped into four categories ... gravity, electromagnetic, weak nuclear and strong nuclear forces.

We know that some things can apply force in the real world, but the way the Theory uses the term, implying that a force exists in its own right, takes us back to the days of gods and spirits. The four forces are all “attractive” and two are also repulsive ugly critters and the Theory offers no explanation or apology for them, simply accepting them, *a priori*, and presenting them as real deities borne at the speed of light by virtual particles.

Commonsense says: in all history there is not one action or event that can be shown to have been caused by attraction, nor is there any evidence of a force existing in the self-contained way that these forces (like gods) are supposed to exist.

p. 73: The force carrying particles exchanged between matter particles are said to be virtual particles because, unlike real particles, they can not be detected by a particle detector. We know they exist, however, because they do have a measurable effect: they give rise to forces between matter particles.

This sheer invention of mythical virtual particles that they know exist stems inevitably from the myth that there are colossal attractive forces between particles. The Theory leads to more extravagant claims, especially for gravity.

The Theory postulates that non mass particles (whatever they might consist of) are continuously ferrying bits of gravity force from every particle in the universe to every other particle in the universe, and this

enables every particle to magically pull every other particle without touching any of them. In place of one star attraction (the Great Ghost of Gravity), the Theory now offers an infinite number of tiny clown attractions.

Relativity offers no explanation of how such virtual particles burdened with an attraction, which varies inversely with the square of distance, could ever be launched. The truth is that particles jumping from one object to another push the objects apart, they do not pull them together.

## Substitution of observations for the events observed

p. 18: A ping pong ball on a train would obey Newton’s laws just like a ball on a table by the track. So there is no way to tell whether it is the earth or the train that is moving ... The positions of events and the distances between them would be different for a person on the train and one on the track, and there would be no reason to prefer one person’s position to the other.

These statements hide two false assumptions. The first, that motion is attributable to a single object, which is the same assumption that attributes a constant speed to light. But we know that motion is a relationship between two things, and we can tell absolutely that both the train and the earth are moving in relation to each other, and at different speeds with other things.

The second false assumption involves the confusion of an event with its observation. This hides the fact that observations are events in their own right. In the example there are three events (one movement and two observations) and it is false to assume that any two should be the

same. This fallacy is common throughout the Theory. It leads immediately to the next assumption.

p. 18: The nonexistence of absolute rest therefore meant that one could not give an event an absolute position in space ... and in time.

In fact, Newton gave us an immovable centre of the universe which is an absolute position at rest. We elaborate on absolute time and space later.

The Theory illogically assumes that because one (human) can't give an absolute fix in space and time, absolute space and time do not exist. This leads the Theory to the curious assumption that there is no absolute universal time or space.

The Theory claims that observers possess time personally and it is different for every observer. Instead of time as we know it, the Theory has invented a new substance called space/time. In reality space and time have no mass but they are the factors that produce speed which Einstein's theory equates with mass.

The general effect of the Theory is to proclaim that all the things that we know are here to stay, can now disappear, and the speed of light, which like every speed must be relative, now becomes the only non relative thing in the world.

p. 35: Another prediction of general relativity is that time should "appear to" run slower near a massive body like the earth... a twin living on a mountain ages faster than his twin living at sea level.

p. 36. In the theory of relativity there is no unique absolute time, but instead each individual has his own personal measure of time that depends on where he is and how he is moving,

Common sense and observation repudiate such assertions. A day is measured by a rotation of the earth, irrespective of where twins live, and after three score years and ten, both twins would be precisely seventy. But the Theory here is fundamentally flawed. It claims there is no absolute position so there can be no absolute speed of an observer. If his speed is related to a billion stars he will have a billion different speeds and have a billion different ages simultaneously.

The Theory has invented a mythical speed (movement) for individuals that is unrelated to every other thing in the universe — such a movement is impossible. The Theory has invented and bases its proclamations on an absurdity.

If one moves a grandfather clock the pendulum will be slowed or even stopped but that will not affect solar time. Relativity is blind to the simple fact that every physical object is, in effect, a mass of oscillating clockwork which can be speeded up or slowed down without affecting solar time in any way whatever. If something is exposed to sunlight the impact of photons will speed up its life (the process of decay) but that will not upset the solar system. And so it is with the resonance of caesium clocks and hydrogen maser clocks.

When Relativity claims that time changes pace to keep in step with caesium clocks don't bother asking which clock? and which time? Just remember Relativity is back in Wonderland. The Mad Hatter holds the clock and it is stuffed up with butter and stopped at tea time — therefore it is always tea time.

Lift up the Mad Hatter's hat and you will find our old friend, Albert Einstein.

### Creation of infinite universes from speed

p. 21: As an object approaches the speed of light, its mass rises (increases) ever more quickly. It can in fact never reach the speed of light, because by then its mass would have become infinite, and by the equivalence of mass and energy, it would have taken an infinite amount of energy to get it there.

Common sense can easily demolish that claim by simply asking, what speed in relation to what other object? Relativity is stumped for an answer.

Visualise a host of adjacent particles in space. A sudden explosion moves them apart at various enormous speeds which means that all particles are travelling away from one another at different speeds so they all increase their mass. But in relation to which speed? If there were a million particles each would have a million different speeds and amounts of mass simultaneously.

If it's a sufficient nuclear explosion, some of the particles will reach speeds exceeding half the speed of light from the centre and therefore exceeding the speed of light from particles exploding in the opposite direction. Such an explosion should, according to Relativity, produce great numbers of particles which are individually bigger than the universe.

Einstein's idea of the mass of objects being increased by speed is clearly absurd.

Let's examine the so-called laboratory "proof" that speed increases the mass of particles when they are accelerated in an electromagnetic field.

Imagine a continuously firing shotgun shooting pellets at a speed of 1,000 km/h at a ball. The pellets from the gun would strike the ball and push it away from the gun with increasing speed as more pellets strike the ball until eventually the ball would be moving away at virtually the same speed as the pellets so the maximum speed of the ball is 1,000 km/h and the ball remains the same size.

Now start again, visualise the striking pellets becoming embedded in the ball and thereby increasing its weight (mass). The ball would continue to grow bigger in geometric proportion to the speed. Eventually it could be imagined to become enormously large and require an enormous amount of pellets to increase its speed and the ball could never actually reach 1,000 kilometres per hour.

There are two interpretations of what has happened. First according to the Theory of Relativity the speed has increased the mass of the ball therefore speed is equal to mass. The speed came from the energy in the pellets so speed and energy are equivalent and therefore energy is also equivalent to and part of mass.

The second interpretation is the commonsense explanation. That is, the same common sense view that was used to present the example and to state that the ball got its motion from the motion of the pellets (not from a mythical energy) and the ball increased its mass because of the embedded pellets and not because of the speed.

The pellet example is analogous to particle growth in a particle accelerator. The particle is accelerated by an electromagnetic field and



the more the particle is accelerated the bigger it grows. The commonsense explanation recognises that electromagnetic fields are comprised of the same stuff as electromagnetic radiation (photons) which travel at the propagation speed of light. The photons act like the shotgun pellets and drive the target particle and some photons join with it and so increase its mass.

There is simply no need to invent a superstitious speed which changes to matter.

Like the ball the particle cannot be driven faster than the speed of the things that are pelted at it. On the other hand both the ball and the particle could be accelerated indefinitely if pursued by the gun or the electromagnetic field respectively. In other words there is no universal speed limit for particles, their speed is limited only by the speed of their impeller and their environment.

Such absurd implications of Relativity follow from the assumptions that speed is not relative, but intrinsic in each object, and exists in the same manner as matter.

But speed is a relationship between two positions it describes the action of change of distance between the positions and is not a part of any single position or thing.

### Photons *have* and *have not* mass

p. 21: Only light, or other waves that have no intrinsic mass, can move at the speed of light.

p. 75: Equally, if a real photon [the doctrine has now bred unreal photons – *NW*] collides with an atom, it may move an electron from an orbit....

Those claims are contradictory because light waves are composed of photons, which must have mass, otherwise they could not dislodge electrons as stated above, nor would they be affected by gravity as they are, nor exist independently.

Photons have inertia and behave in every way as mass behaves but they upset the myth that particles become as big as the universe at the speed of light, therefore the Theory has to deny they have mass. It's simply a matter of faith — of superstition.

It is curious that Relativity maintains that photons have no mass when their mass is easily demonstrated and precisely measurable. For instance if rotatable vanes are light reflective on one side and light absorbent on the other, sunlight will drive them around with measurable impact. Also scientists have precisely measured the force of impact of photons colliding with electrons. Despite this logically irrefutable proof that photons have mass, Relativity remains blinded by a belief that a mythical “energy” must be involved.

Here is a typical instance of Relativity misconstruing the results of precise scientific experiment. In 1922, A. H. Compton began experimenting with the impact of photons on electrons in crystalline calcite:

[The page numbers quoted below and on page 31 are from the McGraw–Hill Encyclopedia of Science and Technology, vol. 4.]

p. 256: Perhaps the greatest significance of the Compton effect is that it demonstrates directly and clearly that in addition to its wave nature with transverse oscillations, electromagnetic radiation (light) has a particle nature and that these particles, the photons, behave quite like material particles in collisions with electrons.

That's a clear statement that photons have mass and that fact directly destroys Einstein's claim that photons have no mass. It also destroys claims that the mass of a particle increases with speed and that particles have infinite mass at the speed of light.

If the claims of Relativity were true the speed of sunlight should produce photons as big as the universe constantly bombarding earth. Also, reflected sunlight photons are continuously passing incoming sunlight photons at twice the speed of light therefore they should be infinitely times infinitely large.

Let's look in more detail. Only physical particles can have momentum and Compton and others have demonstrated that radiated photons have linear momentum (Planck's quantum x speed of light) and an oscillating momentum, (Planck's quantum x frequency) and measured their impact on electrons. But Relativity stubbornly misinterprets the results and calls the momentum "energy" and says the photons have energy but no mass. That makes Relativity self contradictory because it holds that energy and mass are equivalent.

## The certainty of uncertainty

p. 163: Einstein refused to believe in the reality of quantum mechanics, despite the role he played in its development. Yet it seems that the uncertainty principle is a fundamental feature of the world we live in.

p. 165: The trouble is the uncertainty principle means that even "empty" space is filled with virtual particles and antiparticles. These pairs would have an infinite amount of energy and, therefore, by Einstein's famous equation  $E = Mc^2$ , they would have an infinite amount of mass. Their gravitational attraction would thus curve up the universe to infinitely small size.

Those long quotations are warranted on several grounds.

1. They portray the hopeless confusion of the so-called Theory. Any theory which embraces, as an indispensable doctrine, the absurdity of an infinitely large object having an infinitely small size, is simply not credible.
2. They reveal the confusion and disagreement amongst the proponents of the Theory, especially between the two High Priests, Einstein and Hawking.
3. They reflect the muddle of superstitious concepts in Hawking's mind.
4. They show the inconsistency of theorists who have absolute faith in the certainty of electron behaviour in computing their proofs, but simultaneously absolute faith in the uncertainty of electron behaviour.
5. They cry out for common sense to step in and stop the nonsense.

It is appropriate to close this non-exhaustive sample of dubious claims with a question on black holes, Hawking's pet topic.

p. 94: Nothing can ever get out of the black hole.

p. 100: Stars that come too near this black hole will be torn apart by the difference in the gravitational forces on their near and far sides.

If nothing, not even gravitons, can get out of black holes, how can black holes have so much gravitational attraction? Relativity has no answer.

The commonsense answer is that black holes have no attraction: their parts are pushed together in accordance with The Moton Theory (discussed in chapter 4).

There are lessons here for us. The obliteration of observable differences disables our common sense but on the other hand, unnatural division, such as separating intellectual research from ethics, or science from emotions, is unreal.

The world suffered the Dark Ages because Ptolemy's theory obstructed investigation of the real universe. Today the world is suffering global devastation because investigation and recognition of the causes are obstructed by a confusion of superstitions, phantom forces, and selfish illusions.

## 4. Specifying the real world

This realistic view of the world is offered for consideration as an alternative to the non realistic view offered by the theory of relativity. It is not a question of which is more realistic, that's self evident. The question is which is more useful and fruitful in our endeavours to understand and live with our environment.

### Information, attributes and thinking

There are two basic kinds of things in the universe. Physical things (comprised of material bits) that are touchable, and communication (influence) between them, which is not touchable. But just as there are different kinds of physical things such as solids, liquids, gasses and plasma, so there are four different kinds of communication, and these are spatial, temporal, conceptual and volitional relationships.

The physical things and their relationships constitute a complete communications network, the function of which is, of course, to carry information and instructions.

### Information

All information is received as pressure impulses, sensed and stored and manipulated as ideas, and transmitted by pressure impulses. We get our information in the following four ways:

1. By genetic programming which passes messages from one generation to the next, and limits it to one step and one direction.

2. By direct sensory information, which limits the information to one recipient and one life time.
3. By symbolic language (aural, visual or tactile) which enables ideas to be debated and passed on with precision and to be developed over centuries.
4. By imagination which enables us to manufacture new ideas from the relatively raw material provided by the other sources.

Despite the incredible productive power of the imagination it is probably the third system, symbolic language, which most distinguishes man from other animals. Language is obviously the basis of the development of human domination. It is notable that all systems are dealing with ideas, all the ideas are about coping with the impact of particles, and that the transmission of the ideas of all systems is achieved only through the impact of particles causing an exchange of motion.

All four sources are inter-dependent but the power of imagination, which remains a mystery, is transcendent and may be envisaged as the fountain for all streams of life on earth and therefore of more fundamental importance in the survival of life, than human domination.

Another way of understanding imagination is to see it as the navigator of intellectual and technological progress. That view helps us to

recognise the differences between fantasy and fact. With a navigator and map we may fancifully picture our journey and our destination but they are not realised until we actually set out and arrive. The imagination is careless about such differences but those differences are crucial in separating intelligence from nonsense.

The importance of understanding the differences warrants two analogies.

1. A monkey may pound a typewriter and may produce a tangible word but it will not be communication because the monkey's intangible imagination does not match the message represented by the word.
2. Consider how many animals use equipment, sometimes in sophisticated ways, such as termites building air-conditioned homes. There are two points to note. First, such feats are achieved with imagination and genetic intelligence and slow progress may be achieved genetically. But rapid changes require decisions and precise communication with symbolic language. Second, even when a picture in the imagination is realised the crucial difference remains. The image in the mind and the physical reality still exist in absolutely different ways.

There is a scholastic doctrine, called Realism, which proclaims that universals, or general ideas, have objective existence. Einstein's propaganda that the idea of energy exists in the same way that mass exists is a consequence of that doctrine. But ideas are not objects, they do not occupy space exclusively, they exist only in a relative manner.

Einstein's approach is doubly mistaken. First, it ignores the distinction between images and their realisation (the imagined forces of attraction and repulsion without contact have never been realised and remain only fantasies). Second, it substitutes the image for the real thing. The consequence is that the idea of energy (the image) is falsely substituted for mass (physical things).

A theory is an explanatory concept, a description, of how things exist and change. We can use such explanations to understand what has happened, what is happening, and what may happen. They apply equally to fiction and to fact.

We use theories as yardsticks, or benchmarks, to measure (evaluate) events and vice versa. Clearly life becomes confused when we use too many yardsticks and get false (inconsistent) ones mixed up with truthful (consistent) ones.

The best way to sort out theories and our thoughts is to start with the most fundamental things from which we get the most important theories. They deal with matters such as what the universe is and how we exist and function in it. They need to be monitored and the only way to do that is by applying common sense.

It is not sufficient for theories to appear to be self consistent, it is necessary to check whether their fundamental assumption is true or false.

Names such as energy, light, heat, attraction and repulsion represent general ideas, not material things. They are brief descriptions of various actions, such as particles exchanging motion. They do not represent the actors.

Here's an illustration. We start with a verb, "the particles of a substance are activated (heated)" and we observe this activity and describe it with a noun, "the action (heat) of the particles in the substance".

When we feel something that is hot we actually feel the particle activity that is transferred to our hand. In other words heat is a name which describes the action of the particles. Heat has no separate existence.

In coining names such as energy, heat and pressure we use our power of imagination to create phantom forms to assist our communication. They make fascinating servants but dreadful masters. Let them have the keys to our common sense and they will lock us out.

We could discard them all in favour of a simple concept of the force of impact (pressure). But we love our precious imagination and our servants. Can anyone who has enjoyed *Alice's Adventures in Wonderland* doubt that we get the best of both worlds when we know the difference between fact and fantasy?

We may have the best of all worlds provided we retain the last word on where our navigator (our imagination) takes us.

## Physical things

The smallest material bits are indivisible, incompressible and indestructible, they occupy space exclusively in three dimensions. They are always in motion and there are tons of them, so we will call them motons. They provide all the action and are the engine of the universe. Collectively we will call them mota.

Motons are the primary building blocks of all matter, including the little objects we call particles. Material objects are built up in several different ways or stages:

- firstly as a loose collection of individual bits, which is what the original chaotic universe could have been and how most of it still exists as mota
- secondly as simple aggregates to form small objects such as photons, electrons and other primitive particles some of which we already know
- thirdly as cohesive clusters of primitive particles to form the objects we call atoms, and so on to all the complex cooperative clusters and objects to which we apply the term, physical things.

Motons occupy space exclusively, so whenever they touch and bump one another they have to change their motion, however so minutely or drastically, and we can say that they exchange some motion. This is the essence of the law that for every action there is an equal and opposite re-action. The contact is the cause of events and the exchange of motion the actual event.

To achieve a re-action, motons must press against each other and it is this pressure (the force of impact which has no separate existence) that drives the universe. We call it pressure for simplicity.

Motons are the basic units of mass, therefore all objects could be listed according to their mass which is simply the number of motons they contain. However, mass is not the only thing that distinguishes one object from another. The shapes and other characteristics of physical things depend on the way their parts are put together.



## Attributes

We have already introduced several non-mass things such as motion, action, pressure and events. Each one is related to at least two particular particles and can't exist otherwise, therefore they exist solely in a relative way — they relate one particle to another — they are, precisely, relationships between things. We explain later that all things other than particles, are attributes comprised of the relationships between particles — which is the only way in which they can exist.

The differences between relationships are the differences in the way particles directly or indirectly touch one another, that is, how the force (pressure) of the contact between the particles affects their motion.

So we now have two things which are absolutely different because they exist in different ways; particles and relationships, and we can sort out everything in the universe under these two names, by the way they exist. We will know some important facts about every thing we can classify as being either a particle or a non-particle relative. But tread warily, because that apparently simple exercise has seen many a brilliant intellect lose direction down the garden path, and become hopelessly lost.

To sum up: relationships do not occupy space exclusively and can't be touched. All attributes such as motion, size, shape, colour, taste, number and action are relative.

Finally, relative things can not exist independently or in a general way, they exist only as specific things, for example, the space of the universe, the time between two events, or a speed between two points. The idea that non-specific relatives, such as distance, speed, energy and time

actually exist independently, is nonsense. Consequently, Einstein's Realism is not credible, it is superstition.

But don't let that put you off having fun with superstition. Our imagination loves a bit of nonsense, and Lewis Carroll decorated a delightful wonderland with it. Imagine, for example that the general idea "dog" actually exists, that there is an invisible dog substance all around us. Then, if you know the trick, you can just reach out and grab some dog stuff and make a dog.

Well, what else could dogs and little boys be made of, but all their attributes? Bishop Berkeley said they were, and he was made of bishop stuff. Even work can be fun, but if we don't learn from Alice, who always came back to reality at real tea time, Lewis Carroll's red queen might lock us in an ivory tower, as she did with Einstein and is doing with Stephen Hawking.

## Spatial communication

Space is merely another name for size; it has no separate existence of its own, it is our name for the extension of something. When we try to think of space beyond the universe we are really trying to think of an extra bit of universe and the space beyond is the size of that extra bit of universe.

Just as it does not make sense to have a size hanging around without belonging to something, so it is unreal to have a space which is not the size of something. It is only in Wonderland that we can pretend that space is an extension or size that can exist by itself. Space does not make sense by itself, it must always be the space of something. The greatest possible space is the size of the universe.

Space and size are names we commonly give to the collection of all the distances between all the points contained in something. Distance exists only between two points (which is another name for position or location), it relates one position to another. Distance is the space or size of the separation.

Spatial relationships make up the shape and character of physical objects, and the most important of these is the impedance of the object, that is, how the arrangement of the bits of an object permit, obstruct or reflect the passage of other particles through that object. For instance a pipe shape allows passage in two directions but not in other directions, a semi-conductor allows passage in one direction, and an insulator resists all passage. The most universal example is motion impedance to other motions which produces the force of gravity, nuclear forces and electromagnetism.

Spatial communication is absolutely different in kind from the communicators (particles) themselves, because it cannot occupy space exclusively. That is so, because motion, and therefore communication, can exist only between things. It can not exist independently, or as an inherent part of any single particle, but it does occur within objects such as atoms, that is, between the constituent particles.

Because communication (exchange of motion) requires motions to press against each other, we might imagine that there is a force (called energy or pressure) carrying the message from one particle to the other. But that would be wrong, the force of impact (which we will call pressure instead of energy) does not exist in a material manner, it is a name, a convenient description of the action.

## Temporal communication

Time, like space, is our name for a relationship between things, and it can have no existence of its own. A temporal relationship is the period that links two events such as a beginning and an end or a cause and an effect.

An event is the change of motion that occurs when objects touch and react to one another, and every event has its own registration in the sequence of events which constitutes universal time. A time is the period that separates one event from another. When we say an event occurred at a particular point in time we are really referring to the period of the event from its beginning to its end.

Observations are events in their own right. They must be subsequent to the observed event and therefore cannot affect the observed event.

Every observation is an event (impact) in its own right and it is necessarily subsequent to the observed event. Likewise, every observation of an observation of an event is an event (impact) in its own right with a universal time registration which is necessarily subsequent to the original observation. (The problem with the Theory of Relativity is that it confuses observations with the observed events.)

There is precisely one universal time registration for each event, therefore any perceived differences in the time of an event is a human error, probably due to confusing the time of an observation with the time of the observed event. Every observer will have a different view of the world, which will appear to be different from different positions at different times. Observers may be confused, but universal time is infallible.

The fundamental unit of communication, and therefore of events, is the contact of two motions. But there is another kind of communication. It is the influence of ideas.

## Conceptual communication

There is a special kind of relationship. Not the one between particles which occupy space exclusively, but the relationship between attributes which do not occupy space exclusively, that is, the comparison of attributes and events. For instance, one distance with another, one colour, taste, speed, weight etc. with another. These are in, or of, our minds, and we call them thoughts. They may be simple or complex, but they do not occupy space exclusively and we can't touch them.

We know that thoughts exist and that they exist primarily in our minds. But they may also be said to exist in other places such as the paragraphs of this page. What we question is, in what manner and form do our thoughts exist? We get some idea from comparison with the manner in which other things exist.

Thinking, whatever else it may be, consists of complex relationships and it is necessarily religious by nature. It is religious because thoughts are relative (an isolated thought would be incomprehensible) and at least one in a collection of thoughts must be given the first value, the bench mark by which other thoughts are measured and valued.

These first assumptions are acts of faith, beliefs which are self-perpetuating because calculations using their assumed values tend to confirm their authority. Also, because there are no prior bench marks such beliefs can't be shown to be either true or false.

Disciplined thinking is the methodical arrangement of thought values stemming from an assumed bench mark. The more rigorous the discipline the more entrenched the base value becomes. In this respect there is no distinction between professors of science and priests. Part of their thinking is based in faith. The trick is to hide the basic assumption. The role of science is not to stifle the imagination but to give it direction by distinguishing images from realisation.

The religious nature of our thinking, and our ignorance and genetic programming, have encouraged us to populate our worlds with gods, spirits and mysterious forces. We are inclined to smile at the superstitions of primitive people but we have not banished our own superstitions. Instead we have rehabilitated the mythical forces and spirits in robes and roles that render them inconspicuous in modern society. Superstitions are still alive and well, psychologically driving individuals, organisations and nations.

When superstitions have an official seal of approval they become part of the environment which has produced and seduced some of our most disciplined thinkers. The process begins with some event to stimulate the imagination followed by disregard for the distinction between images and realisation of the images. From then on recurrence of similar events confirms the image and the official seal gives it the status of reality.

That's how the attraction of gravity and other forces got their status.

Don't ask whether computers think like us. Ask whether we think like computers. The answer is yes if one allows that reacting to programming is thinking which is what we mostly do but which is not what we really mean by thinking. Try really thinking what kind of

concept could have led the most powerful scholars to falsely maintain for thousands of years that the universe had been created for their benefit. That they were the focus of the universe, that the sun patrolled their estate, and that they could justify and glorify brutalities enacted to uphold such a concept.

Now try to match that doctrinal concept with the central idea of Relativity, that every observer (scholar) is the focus of the universe and that wherever man goes he takes the centre of the universe with him. Is Relativity, that Dark Doctrine, that superstition of the Dark Ages, revisited?

The thinking of it is as painful as the answer itself. We aim to ease the pain.

### Volitional communication

Volition (willpower, self determination) is the capacity of a mind or system to exercise a choice of behaviour. In other words, the ability of ideas to inter-act with one another, and to choose between alternative possible changes in the behaviour of physical things. Without volition there would be no point in having a mind — we could not realise our ideas.

As we will see later, we can get rid of all the phantom forces of attraction and repulsion, but we cannot eliminate will power. It is our one remaining spirit. It appears to be an *in house* authority (there is no real evidence of mental telepathy) and, with some imagination, will power could be a feature of all organisations, however ineffective such authority may be.

That could mean (with a little stretch of the imagination) there could be a kind of esprit de corps associated with all organisations, from atoms to the universe, somewhat along the lines of magnetic fields. In the universal form it would be the mind of the whole world of motons, a simple approximation of the concept of “one world, one God,” with humans and other bodies exercising a local willpower. Such a world distribution of will power could be envisaged as an administrative system with a clearly limited delegation of authority and responsibility. That’s a simple imaginary universe in which we could escape ultimate responsibility.

The real universe appears to be far more complex and demanding.

### A general view

Since the beginning of our universal time motons have been coalescing to form atoms and stars and other objects and a small proportion of motons are now embodied in observable objects. The bulk of matter in the universe probably consists of free motons, they are constant space travellers, and they constitute an active mota which generates a massive universal pressure that performs the functions of gravity which are traditionally attributed to attraction, and they act as a carrier for light waves. Further on we will see how the concept of mota pressure provides an explanation of all particle behaviour in the universe — a universal system of behaviour.

A list of every kind of object according to the number of motons they contain would not be entirely definitive because in large aggregations some motons may come and go without affecting the character of the group. But every kind of particle, including photons and electrons, would be included and classified.

It would be a long list and this explains the proliferation of newly discovered particles — with many more to come.

Some clusters of motons are more stable than others because of the motions of the motons and the way they fit together. For instance, a complete sphere requires a specific number of motons to fully occupy its surface, and the total quantity for empty spheres is different from that for full spheres. Some clusters associate naturally with others to form the stable aggregations which we know as atoms and molecules.

A basic illustration is the hydrogen atom which is composed of a small electron and a relatively large proton. The imbalance of size causes an orbital wobble and the atom is therefore unstable particularly in company when it bumps other atoms. In contrast the helium atom has the balance of two electrons and does not wobble, so it can associate smoothly with other atoms and therefore have stable relationships.

One can think of motons as members of a community, and imagine how the characters of both the individual and the community vary according to the rules and requirements of the organisation. A peaceful village growing and assembling things, is different from an army in battle destroying things, and so it is with motons.

That is the world we have today. It is a world that has been enriched with spirits, which we call forces, as part of our communication but they don't exist in a physical way. All of our so-called forces of nature exist only in our imagination.

Just as the earth has a magnetic field, so the universal mass and motion of elementary particles may have a universal magnetic field which influences universal behaviour with some sort of volition. We don't

know about that. What we can say is that according to rigorous common sense analysis, we do know, at least to some extent, that the only things that exist in the world are motons and their relationships and volition. We can explain without recourse to mythical forces, all things — except volition (will power).

We can imagine how motons find mutual protection in unity, and how individuals may be cast in or cast out of communities because of their shape and or motion, but we have not explained how individuals may choose how they behave (or misbehave).

In addition to the mystery of where the first thing came from we are left with the fundamental questions of life. Can individual particles change their characteristics, do they have a choice of roles, is willpower a product of co-operation, and why is it so? Did pigs grow trotters instead of wings because they wished hard enough?

It really is difficult to imagine how survival of the fittest could produce such a diversity of complex living organisms simply by mathematical probability. It is much easier to imagine how wishing has made it so.

How can we be confident that we have just described our world? That is also what this story is about. How common sense sorts fact from fiction and structures our intelligence so that we may know both the real world and wonderland and be able to distinguish one from the other and enjoy both.

## 5. Wandering in Wonderland

### *Albert's pet family*

Einstein in Wonderland fell in love, not with Alice,  
But with the Hatter's Clock that could control Time,  
The Cat which could materialise from empty Space,  
The Grin which could exist without a Grinner,  
Amity who could make words mean anything,  
Including a Thing and not a Thing simultaneously.  
He gathered them as one fantastic Family,  
And named it the *General Theory of Relativity*.

Abstract means separate, especially from matter. That's what fairy land and mathematical concepts have in common, they exist only in the mind and in an absolutely different way from physical reality. Disney Land has a single physical existence but there are countless mental images of it. Commonsense allows us to enjoy both without confusion, but the Theory of Relativity discards commonsense. In this chapter we take a light hearted look at the mischief that disregard generates for Einstein and Hawking.



FIGURE 3: ALBERT'S PET FAMILY



## Return or one-way ticket

A century ago Lewis Carroll wrote fairy tales, including *Alice's Adventures in Wonderland*, ostensibly for his children. But in company with his other literary works they are powerful commentaries on our vulnerability to illogical thinking and on our difficulties in distinguishing fact from fiction.

When Alice first followed a white rabbit into the nether world, of course it was not really Alice, but Lewis Carroll, an eminent mathematician, casting off the constraints of reality and flying into a fantasy. In telling us about his adventures he invites us to play the role of Alice, or any of the other characters for that matter, but he always shows us the way back to reality.

Is wonderland another world, are there other worlds, or is it all one world? If we are told with authority, that there is but one world with no boundaries between fact and fiction, would we accept it as gospel? That is, in effect, what Stephen Hawking, in his role as anointed Master of the Universe, has told us.

One of our rewards for employing common sense is a joyful comprehension of Hawking's space adventures, which share some remarkable features with the fanciful travels of Lewis Carroll. Carroll's Alice consumes titbits to change size to match wonderland. Likewise Hawking's Astronaut runs into gravity to be stretched like spaghetti or compacted to match places without size.

But the significant difference between the two authors is that whereas Carroll guides us through bunny burrows to a lovable world and then leads us back to reality, Hawking tempts us through worm holes to an

abyss of no return and leaves us there. Our enjoyment would be short lived if we really allowed him to take us in.

So the first step is to assure ourselves that we can distinguish between real things and dream things that appear to be real but are not. Otherwise we will not know when we are being taken for a ride or whether we have returned to earth.

The properties of physical things are common to our various senses and, or, common to the senses of others. It is this commonality of perception that enables us to distinguish fact from fiction.

Just for fun, try confusing the Alice of "Stephen Carroll" with the astronaut of "Lewis Hawking". Alice falls through space into a warren and is stretched out by gravity, like spaghetti, to pass through doors into another world. The astronaut falls through space into a black hole and is reshaped, by eating a tablet, to pass through a worm hole (that's official jargon) to emerge in another region.

Surely Einstein and Hawking would never intentionally destroy our most threatened precious possession — our common sense. They are, themselves, debilitated victims of their fantasies and know not the damage they cause.

Who are we, what are our ideas and how can we share our thoughts and have fun together? Let's meet our famous friends and their fantastic ideas. And fear not, for we have guaranteed return fares.

## Meet Carroll, Einstein, Hawking

Come now with us, for we are in the jolly company of three of history's master mathematicians and friendly fantasts, Lewis, Albert and Stephen.

### **Hullo to Lewis Carroll (real name Dodgson, Charles L., 1832–1898)**

The world's most innovative teacher of language, logic and maths. He created Alice and a wonderland to enhance, not displace, our real world. He left us in no doubt that his ideas of a back to front world, Alice not growing older, and the Mad Hatter controlling time with an old clock, are pure fantasy. He engineered, with logical precision, an intellectual platform from which his fancies flew, and he warmed it with the homely comfort of sunlit woodlands to ensure that Alice would always want to return to reality.

### **Hullo to Albert Einstein (1879–1955)**

Einstein was aged seventeen when Lewis Carroll published his final edition of *Alice's Adventures in Wonderland*. In 1905, Einstein was working in a patents office devoting his energy into reflecting on the speed of light, when he slipped through the looking glass. He never found his way back, partly because every thing was back-to-front and the more he headed for the light of day the further he got from it. But the real reason was that Einstein fell in love, not with Alice, but with the clock that could control time.

The patents office Einstein worked in was a warehouse for the produce of the farmers of the mind, a regimented place where thoughts are numbered and billeted with military discipline. There was the thrill of intellectual battle and the fame of heroes, but for

Albert there was no warm glow of returning home — there was no soft landing in his real world. With a time clock under one arm his flights of fancy ended with a thud, thud, thud, echoing the trauma of ruthless marching boots. The reality of war was to haunt him forever — except in wonderland.

### **Hullo to Stephen Hawking**

Born in 1942 with bombs of the Second World War rattling his cradle, gifted with brilliance in a cruel and complex world, no wonder he took wings to fly the frontiers of fantasy with his heroes and fellow intellectuals. We've already questioned the worth of his work, *A Brief History of Time*, but welcome to him, for he has truly earned a place in Wonderland. Whereas Einstein invented a way to play God, Hawking has invented his own universe which has no boundaries, wherein he doesn't play at being God, he is God. But now we go back to his mentor.

Einstein's fancies did not fly with fashion, he wore no socks and laughed about it, but he sometimes wore a whimsical smile. Perhaps he was contemplating the heights to which his brilliant intellect might have soared in the real world in which he had made his brilliant debut as a teacher of the force of impact. Perhaps he was thinking of the emperor who wore no clothes because he was foolish.

The most likely answer is that Einstein was trying to work out how many times one has to wear Socks before they interchange with Time. That Woollen Socks can do so is *provable* by his equation and his Theory which says energy, material, space and time are all interchangeable and the changing is done according to his formula

## Sesame! Einstein opens Wonderland

As already indicated, Einstein's view of the universe was a product of his time. The intellectual environment was reminiscent of the squabbly times of Babylon. But instead of a tower of Babel communicating with heaven, Einstein's times had radio and the power of babble spanning the seven seas. The genie of the old lamp of Baghdad shone light on Einstein and liberated him from the constraints of reality. Sesame! the way to wonderland was open. So, with indecent haste, Theoretical Physics anointed the new genius and bathed in his reflected glory.

The analogy of the genie of the lamp is appropriate on several counts. Of course there is the linguistic link between genie and energy. Also Einstein's famous iconic equation carries mystical links between Einstein, energy and genius. But more importantly, Einstein saw Energy as the Genie that lived in an atomic particle which if rubbed the right way would emerge to perform incredible tasks. He also saw a problem in getting the genie back in the lamp and under control. What he failed to see was the amazing match between his Energy and the Genie of the Arabian fables. And most important of all is the total failure of Einstein and his peers to recognise that the Genie of the lamp and the particle are both mythical.

The particle is powerful because of its momentum (mass and motion), not because it is the home of a genie. The momentum of mass particles in atoms is sufficient in itself and does not required the embroidery of fictitious forces.

But fables also generate a power of their own, and the ghost forces of the past reflected the light of Einstein's fame and, like all good

reflections, presented a reversed image of the universe. Energy, the father of all phantoms, with his servant Entropy, were portrayed moving in reverse direction.

Instead of the reality of a chaotic newborn universe progressing from discord to harmony, from the disorder of birth towards the solemn orderliness of death, the ghosts reflected the world collapsing inevitably from order to disorder. Instead of facing reality, Einstein and his contemporaries turned instinctively backwards. The more they sought the light of day, the more they caught the reflections from their own illusions. They were blinded by the baffling light of genius but they were happy to be in wonderland.

Einstein believed that motion was equivalent to mass and that as a particle reached the speed of light it would increase its mass and become as big as the universe. To maintain this illusion Einstein had to discard the distinctions between objects and space and time, and this meant his whole world was illusory.

But Einstein had his faith in mathematics and a number, and his genius built him a universe based on that number. The number was 186,000 miles per second. It was not really a speed although it intentionally matched the propagation speed of light, it was only a number. That number when multiplied produced Einstein's universe and, conversely, when divided, annihilated his universe.

Einstein had invented a way to play God.

## 6. Space and time and motions

Only mass is touchable, but two relatives are, like mass, measurable. They are Space and Time. The three things make up our universe. We know not their beginnings nor their ends and we are only now getting to know them by learning their differences.

### Absolute position

The Theory of Relativity obliterates the distinction between events and the observation of those events. Because one cannot give an event an absolute position in space Theorists claim there is no absolute position. The following quotation from page 18 of Stephen Hawking's book illustrates the problem.

Newton was very worried by this lack of absolute position, or absolute space as it was called, because it did not accord with his idea of an absolute God. In fact, he refused to accept lack of absolute space, even though it was implied by his laws.

Who is right? This time I back Newton against Einstein and Hawking.

### A fixed point to measure the Universe

In the beginning, the universe, by definition, must have had a centre, which was, also by definition, the centre of mass and gravity. Now, according to the laws of physics, every action has an equal and opposite re-action which means the mass must have spread out equally

in opposite directions without moving the centre. It therefore follows that the centre of the universe must always have been, and must always be, in the same position, it is absolute, constant, fixed.

A fixed centre point means that all distances measured from that centre are absolute, and, because space is merely all the distances between all the points, space measured from the centre, is also absolute. Consequently, universal distance and space are absolute quantities, and the measurements of any thing related thereto, are absolute measurements. The simple fact that we have not yet located the centre of the universe indicates an absence of knowledge, not an absence of a centre as Hawking presumes.

So there we have it. Stephen Hawking has misinterpreted Newton's work. Newton gave us, perhaps unwittingly because he was a master miser of wit and humour, a fixed point — a pivot for the world and for our thoughts.

### Absolute time

To illustrate the Theory's position on the lack of absolute time we will refer to page 22 of Hawking's book. Hawking claims that observers do not agree on distances travelled by light or on time taken to travel but they must agree on the speed of light therefore the Theory puts an end to the idea of absolute time which was held by both Aristotle and Newton.

That false conclusion follows from the error of substituting observations of an event for the event itself. Clearly observations which are subsequent events in their own right may differ but they cannot affect the event which is registered indelibly in real physical history. Once one decides time is not absolute, which means it is changeable, it is only a short step to fudging time, and that's what happens. When cornered with problems with the constancy of the speed of light the Theorists claim that time, not light, changes its pace.

We will back absolute time with both Aristotle and Newton against Einstein.

## A beginning to time the Universe

Time is the sequence relationship between events. A time is the period between two, and only two, events. It has no mass, can not occupy space exclusively, and it can not be affected by the speed of particles, light waves or the aberration of clocks.

Every fixed period must have precisely two points, a beginning and an end. There is no logical problem in fixing the beginning of a universal period. The Big Bang (if there were such a thing) or any universal event will do. Likewise any specific event, such as midnight in Canberra, 31 December 1999, will do for the end of the period.

And there it is, the absolute universal time from the Big Bang to an event at the end of the twentieth century. That is, one complete universal series of events which is unchangeable. None of the events can get out of place or change its address. In the meantime, solar time, adapted for local circumstances, will not miss a beat however we move.

This is a good time to get rid of a few more ambiguities.

*Dimension* is the extent (quantity) of a thing. It is a measure of direction, but is sometimes ambiguously used as a "direction" in its own right. There are only three possible mutually perpendicular directions and the dimensions of these determine the volume of things. The dimensions have to apply simultaneously (at precisely the same time). It would be impossible to slowly measure the size of an atomic bomb blast. It is therefore nonsense to think of time as an extra direction in space, or as a dimension of mass. Time is a dimension of activity, not of the actor.

*Motion* is the change of distance between two points. A sequence of motions can produce various forms of motion, spin, orbit, spiral, wobble, vibration, but the essence of each motion is change in distance. Motion has no separate existence of its own, cannot be part of individual things and cannot occupy space exclusively. It certainly is not mass in another form.

*Heat* is the chaotic exchange of motion between things. Heat is not simply the speed, or harmonious transfer of motion between two things, it is the disruptive change of motion between bits within the objects. Every hot thing radiates heat which is another way of saying hot objects propagate mota waves. So heat is agitated particle motion which is transmittable by mota wave and by atoms.

## The mota is a mass of motons

Show us some photons and we will show you some mota. That's easy because both photons and the mota are composed of motons — the primary particles of all bodies. At the same time we will show you the

particles (mota) that generate the pressure we call gravity, and the carrier of light waves.

The old concept of stationary “ether” was inadequate and has been abandoned.

The new concept portrays a mota comprising highly mobile motons that generate a universal pressure which functions as gravity. The mota forms spheres akin to magnetic fields about celestial bodies and it carries light waves.

The Theory of Relativity scorns the reality of the “ether”, claiming it cannot be observed. But neither has energy nor any of the four forces on which the Theory of Relativity is founded, ever been observed. The forces can’t be seen because they are invented phantoms.

The phenomena falsely attributed to mysterious forces is simply the activity of particles when they bump one another. That means that despite extravagant experiments in search of gravity, particularly since Newton invented the phantom of attraction, the chance of recognising gravity is virtually nil so long as the search is for an attractive force instead of the pressure waves of the mota.

There is a certain humour about the search for gravity because light is part of the pressure force of gravity, and therefore some gravity is right before our eyes.

Whether we see the mota is a moot matter. Actually we sense the mota more directly than we sense objects. When we see an object we do not sense the object directly — we receive a description of the object in the form of light waves which are impulses in the mota. So, our contact is with the messenger (just as we may meet the postman) and, in that

way we “see” the mota in the form of the message which describes the object.

More precisely it is the pressure of mota waves which actually make contact and allow us to sense (see) an object. Likewise, when sun rays strike our skin, it is the mota pulses that strike our skin and initiate our tactile sensations of sun radiation. Also, when we listen to the radio, we indirectly hear mota waves scaled down in frequency to audio frequency. In order to see mota particles objectively, that is indirectly as we see other objects, we would need an ability to communicate with even smaller particles as messengers describing the indivisible motons.

We can speculate about ultimate particles that are smaller than motons, but that is stretching the imagination. It could be that the ultimate particles, which have the ability to pass apparently unhindered through the earth, are simply motons stripped of their fluctuations and wave forms. In other words, the mota gives up its messages (its fluctuations) which we call pulse radiation, and the individual particles continue unhindered on their way.

That would imply that there are two elementary forms of mota: independent bits freely moving in all directions, and fleeting associations of bits pushed together in wave formation by mass particles. In this sense, the clustering of bits constitutes a temporary particle which would have characteristics like those of a photons. A further clustering could produce larger particles such as electrons and positrons.

Instead of recognising that what we sense is not the actual event, but the messenger from the event, the Einstein falsely presents the



messenger as the sender of the message. When Einstein claimed that an event, such as a bouncing ball, when observed from the station was different for an observer on a moving train, he confused the two observations of the event with the event itself.

That elementary confusion eventually causes the Theory of Relativity to abandon the reality of universal time and distance.

We can not see a picture of a moton because there is no brush small enough to paint such a picture. There are no particles smaller than the ultimate particles comprising the mota; they are our paint and our brush. But more than that, the mota is composed of the same primary particles that coalesce to form all the real substance of the world.

In other words, all solid objects in the universe are compact masses of motons. Therefore whoever scorns the reality of the carrier of light waves scorns all reality, and that is what Einstein did — he chose to fly with phantom forces. His speed is superstition.

## 7. How the universe works

About four hundred years ago, Johan Kepler and Galileo Galilei struggled valiantly to replace the authorised idea of the world with a commonsense description of the solar system. Today we put aside the authorised versions of the contents and operation of the universe and introduce a commonsense explanation of the kinds of things that exist in the universe and how they behave.

This chapter provides an extension of the concepts of physical things and their relationships introduced in earlier chapters. The intention here is to get rid of the superstition that the universe is driven by mysterious attractive forces and to illustrate how the momentum of motions drives all the engines of our universe.

### The engine that drives the universe

The most elementary engine possible is two particles orbiting each other. Such an engine is fuelled by the impact of other particles and we will illustrate how it operates as a difference in pressure. The same principle applies to orbiting celestial bodies such as the moon and earth, to solar systems, and to galaxies.

All engine power is basically a difference in pressure and it is this principle that drives all engines including atomic reactors, jet engines, animal hearts, and the celestial engines mentioned above.

### How mass exists and carries light

Any thing can exist, even the mere thought of existence exists, but things exist in different ways. Only a universe, by definition, can exist absolutely alone, for anything else it would be either another universe or nonsense. Even a solitary thought (or a God) would make no sense. If there were things which were absolutely separate or for any reason whatsoever, never in communication, they would also be nonsense. So, sensibly, existence requires that there be at least two things which touch each other, directly or indirectly; and to “touch” means to cause some re-action. Existence requires action and reaction caused by momentum.

We describe every thing that can be touched, as: real, physical, substantial, material, or any other name which means it occupies space exclusively. The scientific name is mass, which really means a lot of mass particles. Each bit must occupy space exclusively, and be touchable in its own right, however tiny.

That means, by definition, that the only things that can touch and thereby cause pressure (and be sensible) are mass particles. From this we can conclude that one way of existing is to exist like mass. Of course, only mass particles can do that and they can exist separately or in unions (as elements or as compounds).

In order to avoid confusion, let us specify now that “particle” means a bit of mass, and therefore, a bit of any other thing has to be given some

other name. Logically there are two ways of existing; as particles or as non-particles. A collision of particles causes pressure, and a change of the motion between them. That action would constitute the most elementary form of event. In fact the sole initial cause of every event is a meeting of particles.

So far as we know, mass (elementary particles) can be neither created nor destroyed (at least by any human action), and that means that actions, reactions and interactions, which change the properties of substances, leave unchanged the total amount of mass in the universe.

The main thrust of the Theory of Relativity is to destroy this foundation of reality.

Here is an example, a postulate from *Encyclopedia of Science and Technology*, vol. 4, p. 340:

The special theory of relativity has shown, however, that the mass of a body changes as the energy of the body changes. Such changes in mass are too small to be detected except in subatomic phenomena. Furthermore, matter may be created, for instance, by the materialisation of a photon into an electron-positron pair; or it may be destroyed, by the annihilation of this pair of elementary particles to produce a pair of photons.

So man (at least in Einstein's laboratory) supposedly, can now create and destroy mass, the substance of the universe. But so far no one has actually seen any one of these particles and no one can be completely sure of what happens to them. In chapter 3. we offered an a commonsense explanation superseding the absurd claim that mass increases with speed. The above claims are similar.

Relativity doesn't bother to explain what it means by energy but analyses shows it can only mean activity. In other words Relativity claims that action interchanges with mass (the actor).

In contrast our view is that the mota is comprised of primary particles, and when these are vibrated at the immense speed of light frequencies, the compression, on impact, combines the primary particles into compounds such as photons, electrons and positrons. There is neither creation nor annihilation, merely rearrangement of the motons that constitute the particles.

If one jets humid air on to a piece of cold metal one can expect to get a water particle spinning clockwise and another spinning anti clockwise — a particle and an anti particle. But that is not creating mass, it is merely converting invisible steam particles to a visible form which may change to ice or back to steam. Photons and other particles behave likewise.

Our description of the universe, in contrast with the theory of relativity, does not require the creation of mass from energy or the annihilation of mass or photons. In fact it does not require a phantom energy at all. It certainly does not require the sacrifice of real time and distance. The universal engine is driven by the force (pressure) of impacting particles without the help of mysterious forces.

We do not know, directly, the primary particles of the mota (motons). The bits may exist in a variety of shapes and sizes, but they are essentially a touchable substance, and their density and mass is such that when it is vibrated, the vibrations are propagated at the departure speed of light. The production of light is well expressed in terms of moton momentum and impact, because that is what it is.

If particles in an object are speeded up (by heating, electric charge etc.) they transfer pulse and vibration motion to the mota, which carries the motion to receiving objects. If the receiving objects are our eyes we see the source object.

In summary, particles are the only things that occupy space exclusively. All things we can observe (see, hear, smell, taste or feel) are characteristics (attributes) of material things which are composed of particles, but the actual attributes are comprised of actions and motions between particles and are therefore relative. For instance we can feel the heat (motion) or heaviness (pressure) of a stone which we touch, but we can't touch, in the sense of pushing, the heat or the heaviness.

### Gravity is pressure, not attraction

The purpose here is to offer a concept of gravity in which the traditional idea of an attractive ghost pulling all things together without touching any of them is replaced by the idea of things being pushed together by particle bombardment.

We do not know how our universe began, but we believe that it has been rapidly expanding and is already immeasurably large. From this we can imagine that, millions of years ago, the universe collapsed and the impetus of the compacting universal mass would have generated such immense pressure and heat at the centre that it would have been even more chaotic and primitive than our sun.

We can also imagine that the pressure would eventually overcome the inertia and commence a series of universal explosions alternating with re-active implosions of primitive bits of mass with immense speed, and

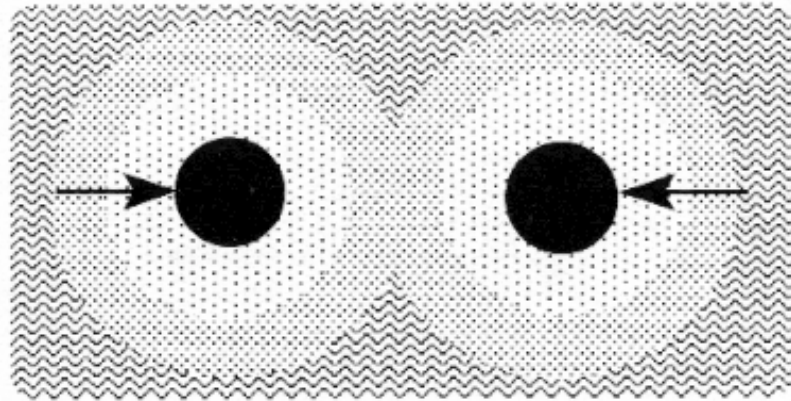
with numerous secondary explosions and that in the chaos the bits would collide, change direction and coalesce etc.

Initially the conditions would be totally chaotic, but the heavier bits (particles like protons and neutrons), would set up a general pattern of expansion. The collisions would continue and thereby generate more pressure, in a general state of flux. Glancing collisions would also cause particles to spin, and whereas two particles with the same spin, say clockwise, will clash and repel each other, a matched pair of opposite spinning particles can associate closely like meshing cogs.

If you have ever been with a partner in an absolutely packed crowd you may recall being crushed together and your partner shielding you. That's what happens to matched particles in a madding crowd of universal flux: they are pushed together. Consequently, because two unlike spinning pairs are also compatible, there will be a general tendency for particles to cluster and to eventually form stellar bodies, just as we witness today.

Figure 4 illustrates how the mutual shielding of particles or stellar bodies generates a pressure differential which pushes the participants together.

**FIGURE 4: UNIVERSAL PRESSURE PUSHES OBJECTS TOWARD EACH OTHER**



*In figure 4, the wave lines represent the mota momentum some of which is absorbed by the two circular mass objects so that there is more motion going in than coming out. The arrows represent the directions of net difference in momentum (pressure) and the shaded areas between the objects represent the various degrees of shielding and relatively lower pressure.*

Although the primary particles which carry light waves are small, their high speed generates the forces we know as gravity and nuclear power.

Current estimates of the mass in the universe suggest that only 1% is observable, another 9% is dark matter. 90% is unaccounted for but it is required to match calculations of gravity. That 90% of the world mass could still be in the form of elementary particles, the carrier of radiation. Because their main feature is motion, we have called them motons and collectively we call them mota.

The concept of a *stationary ether* was prematurely abandoned because it did not accord with evidence that light on earth radiates at the same speed in all directions. Einstein, in a mood of abandonment, also discarded absolute space and time as well as the idea of a carrier of light waves.

Here is an alternative that does not require the universal facts to be abandoned simply because light waves radiate at a constant speed on earth.

Magnetic fields are comprised of the same stuff as light radiation (photons) and Michael Faraday, born two centuries ago, demonstrated that they interact. Given that enlighten the concept of the ether could have been remodelled to fit the facts and accommodate the velocities of light.

If the local *ether* (primitive idea of mota) rotates with the earth like the atmosphere or like an electromagnetic field and acts as a medium, the apparent problem of equal speed of light in all directions is solved immediately.

If we assume that the ether consists, not of stationary matter as once presumed, but of mobile matter, and also that the ether is expanding in general harmony with the earth, the possibilities are then changed and the ether becomes indispensable.

In order to pursue these concepts we can start with the facts that only mass particles can collide and create pressure and thereby initiate events, and that space is crowded with mass radiated in all directions at all relative speeds. Also, common sense shows us that there are

forces called inertia (momentum) and gravity determining the orbital motion of objects such as the sun and the earth.

Our observations indicate that, instead of a mysterious attraction between particles, constant collision generates pressure which pushes particles together.

This means that the mota is an active mass of primary particles of variable density and pressure which is expanding and moving, on average, generally in harmony with stellar bodies. It means we have a primary raw material (mota) from which real bodies can be made and to which such bodies may be returned.

### Newton mistook pushing as pulling

If Isaac Newton had watched an apple tree while steady rain was falling on and through it, he could have made four observations from which he could have concluded that the force of gravity is pressure and not attraction.

First, the rain tends to push the leaves and apples earthward.

Second, even though rain may be falling in the opposite direction on the other side of the earth, the earth shields the tree from such rain and there is no rain to push the leaves and apples away from earth.

Third, the higher leaves act as shields to protect the lower ones from the full force of the rain and as a consequence there is a force pushing the higher leaves and the lower leaves together.

Fourth, every bit of the complex motion, including growth, of every tree is, on close analysis, caused by the impact of rain or wind or some other pressure.

Newton might then have imagined, as we can now do, a virtually infinite quantity of cosmic particles raining on earth from all directions and mostly passing through earth, just as some neutrino particles may do. The cosmic particles will lose a fraction of their quantity and impetus in passing through the earth, and will emerge and continue on their way with less impetus than the incoming particles.

The effect of the particles on the apple tree will be similar to the effect of the rain, and the superior impetus of the incoming particles over the out going particles will tend to push apples and every other object earthward.

The overall effect will be just like gravity because that is what it is — but it is driven by pressure and there is no need of a mysterious force of attraction. Instead of calling the particles gravitons, which signifies a mysterious power to attract things by punching them, we will recognise that they are basically the same elementary particles of which all objects are made. They are our old friends, the motons just passing through with a familiar nudge as they go.

The test of a theory is how well it explains things. On the one hand we have the official doctrine of attraction which has now produced a string theory, as described by Stephen Hawking (p. 171), whereby all particles are tied to all other particles by elastic strings each of which has no real thickness but can pull billions of tons.



That idea, which is already beyond the realms of common sense, is leading to even more incomprehensible mathematics and heterotic strings. Acceptance of Relativity explanations depends solely on faith in mathematics.

On the other hand we have our new explanation that particles are pushed together and that the power of the push is provided by particles colliding at high speeds. Acceptance of our explanation is a matter for common sense.

There is little doubt that if Newton had debated with his great intellectual contemporary, Gottfried Leibnitz, instead of destroying him, they would have produced a theory of the world being driven by differences in pressure.

## 8. The speeds of light

One of the most entrenched myths is the instinctive belief that objects possess motion and speed. It is confirmed by frequent misinterpretation of observations (projectiles appear to have a speed) and by the looseness of language (we say that thing has a high speed). Einstein fastened on to this mythical non-relative speed as the core of his Theory of Relativity, and of course it fits well with the Platonic mythology he embraced.

The myth of inherent speed is simplistic and generally useful and harmless but as a basis of science it is a tragic disaster. In order to maintain the myth and demonstrate his Faith in non-relative speed, Einstein sacrificed his commonsense. We simply recognise the myth (and Relativity) as nonsense and define speed in accordance with commonsense. Getting rid of the blindfold of Relativity sheds a clear light on the speeds of radiation and their importance in our understanding of the universe as explained below.

### Every speed is precisely between two points

Speed is the rate of motion (change of distance), between two points, therefore a speed can be measured only between two points, no more and no less.

We can treat a group of things as having one centre point and get an average of all the separate speeds, but the average is precisely between two focal points.

An object (its centre point) travelling between two points  $x$  and  $y$  has two separate speeds; a departure speed from  $x$  and an approach speed to  $y$ . The departure speed equals the approach speed only when the distance  $x$  to  $y$  is constant.

Because speed is the essence of the theory of relativity we need to establish the meaning unambiguously. When we drive along a busy highway we are travelling at many different speeds simultaneously. Our speed varies according to the movement of every other object, accompanying, approaching, or departing vehicles, posts, pedestrians etc. with which we measure our motion.

In addition, we are rotating about the earth's axis at up to 1,600 km/h, orbiting the sun at over 100,000 km/h, orbiting in our galaxy at an immense speed, and expanding away from some galaxies at nearly the speed of light.

There are three essential points:

1. The speed can not be inherent in, or a property of a single particle because speed is based on the distance between two things.
2. The principles apply equally to all things, including light, because the measurement is properly about points representing the objects rather than the objects themselves.
3. The principles apply irrespective of the rate of motion, including the speeds of light.

## Light is activity, not the actor

Light is an action (pulse radiation) in an electromagnetic field. It is the linear and oscillating motion of photons in a medium comprised of elementary particles. We also use the term, light, to describe the effect of that pulsation, for instance the effect of photons impacting on our retina.

Theorists go wrong when they confuse the non physical action with the physical particles that do the acting. On page 85 of his book, Hawking says that two hundred years ago there were two theories about light:

one, which Newton favoured, was that it was composed of particles; the other was that it was composed of waves. We now know that both theories are correct. By the wave/particle duality of quantum mechanics, light can be regarded as both a wave and a particle.

There's the old blindfold, the obliteration of the distinction between the non physical form (wave) of light and the physical carrier (particle) of light.

Wouldn't we be surprised if, while on a sea shore, we were to see a wave leave the water behind, shake itself like a dog, and head off inland, perhaps to give Stephen Hawking a wave from the hill top. Waves exist but they exist in a different way from the material of which they are the shape of the action. Arms and oceans may make waves but they can never become waves. It is an impossibility, yet the Theory of Relativity depends on it entirely.

## The Michelson–Morley experiment

During the nineteenth century it was generally believed that space was occupied by a flexible but fixed ether which carried light and radio waves. But the famous Michelson–Morley Experiment (1887) demonstrated that reflected light travels between two fixed points on earth at a speed that is not affected by the motion of the earth. This result was incompatible with the old idea of a “fixed ether” and probably indicated that local “ether” moved with the earth like the atmosphere, but it raised doubts and further confusion in the scientific community.

As stated above the experiment demonstrated that reflected light travels between two fixed points on earth at a speed that is not affected by the motion of the earth through space. From this it was officially assumed that the speed of light is constant in all circumstances.

This was presumptuous because all the light velocity measurements were done in a fixed frame (between mirrors) and could not measure the speed of light between relatively moving objects. Also, light velocity depends on the form of the substance through which it travels, and accordingly the velocity must vary as the waves enter and exit glass mirrors.

But the real blunder was that the term “constant speed” was used ambiguously to mean self-contained (inherent in particles) as well as unchanging.

The price of these assumptions is extremely high. The cumulative price includes having to abandon the fact that the concept of speed makes sense only when it relates to two positions, it denies the facts of

universal time and space and it replaces the substance of mass particles with a phantom called Energy.

The most important implications (apparently ignored) of the equality of light propagation speed in all directions on earth would be; there must be a light wave carrier which is, in effect, moving with the earth, and the carrier must have mass. That carrier would have to be a kind of ether but belief in an ether was officially forbidden. A virus-free common sense approach would surely have recognised that light waves and the earth's electromagnetic field are made of the same stuff (mota) and should move and rotate with the earth. In other words the earth's magnetic fields should control light speed within those fields but not beyond them, for instance not between stellar bodies.

### Einstein's inconstant constants

Albert Einstein did not invent the constant speed of light, but he did enshrine it in a mathematical equation as the only constant in his equation, and this created the doctrine of the infallible photon. It is the act of faith (the superstition which supersedes common sense) of the Theory of Relativity.

However, Einstein did invent two other constants. The first was called the cosmological constant which he invented to balance the universe. It was soon withdrawn in favour of an expanding universe. The second was the constancy of electrons orbiting within atoms. It was put down, under protest, in favour of the uncertainty principle which was invented after quantum mechanics.

Einstein's score is two constant ghosts down with one to go (the speed of light). That score shows that even a genius can be constantly wrong.

### Inter-stellar light speeds

Fallacies are like fibs: start with one it snowballs. From the rather simple presumption that light somehow possesses an inherent constant speed has led to a most bewildering array of superstition in which the Theory of Relativity is central.

For instance, Relativity claims that speed can have magnitude without direction. But speed is rate of motion and motion means moving from one position in the direction of another position, so Relativity is left with speed and no motion. Even if we have nowhere to go, if we go we must go from a position. The error stems from Relativity's presumption that the abstraction "speed" actually exists. It does not. Only specific speeds exist and each speed is the rate of a specific movement.

Here is another example, taken from *The Illustrated Encyclopedia of Science*, page 103:

In Einstein's theory light travels at a constant speed relative to whoever is observing it. For example, if two spaceships were travelling at 200,000 kps, one towards the sun, and the other away from it, they would both measure the velocity of sunlight to be 300,000 kps (and not 500,000 and 100,000 kps, respectively).

If a spaceship is travelling from earth to the sun at 200 kps and another is travelling at 200 kps in the opposite direction they will pass each other at 400 kps, and commonsense says that the principle must hold irrespective of what things are travelling or the speeds at which they are travelling. If as they pass, they both receive a light signal from earth, the departing spaceship will receive the signal at 200,800 kps and with reduced frequency. The approaching spaceship will receive

the signal at 300,200 kps with an increased frequency. Relativity tries to maintain its original fib by claiming that clocks change pace, not the speed.

But Relativity fibs have no where to stop. If two objects (two atoms would be enough) travelling at 200,000 kps in opposite directions collide they would do so at 400,000 kps, a speed greater than the speed of light. What a crash! According to Relativity every particle in the objects would have more mass than the whole universe with energy to match. The event would make the fabled Big Bang look like a fizzer on fireworks night.

According to the Theory every observer has a clock in one hand and a tape measure in the other with which they control time and distance. If observers can vary time and distance there's no logical reason why they can't reverse them. Hawking entertains that superstition but Commonsense boggles at the idea.

## The Doppler effect

Now let's look at the Doppler effect, which the Theory accepts but interprets in a curious way. It means that radiation from distant stars is red shifted. That is, because the star is moving away from earth, succeeding signals have further to travel and therefore the light we receive has a lower frequency and longer wave length than the light would have if we were not moving further apart.

The Theory of Relativity agrees that the lengthening of the wave length means the star is moving from earth and therefore each succeeding wave has further to travel, which spreads out the waves between the star and the earth.

But the Theory then embraces the contradiction that, although the signals are spread eccentrically from the star (looking from earth) they are not spread eccentrically from the star (looking from the star). We say that if both departure and approach speeds remain the same (as claimed by the Theory), then the distance between the star and earth must remain the same and also the wave length and frequency must remain the same, so there could be no red shift.

Departure and approach speeds must differ continuously in an expanding world. The red shift is evidence that this is so, and that the idea of a constant light speed is untenable.

If the star moves from the point of emission, the approach speed to receivers ahead of the star will be increased (and the frequency will be increased causing a blue shift). Conversely, for receivers, such as the earth, on the other side of the point of emission, the approach speed will be reduced (and the frequency will be reduced causing a red shift).

If the earth moves away from the point of emission, the approach speed will be reduced and the frequency reduced. Conversely if the earth moves towards the point of emission the speed will be increased and the frequency increased.

From the above it is clear that the speed, wave length and frequency of light travelling to earth from a star depend on the speeds of *both the star and earth in relation to the points of emission*. The final velocity at which the signals are received on earth will depend on how they are affected by the earth's electromagnetic field and atmosphere. They will vary generally in accordance with the theories and predictions of the brilliant British physicist James Clerk Maxwell way back in 1865.

## The choice is between speed and non-speed

It is worth noting that once the signals are received their velocity and wavelength can be changed without a change in frequency.

That means that experiments on earth can measure the frequency but not the speed or wavelength of light travelling to earth. They certainly can not measure the approach speeds of light before it enters the earth's electromagnetic fields. That is because, provided both wave length and speed of incoming starlight vary proportionally, the frequency remains the same and there's no precise method of determining the ratio of change. Conversely if the frequency is changed there's no reliable way of determining whether it was caused by speed or wave length change. Calculations of galactic distances presume the light speed.

In summary, the red shift caused by a reduction in frequency (called the Doppler effect) is matched by the excess of the departure speed of the light signal from the star over the approach speed of that light signal to earth. That excess is caused by the speeds and the angles at which the star and the earth are moving away from the point of emission and from each other. With some simplicity we can say the red shift (reduction in frequency) is caused by the star and the earth moving away from each other which must create a difference in the speed of the light signals and the different speeds must be separately related to the star and to the earth.

Finally, it should now be clear that the red shift (Doppler effect) is proof that there are different speeds of light. The choice of theories is therefore between:

- (a) Einstein's superstition that the speed of light is never different, therefore the length of time and distance must be different for everyone and every object

or

- (b) the commonsense view that the speed of light depends, like all speeds, on the relative motions of the objects involved.

The second choice accords with the commonsense philosophy that the ultimate particles (actors) of light cannot be changed but their motion or action (including the performance we call light) can be changed.

Logically there can be no change in the wave length (colour shift) of a radiated light without a corresponding change in its speed. Therefore the Theory of Relativity which accepts one but rejects the other is illogical. The Theory attempts to avoid this by fudging time.

Only with blind religious faith could Einstein ignore the fact that his definition of speed is inconsistent and then declare that time and distance must be inconsistent and responsible for discrepancies in his Theory.

## 9. Traditional mathematics

What is it to be *one*? What makes one atom, one object, one family, one square, or one planet? An atom is *one* thing because of the way its parts behave, and that is the essential characteristic of unity — shared behaviour — the way the parts create a form. *One* is the basis of maths, so from the beginning, mathematicians have been concerned with behaviour.

A united family is more than the sum of its individual members and ancient mathematicians instinctively attributed that extra something to the form — the formal arrangement of the whole unit. Plato extended this presumption to the absurd conclusion that worldly objects are merely representations of geometric forms (he attempted to classify them) and to clinch the authority of his conclusions he proclaimed that mathematical forms were transcendental.

All earthly things, including humans, were subservient to Plato's mythical forms. That formalism has dominated mathematics and when it withered a century ago Einstein recycled it as Relativity. Academics who don't do it seriously are called Dons and those who won't wear it are dumped.

It's our turn now and we're dumping it.

### Messing about with the meaning of mathematics

This story does not require mathematical skills, except to the extent of adding common sense ideas and subtracting nonsense.

Whereas good old arithmetic is a science of numbers, mathematics is also about space and other things. We could say, absolute space is nothing, therefore pure maths, which is largely about space, is largely about nothing including the curvature of nothing. Hence the question that has plagued philosophers since Plato (427–347 BC), “What is the nature of mathematics?”, is much ado about nothing!

Not so! Mathematics is about behaviour and values. Not just the behaviour of numbers but the behaviour of everything that exists and also things that don't exist. It is about behaviour of particles, humans, and God. It is about our values, whether the city is more valuable than the citizens, and ultimately, about the value of God. So maths is about everything as well as nothing and maths has as many meanings as there are thoughts about it. Mathematicians cannot sum up its nature because it won't add up sensibly until we subtract the nonsense.

The commonsense view is that mathematics consist of ideas about things and their behaviour and relationships in terms of quantities and proportions or values. There are three kinds of mathematical ideas:



1. Mathematics of corporeal things which means the ideas are constrained by the principle of commonsense.
2. Mathematics of incorporeal things which means the ideas are not constrained by commonsense and encompass anything that can be imagined.
3. Mathematics of transmogrification. which claims a basis in science and reality but is about quantities of corporeal things magically changing into quantities of incorporeal things and vice versa.

The claim that mathematics is a science is based on claims of rigorous precision and consistency. Unfortunately it is never made clear whether the precision applies to actual things or imagined things, or what maths have to be consistent with. One could assume that the precision applies to quantities but clever mathematicians have invented excuses, such as cosmological constants, which evade the law. And to avoid problems with consistency and truth they have invented necessary truths and other truths, and strict consistency and other consistencies.

The simple fact is that mathematics has never been and never will be confined to science. A more useful question is, which mathematicians are scientific?

### Commonsense mathematics

Any doubts about the supremacy of ordinary common sense over metaphysics can be dispelled by evaluating the dubious philosophical conclusions of our most famous mathematicians over the past 2,500 years.

If you don't really understand what mathematics is about, don't despair. You may be in the company of many a genius who also doesn't understand. If you are a mathematical whiz beware that your maths may well be a gift from the wrong ancient Greeks and that your gift may cost more intelligence than it provides.

The most monstrous mistakes throughout history have not been made by ordinary people they have been made by famous mathematicians like Ptolemy. They are not simple errors of calculation, they are about the fundamental nature of maths. They are about behaviour.

Mathematics is a way of thinking about behaviour in terms of unity, sequence, aggregations, and ratios and other relationships. Mathematics is a vehicle of thought, a way of reaching an understanding of the natural mathematical order of the physical world. It is disastrous to abandon or overlook, as Plato did, the absolute difference between our ideas (mathematical or otherwise) of the universe and the universe itself, of which ideas can only be a non-physical part.

Plato viewed mathematics as transcendental. He believed that the form of anything was more important than the thing itself and that mathematical forms had more fundamental substance than physical objects. In short, mathematical forms were the ideas of God and therefore Mathematics was God. But of course the delusion does not stop there it leads to a general delusion that anything that can be thought of must exist and exist in a way superior to that of physical objects.

But, according to commonsense, mathematics is not God, it is a servant; and mathematicians who forget their role as masters and

allow mathematics to dominate their commonsense are soon enslaved and locked away from genuine intelligence. Yet that's how gifted mathematicians, from Plato to Einstein (and their disciples) have blundered.

Mathematicians, with some exceptions, are dominated by a faith in mathematical consistency and a belief that mathematical laws are both necessary and sufficient for establishing universal truths. They fail to recognise that their various professional philosophies are ad hoc versions of Platonism and therefore they fail to recognise that the basic assumptions of pure mathematics (in contrast with common arithmetic) are acts of faith. They certainly shy away from recognising that the Theory of Relativity is fundamentally superstition and not scientific.

### The nature of mathematicians

Historically, theories of mathematics have been dominated by religious belief. Socrates (469–399 BC) was charged with impiety and sentenced to death for teaching commonsense ideas and during the following two thousand years scholars, including mathematicians, were bound by dogma of Church and State.

Anyone seriously entertaining the nonsense question about the nature of mathematics, is already in the realm of religion — maths has no nature. A more sensible question is about the nature of mathematicians. Mathematicians are religious creatures, first by virtue of being human and subsequently as a product of their environment.

The dominant traditional theme is the metaphysical idea that events are caused by mysterious forces and that mathematics is the set of laws

by which those forces control the behaviour of all things. Plato, the disciple of Socrates, set the theme in stone, so to speak like the Egyptian pyramids two thousand years earlier, by formulating a theory in which the substance of the universe consists of geometric shapes. For Platonists, material objects are mere reflections of such forms, and existence and behaviour are governed by the power of mathematics. There have been periodic rejections and revisions of the dogma, including attempts to depict mathematics simply as intellectual survival equipment developed by man, but by and large they have amounted to little more than countless variations on a theme.

A most important brief history of maths is contained in *Theories of Everything* by John D. Barrow, who provides a useful representative account of positions taken in the debate since Plato and particularly towards the end of the nineteenth century. He debunks mathematicians who seek a Theory of Everything and he offers his book as an antidote to Stephen Hawking's *A Brief History of Time*. Unfortunately, he does not identify the fundamental problems encompassed by maths and he balks at offering a solution.

Nevertheless, Barrow's book is important for the following reasons:

1. It is a highly literate contemporary work of a recognised authority on the subject and can therefore be accepted as a genuine presentation of the history and current state of understanding, or misunderstanding, of mathematics.
2. It portrays the vast range of different beliefs and contradictory positions taken and thereby clearly illustrates that even the most famous of scholars cannot agree on what it is that they are discussing and frequently disagreeing about.

3. It, not so clearly, illustrates the stranglehold on commonsense that has been maintained by established authority through the mystique of mathematics. Barrow's neutrality reflects the contemporary finesse with which classical dogma is enforced in academic circles. He chides propagators of theories of everything and in effect states that most mathematicians are intellectually dishonest but he does so in the academic style that would encourage most of them to continue their ambivalence.

As Barrow puts it (p. 184):

Most scientists and mathematicians operate as if Platonism is true, regardless of whether they believe that it is true. That is, they work as though there were an unknown realm of truth to be discovered. Particle physicists are the most deeply Platonic because their entire subject is built upon the belief that the deepest workings of the world are built upon symmetries.

### Superstitious mathematicians

Barrow's book reflects the inability of scholars throughout history to escape the superstitious belief that when a collection of things is thought of and given a name, the collection exists in addition to and in the same way as the individual things. For instance, if all the people were removed from a crowd the crowd would still exist. In the extreme form the existence of a name means that the thing named actually exists, and that attitude leads to the belief that actions actually exist like the actors.

The ancient source of this superstition is in the way we tackled our primitive ignorance of the universe by identifying objects and naming them. As we advanced from simple objects to identifying causes and

effects we continued tagging them with names but we failed to distinguish between abstraction and actuality.

Individual events such as lightning flashes, thunder claps and particular movement of things on earth and in the sky can be unambiguously tagged by names but when an indefinite number of such events are grouped under one name such as lightning or thunder the name does not tag any actual event or object.

Anyone hunting for lightning and thunder may well be struck by a flash or a clap and may even capture some evidence of them, but abstract lightning and thunder can never be hunted down because they do not exist in the way that the particular events exist. The mental abstractions that we conceive and baptise do not exist out there they exist only in our minds.

Invented Deities and other beasts or icons were an effective way of communicating some of these abstract concepts but unfortunately the mortal authors were prone to become prey to the immortal beasts. Today's scholars continue the tradition, they are the servants, the abstract notions are the masters, and mathematics is the most demanding of all masters. Clearly our thinking and therefore intelligent behaviour are most endangered species.

Transmogrification is their master in one word. It is a mysterious maths monster.

We understand how gases, liquids and solids are transformed from one state to another and we have learnt a great deal about the physical (including chemical) behaviour of bodies and about reconstitution of particles to change the shape and other characteristics of material

things. We know about some creatures changing their physical forms but we know absolutely nothing about transmutation of physical to non-physical states or vice versa. We don't even know, despite widespread beliefs, whether such transformation is possible. Can forms exist apart from bodies or are they simply the relationship between elementary particles?

The ancient Egyptians believed that deceased bodies actually passed into another world. They placed food in tombs to nourish the travellers on the way. But let's start with the Greek philosopher, Pythagoras (about 582–502 BC) who taught the doctrine of transmigration of souls and is credited with discovering fundamental mathematical theorems and a system of astronomy similar to that of Copernicus. Why didn't the Greeks go on to develop astronomy and atomic science?

The answer is that, apart from doctrinal domination, people like Plato were over awed by a perceived power of almighty mathematics. They sacrificed their commonsense and their sovereignty on the altar of abstraction.

## Tradition of superstition

The following three famous mathematicians are selected to illustrate the relentless propagation of traditional superstition.

1. Plato formalised a philosophy which claims that mathematics is a form of objective universal truth which exists independently of mathematicians or of anything else. It is something out there waiting to be discovered by mathematicians and it is expected to provide the ultimate explanation of nature. This philosophy is

based on Plato's absolute belief that shapes and forms are the real substance of the universe and that actual material objects are merely shadows or reflections of their shapes.

Clearly Plato got the priorities upside down and his disciples have persisted with the idea and perversely called their dogma realism and themselves realists when in fact the philosophy is simply unreal. We will refer to it as fundamental formalism (distinct from academic formalism which defines maths as having no definition) because it proclaims forms to be more fundamental and real than the objects which have the forms.

2. Aristotle, who was Plato's most distinguished pupil, supposedly rejected Platonism and claimed that there are three realms of purely theoretical knowledge (metaphysics, mathematics, and physics) which exist completely autonomously but are subject to an over-riding general principle of homogeneity which links them together.

Barrow claims that Aristotle's view could not have been more different from Plato's view and that Aristotle wanted to rescue physical science from the mathematical stranglehold that Plato had placed upon it. Barrow may be right about Aristotle's intention, but he is wrong about how different Aristotle's philosophy was. It retained the absolute belief in forms and forces and therefore it is merely an adaptation, a three part classification, of Plato's doctrine. Aristotle did not escape the superstition that mathematics and metaphysical forms exist in a way superior to actual objects.

3. Saint Augustine, a famous philosopher and the first Archbishop of Canterbury only six centuries after Christ. He personified the basically religious Platonic philosophy which was imposed for over 2,000 years. The length of that period is a compelling illustration of the power of propaganda and control of communication. The ruthlessness of the indoctrination can be gauged by the English *Act of Heresy* (1401), which provided that all persons whose beliefs were not those of the Church were to be imprisoned and if they refused to give up their heresy, to be burned alive. No wonder metaphysics flourished and dominated mathematics.

Eventually, as means of communication improved, innovative scientists and writers were able to establish modern science in spite of the dogma, and, towards the end of the nineteenth century there were claims that mathematics is a purely human invention, a survival tool that we have invented to help understand the universe. Despite such dissension against Platonism, traditional belief in mysterious powers, such as forces of attraction, remains deep seated and widespread.

### The inevitable complexity of maths

Maths and mechanics have been traditionally complex (beyond the capacity of minds and computers) for the following reasons:

1. The subject is unavoidably complex because of the sheer quantities of elementary particles and the intricacies of their aggregations and the variety of ways they can move (behave).
2. There have been traditional discrepancies such as the neglect of reaction. For instance, the oversight of Archimedes' achievement in actually moving the earth.

3. The instinctive recourse to abstract notions as forces and causes of action such as the force of attraction, kinetic energy and potential energy which provide some initial advantage of generalisation but become handicaps.
4. Deliberate decisions to abandon commonsense and adopt metaphysics. The Theory of Relativity is the outstanding example which has been tenaciously maintained despite the endless absurdities and complications it introduces into mathematics.

Our commonsense approach gets rid of a lot of the nonsense but the scope of the subject remains beyond our reach. Nevertheless, the commonsense principle makes the subject understandable at least in principle for the average citizen.

Maths, as stated before, is about behaviour and the common denominator of behaviour is the interaction of mass particles.

An essential character of matter is its inertia which means its relative motion (velocity) will not change unless forced to. According to commonsense the only way that the motion of mass can be changed is by impact with other mass. Therefore "force" is merely a shorthand expression for mass on a collision course. Any change in motion (action) of a particular mass object must be matched by an equal and opposite re-action in a mass which shares the impact.

The smallest and simplest force would be a slow elementary particle colliding with another. Measured in quantum terms, the impact would be one quantum of mass by one quantum of space over one quantum of time. That would produce one quantum of force (exchange of motion). A very gentle tap indeed!

But while commonly known forces may be gentle they are not single taps, they are a succession of taps in the nature of a push or thrust such as gravity or wind. For instance, each stroke of a vehicle engine comprises an incredible series of impacts. For practical purposes the magnitude of such forces must be taken as a group of impacts and averaged over a specific time and distance.

By adopting that collective simplification we are able to measure and predict many events in simple terms of momentum (mass x velocity) and as single collisions.

Of course mechanical considerations generally involve detailed information but it is the logical simplification, or compression, that makes the world intelligible.

Therein lies the need for and value of maintaining consistency with commonsense.

But Einstein complicated things with false simplification. By eliminating the natural difficulties of distinguishing between imagined things and actual things he also eliminated the distinction between facts and fiction. He eliminated the differences between particles and their relationships, the differences between ideas, material things and behaviour, and the difference between being a thing and not being that thing.

Einstein's superstitious Theory of Relativity eliminates the differences that are absolutely necessary for intelligence.

## 10. Modern mathematics

Albert Einstein was justifiably fearful of the monstrosities that have been glorified as war and he took refuge in Wonderland. But there are also monsters in the land of make believe, and Einstein unwittingly glorified the pestilent monster of Transmogrification which came back from the past to haunt the twentieth century.

In his native land he sowed the noxious seeds he had cultivated from the ancient belief that forms are mightier than mass. His notions of 1905 flowered and were harvested with other noxious weeds by megalomaniacs as an opiate for the masses.

In accordance with the fundamental priorities of the Theory of Relativity the State had absolute supremacy over the people. Mathematical form exerted its mastery and the people of the world played out their role as statistical fodder. Hot and cold wars, economic surplus and deficits, life and death, they're all the same to the Theory of Relativity — there is no substantial difference between things.

After one century of that amorality it's time for change. It's time for commonsense.

### Neutrality of maths between facts and fiction

A good first step in understanding modern maths is to recognise that maths is absolutely neutral between fact and fiction, and that it deals equally well with both. Maths can be difficult when dealing with reality, but when dealing with fantasy it becomes impossible. That is

why no one, not even Einstein, really understood the full implications of the Theory of Relativity, it was fantastically impossible.

Mathematics is about ideas because numbers are our ideas about quantity. We start with the concept of unity — what it is that adds up to one thing. How much is one particle, one object, one nation, one universe or one event? As a matter of interest, there was no formula for defining unity until after the second world war. Maths is not confined to ideas of real numbers or to reality. For example, one man divided by two, equals one half-man. That's a good mathematical equation, but it's at home only in mathematics or in Wonderland where one can even divide the indivisible primary particle and manipulate infinities and other absurdities.

Basic maths, or arithmetic, is about joining (adding), separating (subtracting) and comparing things. Comparison is a way of getting proportions and fractions, multiplication is a way of adding identical or related things together and division is subtracting equal portions. For instance to multiply 1,000 by 1,000 we can simply add three noughts to 1,000 which produces 1,000,000. Or add 1,000 one thousand times. That's how computers do it.

Arithmetical skills enable us to identify and measure differences in aggregation, motion, time and place. In other words, to measure behaviour. With more advanced mathematical skills we can predict



the outcome of behaviour and eventually establish means for controlling behaviour.

The worst problems arise not from arithmetical errors but from philosophical errors of priority. Plato's adoration of form leads logically to the belief that the State, which is merely a form of authority, is more important than the citizens, so Plato and his followers could thereby justify virtually any kind of authoritative control including slavery, which they did.

One could say,

If the faithful followers of Plato really believe that the form is more important than the physical substance, let us eat the bread and the fish and let them eat the form.

And it could be said of those who have embraced the Theory of Relativity,

If they really believe that matter, space and time are forms of the same thing, then let us feast on what matters and let them feast on time and space. And if they don't believe there is an absolute time or space why not put them in another place until another time.

## Check those mathematics

Maths is used to describe and predict behaviour but, like any good computer, it reflects whatever is fed into it so it is a good idea to check, in the light of common sense, what is fed into any maths which significantly affect our lives (such as Einstein's equation or hire purchase and insurance contracts).

Two main things to check are:

1. Symbols must properly represent the ideas they are claimed to represent.
2. Only genuinely equivalent things can be interchanged.

With reference to misrepresentation, Einstein fed a number into his famous equation, and his trick was to claim that his magic number was a constant and also *the* speed (not *a* speed) of light which are two different things. But, although his number coincides with a common speed of light, it cannot be a speed for the following commonsense reasons.

Firstly, speed is a relationship between two points, the rate at which their distance is changing, so speed only makes sense when related to a point. But Einstein's number is unrelated to any point, so it can not be a real speed.

Secondly, the speed of anything depends on the movement of the other thing with which it is changing distance, so it will have simultaneously, different speeds related to all other things that are moving differently.

But Einstein's number is independent of all things.

Because there are more than two things moving in different ways in our universe, it is impossible for anything, including light, to have only one speed. Therefore, logically, there cannot be a universally constant speed of anything. In order to maintain his confusion about speed Einstein had to sacrifice constant time and distance.

With reference to interchanging only equivalent things, Einstein dodged this discipline by maintaining that all conceivable things on earth or elsewhere are forms of one another and are therefore equivalent and interchangeable. They are the rules for his equation and for the Theory of Relativity.

### Geometric power of propaganda

Einstein's peers have constructed another set of rules called quantum mechanics which are kept beyond the reach of common sense by abstraction and by official proclamation that common sense shall not be applied to the theory. That proclamation, if accepted by the general public, would herald a new dark age. It is a modern version of Ptolemy's ancient decree that earth was the centre of the universe and of the consequent banning of common sense and of special treatment (like the *Act of Heresy*) for anyone who disagreed.

Here is an example of how the demoralising propaganda is spread. In his book, at page 18, Hawking proclaims:

However we have had to change our ideas about space and time. Although our apparently common sense notions work well when dealing with things like apples, or planets that travel comparatively slowly, they don't work at all for things moving at or near the speed of light.

Hawking is clearly confused. Our common sense can deal well with light and radiation as Newton and Faraday demonstrated long ago. It is the Theory of Relativity that can't handle reality. The gag is being applied to the wrong people.

### Check the neutrality of mathematicians

As previously indicated, Barrow's book, *Theories of Everything*, is essentially wonderful. Scholarly, authoritative, vast, elegant, methodically arranged and delightfully written. Barrow criticises over ambitious attempts to produce theories of everything and importantly he identifies two outstanding villains, Albert Einstein and Stephen Hawking. Congratulations and thank you, Professor Barrow.

But the book is also wonderfully neutral and acceptable, except to those who understand the message in Lewis Carroll's *Alice in Wonderland*. Carroll, the impeccable mathematician, is missing from Barrow's bibliography and Carroll's warning against metaphysical nonsense is absent without excuse from the text.

For those who would comprehend history and the role of thinkers in the universe, *A Brief History of Time* is compulsory reading, but only in conjunction with *Alice in Wonderland* and *Theories of Everything*. The joys of reading of those three books are immeasurably enhanced by *Matter of Commonsense* and its disclosure of Einstein's mathematical inconsistency.

Hawking Hysteria is a symptom of mathematical delusion. Whereas Barrow's *Theories of Everything* offers a sedative for the symptom, the Commonsense Principle is a cure for the disease. They are compatible so take both. Prevention is even better, so please think of passing The Commonsense Principle presented in this book on to the next generation as inoculation against propaganda.

## Products of superstition

Einstein was a victim of the Pythagorean myth. While playing with Platonism he was taken with Pythagoras's transmigration of souls. He submitted to the postulate that tangible objects could transmigrate and exchange places with their spirits and then he went on to believe that mass is equivalent to and interchangeable with space and time.

Einstein's involution is a classic example of rapid and total retrogression from modern empiricism right back to the dream time of the ancient mathematicians wherein Einstein squandered the latter part of his life. His one way trip to absolute abstraction is commonly known as the Theory of Relativity.

We are products of our environment. Albert Einstein and Stephen Hawking, who are widely regarded as the most brilliant theoretical physicists of the twentieth century, were born into an intensely religious environment. Their religion was Mathematics.

In common with all religions, Mathematics transcends the differences between corporal and spiritual worlds, and claims general sovereignty over the vast accumulation of intellectual wealth bequeathed by the world's great thinkers, as well as custody of contemporary dogma. As the religion of twentieth century mathematics, the Theory of Relativity disdains our common sense and claims all credit, but no blame, for the state of our muddled enlightenment.

Einstein did not invent any of the three main players (energy, mass and constant speed) in his equation. Nor did he invent the idea of objects changing size according to their speed. They were, like the mathematics he used, part of the environment that he inherited and which in turn inherited his equation.

In fact Einstein was not the sole inventor of the explanation of the atomic behaviour in the Brownian solution for which he first became famous. His explanation was accepted because it was more mathematical than other explanations.

Einstein claims he was a slow learner but he immediately caught on to the fact that when it came to academic recognition a mathematical explanation left commonsense for dead. From then on he was what he claimed, a slow learner; he never learned that maths is a product of intelligence, and that intelligence is the product of commonsense. He believed that God was a mathematician and that His explanation of life was out there in the form of a mathematical equation just waiting to be discovered. Hawking, with true Platonic perversity, overturns the priority and believes not that God was a mathematician but that Mathematics is god.

Einstein's equation is enigmatic for various reasons. The first is that Einstein never explains what Energy is. The only thing Einstein's Energy could stand for is a phantom as powerful as God. What else could equal everything in the universe? The second is that the Theory never explains what it means by velocity (of light).

It can't mean commonsense speed because all speeds must vary according to the motion of other things. Also, it is self contradictory because according to Einstein mass can't travel at the speed of light so how can they be equivalent. Clearly we need an explanation of this phantom that Einstein calls Energy.

## Four fabulous forces

For Platonists and alchemists who believe there is a shadowy form lurking in every object and monitoring its behaviour, there's no problem in believing in phantom forces and, as a consequence their Energy has in effect become the family name for four fabulous forces fathered by Alchemy.

According to the Theory of Relativity (as told by Stephen Hawking), the universe is driven by four forces; gravitational attraction, electromagnetic attraction and repulsion, the weak nuclear force which is responsible for radioactivity, such as the disintegration of radium, and the strong nuclear force which holds (by a mysterious attraction) some particles like quarks, protons and neutrons together in the nucleus of atoms and rejects others.

Aristotle, whose false ideas of nature directed attention away from atomic research for 2,000 years, also identified four forces. But we could count repulsive forces as additional to attractive forces. That would make at least six modern mysterious forces, and mathematicians have no idea what they are or how they move particles without physically touching them.

In contrast, commonsense tells us, there's simply no need for mythical forces or a substance called energy because all physical events can be explained in terms of particles and their motion and other relationships. Once we invoke an energy thing it's a short stumble to a speed thing, and of course that's the way the Theory of Relativity arrived at the assumption that as a particle approaches the speed of light it will become as massive as the universe. It's simply an extension of Plato's faith in forms, it's simply superstition.

Hawking (p. 75) claims that:

the electromagnetic force between two electrons is about a million million million million million million times stronger than the gravitational force.

He does not bother to say what the force consists of, or how it achieves so much, because he takes it as gospel.

On p. 171 he reports that:

in 1974 Joel Scherk and John Schwartz ... showed that the string theory could describe the gravitational force, but only if the tension in the string (a substitute for a particle that has length but no thickness) were about a thousand million, million, million, million, million, million, million tons.

Stretchons would be an appropriate name for the bits of string because they stretch the limits of the imagination, and they're really having us on. Strung out on the limb of a stringy bark tree, there, but for the grace of commonsense, go we.

Hawking says (p. 123):

At the big bang itself, the universe is thought to have had zero size and so to have been infinitely hot.

The theory has never offered a common sense explanation of how the whole universe can be squeezed into nothing, or what it is that can be infinitely hot and have no space in which to exist let alone have the motion we call heat. The Theory must invent a completely new concept of heat.

There is one thing that's certain — the mathematics of the Theory of Relativity is absolutely magical.

### Equations = some elucidation

Please don't shy away from the equation bogeyman. There's nothing like a double barrel blast of common sense to bring high flying fallacies back to earth.

Let's start with the fact that Einstein didn't recognise the difference between the Actor (things that do the acting) and the Action. He believed that energy (the action) can change places with matter (the actor) and that is what is meant by *the equivalence of energy and matter*. It asserts, in effect, that the Acting can walk off the stage and leave the Actor flat footed, and conversely if the Actor disappears more Acting will appear in his place. Don't laugh, it is a serious comedy!

We say elementary particles are the only things that occupy space exclusively and resist change in motion. They are the only things that can push and be pushed.

Mass is the measure of material substance in a body, that is the quantity of elementary particles in the body. Mass is loosely used to refer to the material.

Inertia (resistance to change of motion) is the most elementary behaviour. It is one of the two essential properties of mass. Inertia is sometimes loosely used as an alternative name for momentum, particularly zero and ineffective momentum.

Momentum is the measure of inertia, just as mass is the measure of substance.

A momentum is a quantity of inertial behaviour, the quantity of motion that one body shares with another body and resists changing. The amount of behaviour (resistance to change in motion) is determined and measured by the mass of the body multiplied by the relative speed. Each body has an infinite number of speeds because it shares a different speed with each of an infinite number of related bodies. Therefore every body always has an infinite number of momenta, so a momentum cannot be, as classically claimed, inherent in mass. However, for mathematical simplicity we may attribute a particular momentum to an object.

We all know that when one body bumps into another at least some relative momentum is changed and the amount depends on how big and fast the body is and how much bumping it does. How is the amount of bumping or pushing measured and stated? Well, there's a general practical maths equation called the equation of energy which expresses the amount of relative momentum between one body and another. The momentum is loosely called heat energy, kinetic energy, and potential energy and even more loosely it is imagined as being a spirit, like gravity, and part of the body.

The equation is:  $\text{Energy} = Mv^2 \div 2$ , which claims that the quantity of energy is equal to half (the amount of mass multiplied by the change in velocity squared). We need not bother now about the mathematics. Simply note that the momentum is divided by two thereby accounting for only half the effort, that is, half the total event.

What about the other half of the *energy*? If no one's watching it can be swept under the carpet. And so it has been. It has been swept under the mass and called "mass energy". Check it out with your dictionary and you will see the amazing fib that hides the slothful homework. The dictionary will read like this: "mass energy is energy attributed to mass by virtue of its mass" or in other words, "because we didn't know what to do with half the energy we hid it in the mass." What a mess!

There really should have been no problem, half the energy (activity) should have been attributed to the reaction of the other body. The proper equation for the total effort or push is:  $E = Mv^2$ , and Einstein's equation is a corruption of that equation.

### Life consists of changes in momentum

All behaviour, and therefore life, consists of changes in momentum. In other words life is a series momentous changes. So, in order to understand life we need to understand momentum. Remember that momentum exists between bodies, but we sometimes attribute it to bodies for simplicity.

The only way a momentum between two bodies can be changed is by a push, and the change takes time because of inertia. The amount of change depends on the pressure and duration of the push. The greater the pressure the less the duration and vice versa, therefore they are inversely proportional to each other. An instantaneous change (infinitely small duration) would require an infinitely large pressure which is impossible.

Let's take a practical example, remembering that the only way anything can be moved is by pushing. Imagine a satellite of 10 mass

units (weighing 322 pounds on earth) in constant orbit about earth and it is your task to decrease its speed by 32 feet per second (fps). We know from gravity experiments that a 322 pound pressure on a 322 pound body will accelerate the body to 32 fps in one second.

We also know that the average speed will be half 32 fps and therefore the distance the satellite will have moved away in one second will be only 16 feet.

You park your spaceship in front of the satellite, so there is zero speed and momentum between you and the satellite, and push the satellite with a telescopic thruster applying a pressure of 322 pounds until the satellite has moved 16 feet away and is moving away from the spaceship at 32 fps.

We have failed to slow the satellite the full 32 fps because we have neglected the re-action. The momentum and any change is shared equally between the pusher and the pushed. And there are other interesting consequences.

1. The momentum between the satellite and the spaceship has increased from zero to 32 fps x its mass, but the satellite has lost momentum in relation to earth. Conversely the spaceship has gained momentum in relation to the satellite and also in relation to earth.
2. The shortfall in slowing the satellite is determined by the ratio of the mass of the space ship to the mass of the satellite. If it is ten times the mass it will change speed only one tenth as much as the satellite. The satellite would have been slowed by 28.8 fps. The spaceship would have been speeded up by 3.2 fps.



3. The centre of an unattached ram remains relatively motionless. It pushes the satellite in one direction and the spaceship in the opposite direction and their share of the speed is measured from the ram.
4. The same principles would apply if the spaceship used its thrust motor to move the satellite. The reactor would be the fuel.
5. The same principles would apply if the satellite were pushed from the earth and the earth would be the reactor.
6. In every case the change in momentum is shared by all related bodies, there's an infinite number of them, but by different amounts depending on their spatial relationships.

To obtain and use an overall value of the push (any push) we need to understand four factors:

- the Mass that the bodies require to push against each other,
- the speed of the pusher required to maintain contact and apply pressure,
- the distance required for the push, and
- the duration of the push required to reach the speed.

Using the satellite exercise, we can measure the total amount of push required to move the satellite. The speed achieved from the ram by the satellite pusher is 28.8 fps. Note that the greater the distance the greater the effort, so multiply the speed by the distance (14.4 feet). Next, note that the greater the pressure the less time required so divide

by the duration (one second). Finally, the heavier the satellite the more effort required, so multiply by the mass of the satellite.

If we put them together we get the amount of effort used to the push the satellite. That is half the total action. If we use the weight and speed of the spaceship we get exactly the other half, the reaction. If we only want the total effort we can double any factor, and the satellite distance is the easiest because 28.8 feet divided by one second is the speed of the satellite as follows.

Mass of thing pushed x speed x (distance pushed ÷ time taken).

Which, because speed = (distance ÷ time), can be abbreviated to:

Mass x speed x speed. Or even shorter to  $Mv^2$ .

Congratulations! The total Push =  $Mv^2$ .

We have expressed the total push mathematically. But much, much more than that, as explained later, we have expressed an event and life is made up of events.

Is our  $(Mv^2)$  what Einstein was on about when he invented  $E = Mc^2$ ? The total push (which he call energy) equal to the momentum shared by two bodies? Of course it is, but Einstein did not know the velocities of particles within atoms so he nominated a common speed, the speed of radiation.

The  $E$  in Einstein's equation stands for Energy, but it can mean no more than the total push involved in an event, that is the amount of momentum exchanged. It has no substance, it is the commotion, the behaviour of the particles.



Einstein fell for the idea that the push (his idea of energy) was interchangeable with the thing pushed (mass). He abandoned consistency of symbol definition and introduced Pythagoras's transmigration of souls between motion, time, distance, and mass and that put his theory beyond the realm of science.

We've shown we can push our barrow or satellite all by ourselves, we don't need any strange force to do it. But Einstein corrupted the equation because he believed there was a phantom pusher called energy doing the work. Don't let Einstein deny us the credit for doing it. The principle remains the same whatever the pusher and the pushed are named. We push one another and so do nuclear particles.

### Einstein's equivocation explained

Einstein's theory of relativity deals with the total amount of work (called energy) required to do a job at a constant pace. It took him another ten years to work out how he could include acceleration (change of pace over time) in his general theory published in 1915. We will show how he went wrong and also how wrong he went.

If some ants can build a hill in one year how can that be related to building the hill in one second? The amount of work is the same but we would pay the ants more if they speeded up the job because there's a difference in the power applied. There is more to it than simply increasing the number of ants, so Einstein increased the number of dimensions. He added time as a fourth dimension. Now we ordinary mortals might think ants don't matter much but Einstein envisaged ants changing, not over time, but into time to do the job on time.

Here's the mathematical trick done with horses, because they're easier than ants to observe.

If we start with the premise that one horse can pull one ton one mile in one hour we can state their equivalence as follows, wherein horses represent energy.

$$1 \text{ horse} = (\text{can pull}) 1 \text{ ton } 1 \text{ mile in } 1 \text{ hour}$$

$$6 \text{ horses} = (\text{can pull}) 4 \text{ tons } 3 \text{ miles in } 2 \text{ hours}$$

Clearly any of the quantities can be varied provided there is an equivalent variation on each side of the equation and it's easier if we put the time on the side of the horses. Either of the equations can then be translated as:

$$6 \text{ Horses} \times 2 \text{ hours} = 4 \text{ tons} \times 3 \text{ miles}$$

or

$$2 \text{ Horses} \times 6 \text{ hours} = 2 \text{ tons} \times 6 \text{ miles}$$

Note how easily the characters can be interchanged and manipulated — and remember that Einstein's trick is to substitute one meaning for another.

Now check the premise again and note that we are dealing with the pulling power of horses and not with horses per se therefore the interchangeability must be constrained to pulling power.

But Einstein obliterates the distinction between the horse and its work (behaviour). He confuses the actor with the action in the same way that he confuses observers with the events they observe.

According to the Theory of Relativity the mathematical consistency proves that all things are interchangeable. Hours, horses, distance, and time are merely forms of the same thing. An increase in horses produces an increase in the speed of the job so speed and horses are both equivalent and interchangeable. Horses increase in mass in proportion to increases in speed. Time is an equal factor and there should be no discrimination against it. Time is just another equal dimension, the fourth dimension.

In direct contrast, the commonsense principle maintains that the idea of general equivalence and interchangeability is nonsense. The whole exercise is about pulling power and that pulling power is the only equivalent attribute. Men, horses, tons, distance and time are interchangeable in the imagination but not in reality.

Einstein changes horses in midstream, he switches the meaning of the symbols from the attribute to the object, from the action to the actor. He commits the cardinal sin — mathematical inconsistency. We have caught him out. The Cardinal has lost his scientific cloak.

If you have ever been timid about making mathematical mistakes, take heart in the knowledge that it would be difficult to match the mistakes of the mathematical giants like Plato and Ptolemy. Cardinal Einstein arranged the marriage of mathematics and metaphysics and that union is a mistake that has produced a monstrous mass of superstition.

No novice could do worse.

## 11. Future mathematics

Of course the Theory of Relativity should be relegated to the realm of mythology, and that should be dead easy now that it is superseded. But what's to be done about so-called pure or theoretical maths and professional ethics. According to Professor Barrow, most scientists and mathematicians operate as if Platonism is true, regardless of whether they believe that it is. That is not good enough. Maths has a crucial role to play in every community and the communities are entitled to custodians of the discipline who are sincere and responsible. Nor is it good enough for professionals to stand idly by while commonsense is being sabotaged by their profession.

Community commonsense is precious, it is the essence of commonwealth and warrants defending even more vigorously than territory. The weak old excuse that there was no realistic alternative to Platonism and Relativity has no validity now. The ball is bouncing in the community court for the first time in history and the Commonsense Principle provides the goals.

### Dubious evolution of maths

Just as Ptolemy's constant position of the earth produced a false picture of the universe, so Einstein's constant speed of light has produced a false portrait of the force that drives the universe. They have both been credited with a great deal of the inexorable progress of knowledge which they in fact hindered. Ein Stein has really meant one stone, a millstone about the neck of commonsense.

Ptolemy's doctrine prohibited research on the various speeds of planets about the sun, and, in a similar fashion, Einstein's equation has hindered research on the various speeds of particles within atoms. Einstein's phantom energy has obscured, not only the activities that produce pressure when the particles collide, but also the real contents of the whole universe and how it works. If democracy is ever to get its sums right, citizens must be properly informed about the factors involved.

We should emphasise that most of our famous mathematicians have disagreed over the implications of the Theory of Relativity. Einstein's original Theory in 1905 was puzzling enough but his general theory in 1915 was incomprehensible. Even the two top proponents refuted the full implications of the Theory.

One was Einstein himself, whose refutation of the uncertainty principle (a corollary which claims that the behaviour of electrons is necessarily uncertain) is legendary. Ironically, devotees of quantum mechanics place their faith in the certainty of electron behaviour in their super computers to prove their faith in the uncertainty of electron behaviour everywhere.

The other was Cambridge professor, Sir Arthur Eddington, author of *The Nature of the Physical World* (1928) who, as described in Hawking's book, page 89, refuted the conclusion that stars could shrink to zero size (an inescapable consequence of Relativity).

Despite an academic aversion against infinities, an Indian mathematician named S. Chandrasekhar was awarded the Nobel Prize in 1983 for his work, part of which concluded that according to the Theory of Relativity large stars could collapse to zero size.

It is strange that those warning signals in the form of the discord of the founding fathers of the Theory of Relativity failed to alert the world to the fundamental fallacies of the Theory that are so apparent to ordinary commonsense.

That's a tribute to phantom tenacity and our reluctance to give up the ghost.

Superficially Einstein's equation appears to define energy but it does not provide real answers to the questions of what energy is. He certainly confused the thinking about the nature of light. He simplistically says the unknown things, energy and the speed of light, share equivalence. His ideas of their behaviour did not accord with commonsense so he abandoned commonsense.

## Maths and morals

In order for theoretical physics and mathematics to have a respectable future common sense must be reinstated to resume its essential role of distinguishing between what is true and what is false. Future maths should be clearly separable into the three classifications (mythology, alchemy, and commonsense as described in chapter 9) and the title and status of science should be restricted to maths which are constrained by commonsense.

Astute world leaders have warned of imminent global catastrophes unless there's a dramatic improvement in our general philosophy and

our way of thinking, and fundamental changes in maths must be part of that revolution.

The change should reflect a greater recognition of the symbiosis of maths and behaviour. The commonsense principle gets rid of phantoms and offers a fresh explanation of physics which will impact on the discipline of mathematics. Although maths must be constrained by commonsense the new theory of the universe being driven by pressure, instead of by mysterious forces of attraction, opens up a new world for scientific mathematicians and philosophers.

If there is something of greater mathematical importance than the role of maths as a vehicle for philosophies and therefore models for life, it is our need to recognise that role and to bring it under the control of our commonsense.

We are, of course, referring especially to theoretical physics (which embraces the Theory of Relativity) but because of the infectious nature of that philosophy we refer generally to all mathematical philosophies, including those applied to economics and other social sciences.

We have already cited the fable of the Emperor's clothes. Two fabulous Authorities on weaving proclaimed they could transform gold and silver into their essence from which they would weave wonderful clothes. The Emperor was deluded and his empire embezzled. But the real message is not that the empire lost its gold and silver, it is that the delusion clothed the corruption of the empire. Commonsense and honesty had lost its currency. The sums did not add up because the system was morally bankrupt.

Therein lies the Pythagorean parallel with modern mathematics which is now tainted with delusions and amorality. Barrow's summation is worth repeating:

Most scientists and mathematicians operate as if Platonism is true, regardless of whether they believe that it is.

The wizard mathematicians are working away with their mathematical delusions of weaving a fabulous universe from the essence of material while scientists stand aside expressing their wonderment with Ah's and Oh's and even Bravos.

Of course there's a funny side to the fable and there doesn't have to be a conspiracy. Simple apathy is quite sufficient. The fabulous weavers didn't need to explain how the essence (form) of gold was the same thing as the gold because they operated in the realm of Alchemy. Similarly theoretical physicists don't have to explain how the essence of mass (its mathematical form) is the same as material because they operate in the realm of Relativity. They simply call it energy and believe that a name is sufficient proof of existence.

To ask a disciple of Relativity to explain what is meant by *energy* invites the same response as asking for an explanation of devotion to mathematics:

If one does not embrace the faith one can never comprehend its meaning — full stop.

### Einstein's secret inconsistency

Einstein was basically a good man despite his ambivalence. In his later life he asserted that:

all science, measured against reality, is primitive and childlike — and yet it is the most precious thing we have.

Unfortunately his idea of reality was unreal (he thought speed was mass). And, science is a product of commonsense, therefore commonsense is more fundamental and precious than science. But Relativity discards commonsense and so effectively discards science.

The cardinal commandment of mathematics is consistency. The commandment says nothing about truth, kinds of consistency, fact or fiction — just consistency. Of course consistency is meaningless unless there is something with which to be consistent. Therefore we must assume that it at least means self consistency. This reduces the power of mathematics to manageable proportions. But, and here follows the best kept secret of twentieth century maths.

Einstein's famous equation is not only inconsistent with commonsense, it is blatantly inconsistent in itself. The symbols in the equation are not constrained to represent anything consistently, they are allowed to mean everything and nothing. As a consequence the power of Einstein's mathematics is restored to Platonic proportions and therefore absolutely out of this world and unmanageable.

We will also show that, heresy of heresies, Einstein's quantities are inconsistent. Not only his cosmological constant for which he has been pardoned, but in his famous equation. With no precision, no consistency and no reality Einstein's maths can have no claim to being scientific. In order to cover up the nonsense, his disciples have resorted to scorning and abandoning commonsense.

Like the secret of the emperor without clothes, the stark truth is there for all to witness, and so is the double sham. The emperor was deceived by the perpetrators and also betrayed by courtiers who were, like professional mathematicians, derelict in their duty to disclose the deception.

There is nothing unnatural about the deception of weavers and physicists, it is part of our survival kit. We are born believers and survivors with a natural right to do anything to survive — even to sacrifice our own life or the lives of others. We have survived so far because we opted for civilisation, for a social contract based on mutual trust. That does not mean, nor even require, absolute truth and the end to deception. But it does mean that the court of last resort, in which our trust and our future are ultimately based, is Honesty.

Just as the honest child cried out, “The king has no clothes”, so the newsboy now calls out, “Einstein has no science”.

## Mathematical magic

Let us make it absolutely clear that in rejecting Einstein’s doctrine that mass and its activity (energy) are equivalent and interchangeable we say nothing about whether souls or spirits exist. What we maintain is, that, in accordance with commonsense, bodies must be absolutely different from spirits and that bodies cannot change into spirits or vice versa. We reject the existence of a spirit called energy because there is no need for it. The concept is outmoded and more of a hindrance than a help.

Both Einstein and Hawking conceived a new commandment, *Consistency with Plato’s Metaphysics* and, with its mystical power to

confound the masses, became Cardinals. Naturally enough they found no inconsistency in creating and annihilating matter simply by manipulation of mathematical forms because, according to their Platonic faith, objects are subservient to concepts and forms.

They were both inspired to invent new Theories of Everything. Their favourite implements of sorcery (all forged in Wonderland) proved to be fiction friendly but funny, as the following list reveals.

1. The attraction of gravity — a power tool which moveth all things, at all times and distances, without touching anything.
2. The motion miracle — by which speed createth infinite mass.
3. Immaculate light speed — a constant reality, immune from the real world.
4. The photon phantom — that performeth contradictory roles simultaneously.
5. The legendary energy phantom — that hath power to exist as a self contained entity, to appear in many forms, and even to be the universe.
6. The Theory of Relativity and its contradiction Quantum Mechanics — both infallible.
7. A fourth dimension — with Time and Space joined in holy union by Cardinal Einstein, giving birth to numerous little dementia.

The list is left open for a host of imaginary strings, virtual realities, and many other things, which have been created by skilful mathematical manipulation.

## Einstein's enigmatic equation

At first sight Einstein's equation appears to be little more than a variation of the practical equation for work or horse power but the appearance is deceptive because the doctrine is not in the symbols, it is in the definitions of the symbols. According to the Theory of Relativity energy, mass, space and time are interchangeable therefore the equation does not merely represent a specific relationship, it represents the Platonic power of forms to transcend and eliminate the differences between material and non material things.

Einstein's equation,  $E = Mc^2$ , states that the quantity of energy in a body is equal to the mass of the body multiplied by 90 billion kilometres per second (kps). The  $c$  means that the speed (90 billion kps) is constant irrespective of how the body moves relatively.

The Theory claims that all bodies always possess a specific quantity of energy by virtue of their mass and, if the body moves, the speed of the body is also equivalent to energy, and this must be added to the existing mass energy.

Movement of the body therefore changes the equation to:

$$\text{Energy} + \text{motion energy} = Mc^2$$

Now that has changed the quantity on the left side of the equation.

So, to maintain balance the right side of the equation must be increased. But the Theory says that the " $c^2$ " (speed of light) is constant and can't be changed, therefore the  $M$  (mass) must increase. In other words, when things move they grow bigger. To prevent them growing bigger than the universe Einstein put a speed limit on them. One can do that when one has invented a way to play God.

Einstein's equation for energy can only apply to things moving at the speed of light, but Einstein prohibited anything except light from travelling at that speed, and he prohibited light from being anything (having mass). That means his fabulous equation cannot be legitimately applied to any physical thing in the universe. It can only be used by fudging the figures — by deception. Science can do without that charade.

## Farewell to Einstein's equation

The time has come to relegate the Theory of relativity to the realm of myths. The obvious start is to dispose of Einstein's constant single speed equation and replace it with a variable multi speed equation. We're in luck because we have already constructed the equation in the previous chapter.

It is:

$$P = Mv^2 \text{ in which}$$

$P$  = Push, the value of pressure x the distance,

$M$  = the mass of the smaller object, and

$v^2$  = the actual speed x push distance ÷ push duration.

If one knows the approach speed and weight of the smaller object one can calculate the force of impact which is the measure of the exchange of momentum between the impacting bodies. Conversely, if one knows the results of the impact one can calculate the cause.

The important difference from Einstein's equation is that our equation is applicable to all events. We have replaced the phantom Energy with Push (the basis of all behaviour). We have left only mass



unchanged and have discarded Einstein's constant speed in favour of actual speed. We stipulate that force or pressure is only a name for the exchange of momentum between bodies. Force is only between objects and may be measured by the mass of the smaller object (because action and reaction must be equal). The speed is the actual speed of approach or contact which may be averaged or generalised to represent linear, orbital or other speed actually involved.

By using only the smaller mass, instead of both, calculations are simplified. For instance, when an object falls to earth the impact is shared equally between the object and the earth and calculation of the full impact requires inclusion of both. But there is no need to become involved in the quantity of earth mass because we know the momentum change in the earth is equal to that of the object. Hence the total impact (change in momenta) is double the change of momentum attributable to the object.

Clearly, Einstein's equation can't cope with everyday events because it is absolutely confined to things travelling at the speed of light. Furthermore, it can't cope properly with commonsense nuclear particle speeds (Hawking blamed common sense) because such particles travel at various speeds therefore Einstein's single specified speed must be inadequate and misleading. If one wants to calculate the force of impact one needs to know the actual speed not just the common radiant speed of photons which is the speed Einstein selected.

In this real world mass objects are the only things that occupy space exclusively and they can not be changed into speed, energy, time or space.

So there we have it. Einstein's famous equation is not really an equation at all. It is a statement of faith in fictional forces that can supposedly move things at a distance and take their place provided they do so with mathematical precision.

### What else can ( $P = Mv^2$ ) mean?

It is a formula for measuring (comparing) events and therefore, behaviour and life.

How big is an event? One life is an event comprised of events. Indeed our world is made of things and their behaviour (events). The things are made of matter and ideas and the events are the changes in motion that happen (eventuate) when things communicate (collide) with one another.

In order to really understand things and events we need to be able to measure them, and all our measurements are done by comparing things. Of course, if we tried to compare anything with everything else at the same time it would be too complicated so we select the most fundamental things and use them as units for comparison (measurement) which enables us to, first, measure other things by counting the number of units they equal and, secondly, to compare all other things by the number of units they equal. We distinguish things by their differences.

That's how we got the unit of space (distance) from the length of one large foot. The unit of time now comes from the one year (divisible into seconds) it takes the earth to orbit the sun and thereby complete a cycle of seasons. From them we get the basic unit of speed which is a movement equal to one foot in one second.

We got the unit of weight (gravitational thrust) from the amount of matter that weighed one pound on a scale in London. The amount of weight of anything varies according to the square of the distance from the centre of the earth, but the unit is the force of the thrust against the scale and one unit must be the same everywhere. As a consequence, the amount of matter in a pound weight varies according to distance from the centre of the earth (bodies may have no weight in space) so weight is not a true measure of mass (the amount of matter in a body).

So, instead of using weight to measure mass, the thrust force of gravity is used indirectly to measure mass (or, more precisely, the inertia of mass). The most important thing is to remember precisely what it is we are measuring.

We know things by their measure and their measure is the number of units that they equal. If the difference is zero the things are equal (indistinguishable) and if the difference is plus or minus we can distinguish (recognise) the things by their quantity. Now, because we learn about our world by sensing the differences between things (seeing, feeling, hearing, smelling and tasting) we learn to compare the sensations and thereby distinguish and recognise the things we sense by their differences. In a nut shell we recognise (know) things by their differences. Therefore the better we can measure their differences the better we can know them and vice versa.

Every single one of our sensations are events in their own right. That is they are a change of motion caused by impacting mass. It helps if one envisages particles as tiny fly wheels with momentum in the form of spin, vibration, linear motion etc.

Billiard balls provide a simple model for illustrating events. Consider two balls colliding from various angles with various velocities and spins. Then consider the more complex exchanges of momentum when a large number of balls are involved. Any part of the action, one strike or a complete game, can be a prescribed event. It is appropriate to consider the balls as dead when not in the action and alive when involved in the activity.

Our commonsense equation is a mathematical way of expressing an event. Therefore it can be used to express the quantitative value of all things including life. But, because maths are neutral about quality as well as truth, it cannot measure the quality of life. For that we need commonsense.

### Mathematics: promise or threat?

Comprehension is a product of interpretation, not misinterpretation.

A relatively little knowledge of the stars and people, interpreted with commonsense, will yield a better understanding of astrology than the most ardent astrologers have. And so it is with mathematics. If we apply our commonsense to maths we should be able to understand the subject better than our two famous mathematicians, Einstein and Hawking. At the very least, any misunderstanding that we may have will not be as disastrous as their misunderstanding has been.

They misconstrued consistency and thereby lost the discipline of science.

We can forgive Einstein and Hawking for their mistakes (both have acknowledged monumental blunders) and we can tolerate their Platonic evangelism, but we should not accept their masquerading as

scientists. Furthermore, we must not tolerate administrators of education who, like the naked emperor's courtiers, stand by and watch embezzlers strip the realm of its treasure. Our commonsense is our treasure — it is the essence of our commonwealth.

The golden rule is simple. Apply the principle of commonsense, laugh at all metaphysical mathematics, and restrict serious mathematics to corporeal things.

Render unto mathematicians things that are sensible, render unto priests things that are metaphysical. The vast consideration of the diversity of the universe, from nuclear physics to astronomy, will remain within our domain. By rejecting all metaphysical maths we reduce the scope of our subject to our sensible universe.

That still leaves more than enough to mess about with.

The promise of the Commonsense Principle is that we may continue to have a universe in which to simply mess about.

## 12. One universe, two worlds

### Two worlds exist in different ways

There is, by definition, only one universe but it has two parts which are absolutely different in kind. One part is the tangible physical mass, the other part is the intangible system (the relationships between the mass particles and bodies).

We think simplistically of one part as Reality (the world of physical things) and the other part as Wonderland (the world of imagination). But that concept is inadequate. The intangible system comprises two fundamentally different realms. So there are really three kinds of things (three realms) making up the universe. They are:

1. All the physical things in the universe (comprised of particles).
2. All the necessary relationships between the physical things.
3. All ideas that have no necessary relationship to physical things.

All realms exist and in that sense constitute total reality. The difference between them lies not in whether they really exist but only in how they really exist. We maintain that it is absolutely essential to recognise the differences between the three realms. Our view is diametrically opposed to the Superstition of Relativity which promotes an unrealistic disregard for their differences.

### Platonic source of conflict

A propaganda war over these two views has been waged for thousands of years. The war and consequently the world has been dominated by the Platonic and Aristotelian superstitions that obliterate the distinction between the three realms and proclaim that the mind (imagination) is in any case dominant.

A historical clash occurred in 1616 when Aristotelian professors (confronted by progress) banned Galileo from publicising a common sense theory of the solar system which had been conceived by Nicolaus Copernicus (1473–1543).

Eventually the established authorities were forced to recognise that the sun and not the earth is the centre of the solar system but they have clung fiercely to their confusion of physical and imaginary worlds. As a tragic consequence they maintained that general ideas such as energy, church and state actually exist in the same way as physical things. Even more than that, authorities tend to assume that the state exists in a superior way. For instance, fascism denies the rights of citizens in favour of the state. The source of the problem is Platonic Superstition.

Here are some Apostles of Platonic Superstition:

- Plato proclaimed the supremacy of form. His philosophy glorified war and conquest and promoted slavery in the service of formal

democracy. Aristotle who tutored Alexander the Great of Macedonia was his prize pupil. The tattered remnants of Alexander's armies, blinded by superstition from the vistas of commonsense, still glorify the battlefields today.

- Ptolemy ordered the behaviour of the whole world. His disciples during twenty centuries of superstition, under various guises, applauded the slaughter and torture of non-compliant citizens. They crossed themselves and all around they double-crossed and drew the blind on commonsense.
- Einstein was not ordinary, he is a world figure an icon, a most famous centre stage superstar calling the tune of Platonic Superstition and conducting the international scientific orchestra. The social sciences play second fiddle to his space/time beat and counter poise the traditional theme and opus. Its theme is the control of emotions in war and peace, and the opus is the Behavioural Symphony of the Universe. Between performances, Einstein escapes the reality of the corrupt consequences of his leadership by slipping off to play as Albert in Wonderland.
- Einstein's contemporary school rivals chose other disciplines but their allegiance to Platonic Superstition was just as absolute — the form of the community (the State) was transcendental and the people absolutely subservient. Here are some of the prefects from Einstein's School of Superstitions.
- Adolf Hitler, who called the superstition Nazism, Benito Mussolini who called it Fascism, Stalin who called it Communism, and to the far east the tutors, who had not yet turned the pages of industrial revolution, turned back to early

history and called it the Sun God. Hideki Tojo was ready to use the blinding light of the rising sun and teach the world to worship, in a new guise, the fundamental form of Plato's Delusion. In Relativity it's called the Speed of Light. We call a spade a spade, it is superstition.

Thank heaven for the bigger boys who wagged school. We won't name them all now. We've already met some: Michael Faraday, Charles Darwin, who wagged it right around the world, and of course, Lewis Carroll. Mozart was a wagger too, but he paid the pauper's price. And we can't miss the giant wagger, Willie Wagner. He takes us for wild rides, wagging it with the Valkyries right back amongst the Olympic myths. But, like Lewis Carroll, he always brings us back to earth — tired but happy.

### Inadequacies of relativity

This story has already identified numerous inadequacies in the Theory of Relativity. Here we contrast the confused view of the two worlds prescribed by the Theory with the clear view of their differences revealed by commonsense. We can do it with reference to gravity, electromagnetism and the two nuclear forces. These forces, which dominate the Theory of Relativity are progeny of Aristotle's four fictitious forces. They are only superstition but Relativity proclaims that they move everything in the universe without touching anything.

In contrast we reveal the so-called forces as simply superstition and explain that every movement, every event is caused by the force of impact — momentum.

The scholastic history of gravity is a sad tale. It is a tragedy for common sense because the primitive idea of attraction is not demonstrable and those who have embraced the fantasy are drawn into endless deception in attempts to maintain the delusion. The Theory of Relativity is the classic case which pursues the myth to the limits of absurdity by sacrificing the reality of the differences between Time, Space and Mass. The Theory thereby destroys the foundation of commonsense.

Aristotle and alchemists during the Dark Ages believed that lightweight objects were lifted by a spirit called levitation and that heavy things were forced down by a spirit called gravity. Newton got rid of levity (he had no time for frivolity) by marrying levity with gravity. But unfortunately Newton emphatically believed in phantom forces and the fiction of a force of attraction was part of his faith. He simply adopted the superstition as gospel.

Nevertheless Newton was a great scientist and amongst his other brilliant work he portrayed light as a composition of speeding particles (photons). Our moton theory of gravitation pays tribute to Newton's genius and our theory provides a natural extension of his explanations of light.

Later scientists observed that starlight from beyond the sun appeared to bend slightly towards the sun as it came past the sun towards earth. This was predictable from Newton's idea of gravity attraction but it implied that photons have mass. But admitting photons have mass would have destroyed Einstein's theory that particles travelling at the speed of light would each be as big as the universe. So Einstein was caught and the best he could come up with was that space must be

curved about stellar objects like the sun. He then had to maintain that deception.

As described by Hawking (page 34), a British expedition in 1919 after observing an eclipse from West Africa concluded that light was indeed bent about the sun. But Einstein's protagonists, instead of recognising the result as a natural consequence of Newton's law of gravity seized upon it as confirmation that space was bent. To use Hawking's words in a different context:

Their measurement had been sheer luck, or a case of knowing the result they wanted to get, not an uncommon occurrence in science.

From this the Theorists concluded that light travels in a straight line around a circle (a geodesic in space-time, as described by Hawking on page 34). Einstein had invented a straight hook and wriggled free. And there we have it. A sad, sad, tale of the biggest fictionist in the world who was hooked but got away.

## Sources of the new moton theory

We can use the concept of a pressure driven universe (the moton theory) to develop a unified explanation of physics and a better general comprehension of our world. The moton theory is largely comprised of a collection of the gems of wisdom from our pioneers. They are presented in heartening contrast to the backdrop of the Dark Ages and the false hopes of the Superstition of Relativity.

In superseding the Theory of Relativity we will pay tribute to the brilliance of our pioneers of knowledge. There are too many to list but we will mention a few on the way. They dodged the School of

Superstition and took giant steps for mankind without the help or hindrance of the Theory of Relativity.

Robert Boyle (1627–1691) established laws for us to understand the relationships between the volume, heat and pressure of gas. His work paved the way, amongst other things, for steam and jet engines. His teaching that pressure is caused by the pounding of particles helps us to understand how mota pressure drives the world.

Michael Faraday (1791–1867) with James Clerk Maxwell (1831–79) founded the electromagnetic theory of light and led the way to understanding light waves and electromagnetic fields of force. They, followed by A.H. Compton, shed light on the activities of photons and it is up to us to get to know the actors, to understand the difference between the actor and the acting, and to learn what other acts the photons may perform.

They recognised that electromagnetic waves required a carrier such as the ether. In their time a simple concept of the ether was sufficient but no doubt they would have proposed a more sophisticated model (like our mota) to explain the local speed of light on earth. We'll back them against the Theory of Relativity which discarded the concept of a carrier of light waves. Loyal Theorists embrace the superstition that Royal Waves travel around the world (which they may do) without a helping hand (which they cannot do).

From real work we have come to recognise that electrons and atoms are, like miniature magnets, encompassed by electromagnetic fields. The earth also is surrounded by magnetic and other spheres so it is logical to assume that magnetic fields encompass our solar system, galaxies and ultimately the whole universe.

Such a concept is completely compatible with the idea that celestial bodies coalesced from swirling masses of elementary particles and it fits equally well down the scale to the formation of atomic aggregations. For instance, astronomers have observed the spiralling forms of galaxies and we have no trouble visualising how the smaller bits of galaxies join up to form larger objects.

When we amalgamate these ideas we can picture the galaxies as whirlpools generating electromagnetic fields in an active ocean of motons (the mota) and understand that because photons are composed of the same basic substance as magnetic fields their speed and other behaviour will be influenced by the behaviour of the galactic electromagnetic fields.

### Reason for rejecting attractive forces

Newton's simplistic idea of gravity as a force of attraction seems to work well enough for some things such as astronomy so why should we discard it in favour of gravity being thought of as pressure?

First because the idea of attraction has no factual foundation. No one is able to demonstrate one instance of an event or action being caused by attraction but everyone can demonstrate how pressure causes events and motion.

But there is a far more compelling reason for discarding the idea of attraction. The simple acceptance of the idea of one mysterious force opens the flood gates of fantasy. It is the kiss of death for reality. From that point on there is no clear firm ground on which to sort facts from fiction. Theoretical physics has consequently been bogged down by mysterious forces and force carrying things.



Hawking informs us that so-called grand united theories of physics do not include the force of gravity although gravity determines the evolution of the universe. He also says (p. 93) he has shown that stars can shrink to infinite density (to a point). In other words according to the Theory of Relativity the force of gravity can become infinite even for small things, as explained below.

According to Newton's "law" the force of attraction between two objects varies inversely with the square of distance separating them. This means that when they are only one trillionth of a metre apart the attraction should be one trillion trillion times greater than at one metre distance. So mathematically, irrespective of how small they are, two things with zero separation distance should have an infinite force of attraction. The principle clearly applies irrespective of the quantity of mass of the objects and this poses impossible problems for the Theory. For instance, if particles in the Big Bang or black holes were bound together by infinite attraction they could never escape and expand. The logic of the Theory collapses into the black holes with the energy of their superstition.

There are two important points here. First the Theory is unable to produce a credible explanation of the physical universe and second, when they try to do so the maths lead to absurd infinities. Their problem is that once they reject the fundamental distinctions between physical and non physical things they have no logical argument against the absurd conclusion that multiple things (indeed the whole world) can occupying a single point.

## Reason for embracing the moton theory

To put it bluntly: in view of the absurdities of the Theory of Relativity there is no excuse, no logical argument, for not positively seeking and developing a better explanation of what the universe is and how it works.

In contrast to Einstein's ideas, the moton theory defines particles as occupying space exclusively which means there must always be a minimum separation distance which is equal to half the sum of the diameters of the space they occupy. So there can be no zero separation distance and no reduction to the absurdities of infinite attraction and other forces.

But more than that, with its definition of position, time, matter and motion, and its concept of pressure and shielding (instead of attraction) the moton theory opens the way to a unified theory of the universe.

Here's a particular case of shielding to illustrate the principles involved.

It is not simply the mass and distance but also the alignment that determines the effect of the shielding. For instance, during a lunar eclipse when the earth is aligned between the sun and the moon the earth shields the moon from the sun's radiation. As a consequence the sun's radiation continues to push the earth outwards (say with 50,000 tons of thrust) but the sunlight cannot push the moon while it is shielded (in the shadow of the earth). The net effect is a passing period of lower pressure between the earth and the moon. This difference in the balance of pressure has the effect of pushing the earth and the moon toward each other.

Sunlight is not really typical of moton pressure and is used merely to illustrate the mechanism of gravity. In the illustration the particles (photons) lack the penetration power of motons and are from only one direction whereas the mota motion is in every direction and results in all things being pushed together.

## Electromagnetic forces

The Theory of Relativity is in double trouble with electromagnetic forces because in addition to an unknown force of attraction it also accepts without question a similar power called repulsion. The Theorists have far more faith than King Canute who failed to hold back the ocean tide by proclamation. According to their faith, positive and negative particles repel each other by proclamation without any explanation of how such a miracle can be performed. We say there must be something doing the pushing (repelling). Of course Theorists may claim that the particles are mutually ugly and therefore emotionally repulsive but commonsense says both attraction and repulsion are short hand descriptions of the way particles are pushed.

The first classical lesson in electricity is that there are two charges, positive and negative, and that like charges repel and unlike charges attract each other.

According to Hawking (p. 75):

The electromagnetic attraction is pictured as being caused by the exchange of large numbers of virtual massless particles of spin 1, called photons.

Such particles (massless particle is a contradiction in terms) are pure superstition and there's no explanation of how they grab an object and

drag it back home. Perhaps they are professional confidence tricksters like their progenitors. Hawking is flying in the face of facts. Einstein cut his teeth on the momentum of photons generating electricity and physicists such as A. H. Compton have clearly demonstrated that photons invariable push when they impact. Therefore the idea that photons pull when they push is absurd.

The exact nature of an electric charge and how they attract or repel has never been explained but pressure is a useful way of describing electron flow. If an electric circuit has more electrons at one terminal than the other that terminal is said to be charged (pressurised) and when the circuit is closed electrons charge around to equalise the number (pressure) at each terminal.

Michael Faraday demonstrated that the electron flow through a coiled wire generates an electromagnetic field similar to that of an ordinary bar magnet and induces magnetism in an ordinary iron bar. So we now have two more things whose exact nature has never been explained by the Theory of Relativity. They are electromagnetic fields and magnetism.

The motion theory opens the way to a better understanding of these phenomena by recognising that electromagnetic fields must have substance, that the substance must be motons, and the action must be achieved by pressure.

## Nuclear forces

Here also the Theory of Relativity is based on mysterious powers of attraction and repulsion but the Theory has made them far more complex and mysterious.

As Hawking explains (p. 77), the Theory has invented a super glue:

The fourth category is the strong nuclear force, which holds the quarks together in the proton and neutron, and holds the protons and neutrons together in the nucleus of an atom. It is believed that this force is carried by another spin 1 particle called a gluon.

Once again the particles are only speculation but the gluons are given colours. They supposedly form glue-balls and tie up coloured quarks with coloured string with incredible tension. The only consoling aspect is the recognition of the need for something more than attraction. The Theory really is in a sticky gluey mess.

There is one fact on which all agree — atomic particles can be subjected to incredibly powerful forces in relation to their size. But the classical idea of attraction has defied all imagination to come up with anything that could pull particles together with such power and complexity.

Pressure is the sole known agent of action and we know it can have immense force. The motion theory, as an alternative, suggests that all nuclear particles are comprised of motons forced together by the pressure of other impacting motons.

We have recognised a few of the world's great thinkers but we did not go back to the beginning of time. Nor can we, but here's a salute to the Egyptians who so long ago discovered that star time was more regular than solar time and thereby indicated the way to a concept of universal time. We salute their civilisation but we condemn their superstition.

Finally we pay tribute to Socrates (469–399 BC), a soldier, statesman and scholar who taught that common sense and intelligence are

communal products which are neither free from obligation nor the prerogative of the privileged. Socrates demonstrated their supreme value and their symbiotic fusion with ethics by sacrificing his life in preference to being dictated by superstition and cowardice.

Socrates was denied his choice to live in the real world so he chose to die that we might have the choice that now confronts us. We may have the best of both worlds, provided we recognise the differences between them.

## 13. The purpose of life

To be *or* not to be?

To be what? Or not to be what? We can *be* alive and we can *be* dead and while we live we can be damned by silly questions and sillier answers. Of course, Shakespeare was really asking *To live or not to live?*

Here's the fundamental question:

How, when, where, and why, do we live?

And here are some commonsense answers:

How? We live by reacting to being pushed around.

When? We live when we adapt to and use the pressures of life.

Where? We live in the relationships between mass particles.

Why? We live to explore the possibilities of symbiotic relationships.

Death? Oh yes! Death is what we do when we're not living

### More answers than questions

If those were *the* answers, there would be no need for a book. But *the* answer to such questions does not exist. We need to accept that there are more answers than questions. There are his answers, our answers,

and their answers. There are also better, best, and very best correct answers.

But questions about life have a transcendental status and we are faced with benign and malignant answers.

The (an) explanation for such difficulty is that questions and answers are ideas, and ideas cannot be measured because they are intangible. Symbols representing ideas must be tangible to be sensible; but the ideas are not so constrained. Ideas can't be tangible and they don't have to be sensible.

A school pupil may get a tick in arithmetic for selecting the correct tangible symbols ( $1+1=2$ ) but a donkey might do that. Success in selection does not prove that we've got the intangible ideas right. The symbols exist in a different world from our understanding of what unity is, of what it is to be one, or to be one pair of ones. And nowadays, even the definition of life and death is under review. But we have a basic definition — life is an event, a physical symbiotic activity.

### Our role in the universe

As explained in chapter seven, the universe is driven by pressure generated by momentum. It is not driven by mysterious forces of attraction. All known engine power is basically a difference in pressure and it is this principle that drives the universe.

Unfortunately some historic misinterpretations of events have corrupted our comprehension of our universe and consequently damaged our destiny in it. For instance: when Archimedes lifted a heavy object, only half of his effort went into moving the object and the other half was imperceptibly absorbed by the earth in an equal and opposite reaction — and was disregarded. Einstein took advantage of that lost reaction and claimed that it is energy, that it is equivalent to mass, and that it hides in the object.

Well, we've superseded Einstein's superstitious theory with commonsense and put the reaction back in its proper place, so there's now no excuse for pretending that activity is mass and mass grows bigger with speed. There is no problem: the equations balance and everything can now get back to normal.

When Newton saw things fall, he simply accepted the ancient myth that objects possess spirits that make them sink and he modified it. According to Newton, every object reaches out and grabs every other object in the world and pulls without pause for ever and ever. Now that we've split atoms and discovered how small some things are, the theory is having a little difficulty in fitting countless billions of endless arms on to all the smallest things in the world. In fact they haven't actually fitted the first arm so far, because the arms must have fingers to grab with and with so many fingers poking into eyes (they grab at everything) the theorists are absolutely unable to see reality.

We've removed the blindfold and dismissed all the spirits that are supposed to be irresistibly attractive and the repulsive ones also. We've got the motions working for us now and they do the job fine, simply with a little pressure and no fuss at all. So, what is our role on the world stage?

Our role consists of three interlocking parts: actor, action and interaction:

- Our first part is in the realm of tangible mass particles in which we make an appearance as Actor, a unity of incredibly complex divisions of cooperating assemblies of absolutely individual particles, destined to emerge and grow and flower and fruit and seed another generation and to disintegrate. And possibly to perish in the process.
- Our second part is in the realm of intangible relationships in which we appear as Action, an indefinable sequence of fantastic images comprised of shapes and motion and colours, odours, flavours, textures and sounds, destined to develop selective and coherent ideas but liable to impositions, chaos and fading away.
- Our third part is in the realm of communication between tangibility and intangibility in which we appear as Interactor, dressed in the wealth of intelligence which is the pure-bred product of commonsense; destined to develop imagination and to lead in the exploration of the possibilities of life and in modifying destiny; abundantly provisioned with emotions but miserly provisioned with will power for the task, and liable to mistake delusion for elucidation and thereby suffer demission.

The possible modifications to destiny are marginal in relation to the universe but are a matter of life and death on earth. That's why it's important to call on the best consultant in the world — commonsense.

## Laughing at Relativity

This is an essentially optimistic tale about the universe, how to think about it intelligently and how to avoid nonsense. Certainly we mercilessly discredit the Theory of Relativity, and say good riddance to it, but that's justice. One has to be cruel to perpetrators in order to be kind to their prey.

We expose the Theory of Relativity as an anti-scientific doctrine of behaviour which prohibits and destroys commonsense. But fear not the fate in store for Einstein's mathematical monstrosity. We do not exterminate it; we simply recycle it as fuel for science fiction, and, as a fairy tale, it becomes much more fun.

We explain why the Theory is superstition, not science, and how it is a modern version and imposition of Ptolemy's dogmatism. But far more than that, we provide a commonsense universal motion momentum theory in complete replacement of Relativity.

In chapter ten, we disrobed Einstein, Cardinal of Mathematics, for committing the sin of inconsistency. But turn not your eyes away in false modesty. It's not the man that stands stark naked there. It's the stupidity of superstition serving everywhere, for superstition has a vast wardrobe, a suit for every season, a fit for every fashion. And if justice in the courts is high beyond your reach, look beneath the wealth of wigs and convoluted speech, and Lo! stirring up the stench, there's Superstition self-serving at the bench.

Be sure to ask what is the matter *with* the world, but ask first what is the matter *of* the world. Matter is the substance that is commonly sensed by intelligent creatures. Whosoever substitutes that substance with superstition robs humanity of its wealth, because the substance of

matter is the sole source of our intelligence. Einstein's heirs are already foisting virtual mass upon us and confusing virtuality with reality. The next step is virtual existence — which could set a society well on the way to virtual extinction.

## Remaining mysteries of life

Although our story provides a basic explanation of what the universe consists of, how it works, and our role in it, many things remain mysterious. In particular, *will* power (its ability to influence the behaviour or material bodies) and the *purpose of life*. Both are likely to remain mysterious, at least for some time. But we need a purpose for life now, so the intelligent option is to fashion a purpose with the intelligence we now have. We'll summarise the problem and then give it a go.

The general consensus of our extraordinarily knowledgeable scientists — including geneticists, neurologists and psychologists — appears to be:

Minds (or awareness) are always associated with brains but cannot be precisely located or defined; therefore, mind and brain must be two different things. Furthermore the link between the two remains a mystery — full stop.

We agree so far and take the next step forward. Brains and minds are not merely different things, they are different kinds of things, they exist in a different way from each other. This story has already demonstrated that no matter how incisively a physicist seeks speed in a particle, no speed can be found because speeds exist between particles.

The link between speed and particles is not a mystery; speed is the link — full stop.

And so it is with minds: they cannot be found in material, they are like the organisation of a corporate body — intangible. If we search for the organisation in an international corporation we will find parts of it between any two communicating members of the organisation, and in every place where the organisation exists. But more than that, we will find different levels of organisation and increasing levels of intelligence as we approach the core policy formulation and implementation areas.

Philosophers generally define the purpose of intelligence along the following lines:

The function of intelligence is to enhance the chances of survival and thereby continue adapting individual life to cope with the environment.

That merely moves the question to the purpose of survival, and the real question — *What is the purpose of intelligent life?* — remains unanswered. Let's escape the phrase maze, take a short walkabout and come back with a commonsense attitude.

## A commonsense purpose

Utter chaos is possibly a form of life but we are concerned with more orderly life. If we assume that before life there was chaos, then the absolute primitive form of order would be an association of particles mutually sheltering one another from chaos — shielding one another from some of the eternal bombardment of chaotic particles. Primitive groups would join together to create larger organisations.

The universal process of incorporation from atoms to stars and to galaxies would follow the same principle, and the purpose of protection would be the same.

So do galaxies have minds, do they think and have a purpose?

All bodies have an aura, a kind of magnetic field that vibrates and radiates. In the absence of any adequate scientific explanation, we suggest that such activity is reaction to the bombardment of all bodies by motons and other minute particles. If the bodies are struck and deformed they can, within limits, recover their form. That capacity is a common but incompletely understood property called elasticity.

Could it be that the aura, the organisation, of the bodies that, like the mind of an intelligent creature, enables a bombarded body to adapt to such changes? How different is elasticity from creature reaction and recovery? Does it constitute a primitive mind and thinking and is that difference similar to the difference in levels of the organisation and intelligence of complex corporate organisations?

Even if we had the answers to such questions, we would still want to know the purpose of it all. Here's a simple hypothesis for the purpose of life.

Life is the unavoidable alternative activity to chaos and it is therefore an orderly existence in which the level of life is proportional to the level of organised activity. Minds and will power are comparable to the property we call elasticity in bodies. The purpose of minds is to explore the possibilities of life, including survival, and our capacity to be aware and understand life is a discovery of that exploration.



When we regard the virtually infinite variety and diversity of aggregations of particles and their relationships, it is clear that a single human brain can hold the merest fraction of knowledge. We cannot fully know ourselves, let alone the folk next door or the great outdoors. But we can understand that all creatures share life with us and in a real way we share the life of “inanimate” things like our rivers and our rotating planet.

That hypothesis does not conflict with religious beliefs because whoever so wishes may believe that their God planned and created the mass and its momentum and all of its possibilities. And that includes devotees of the Theory of Relativity who may claim that Zero Energy or Maths is the Creator. Also, atheists may accept it as an interim answer pending further elucidation because it does not invoke external power. It does not speculate on the beginning or the end of matter or of the universe.

We say it is logical and sufficient for the day, so let's get on with the purpose of life.

### Getting on with the purpose of life

To explore the possibilities of symbiotic relationships we need to develop our understanding of life, and for that we must depend on our commonsense. What a challenge, and what a range of possibilities awaiting such exploration.

We just have space to peek into a few possibilities.

First and foremost the recognition that the universe is driven, like all activities, by pressure and that there is no force other than the

pressures of impact, opens up a new realm of possibilities for all of us, especially physicists.

Second, the recognition that photons must have mass and therefore momentum sheds a floodlight on new branches of science. For instance, the green colour of vegetation indicates that plant rhythm is harmonised to reflect blue and yellow and absorb the slightly lower frequency red photons and uses their momentum to drive plant activity. An understanding of that process can extend to our metabolism, and on the way throw light on problems such as skin and other cancers. Motion and momentum maps and diagrams of body mechanisms and systems may become as useful as existing illustrations.

Third, the abolition of mythical attractive forces opens a new book on gravity and a new pressure-driven world to explore.

Fourth, the recognition that light photons exist in a different way from the way in which light waves exist, and that both the photons and their wave formations must have a full range of speeds, offers another look at the cosmos and a chance to get it right according to commonsense.

Fifth, magnetism — driven by pressure and not attraction? What a challenge to discover and understand the semiconductors of the photons that constitute magnetic fields. Surely there's a photon semiconductor revolution about to follow the electron semiconductor revolution that provided us with computers.

Sixth, the recognition that ownership is subservient to control, that wealth is control of power, and that money exists in a different way

from wealth, opens the way for getting statistics, economics, and politics in a proper perspective.

But most challenging of all: what shall we do with our wealth, the product of intelligence? Trade it for superstitious trifles? Or invest it in accordance with the commonsense principle on exploring and understanding our symbiotic relationships?

## Epilogue

There is no natural right to life, no natural right at all except the right to try to do anything at all to survive. There is not even a natural right to commonsense and intelligence, for they are rewards of the symbiotic relationship we call civilisation. Continuation of those rewards requires effective implementation of the social contract and defence against its exploitation. The most rewarding and healthy way to achieve that is to nourish and exercise our commonsense.

The ancient so-called civilisations of the Incas, Egyptians, Greeks and Chinese surrendered to Superstition and suffered the consequences. The message on the wall about that is becoming powerfully clear. Let the superstitious inherit the ways of their ancient ancestors but don't let them take our civilisation with them.

### Life is symbiotic

Life is behaviour, and all behaviour consists of sharing changes in momentum. Therefore in a broad sense the sun is alive because it consists of momentous changes. In contrast to the sun, which suffers a chaotic existence, we enjoy a relatively orderly life; but both kinds of life stem from the same kind of relationships between elementary particles. The relationships originate in the joining of particles and the mutual shielding from, and adaptation of, the universal momentum of elementary particles.

According to this concept, even the most primitive mass body senses the impact (pressure) of momentum, and the body lives so long as it snares that sensing in a symbiotic relationship. Consequently, both the quantity and quality of life are measures of the extent of that symbiosis. In other words, the quality of life depends on the way it develops and applies commonsense.

It all begins with simple pressure, simple sense and simple life, and as complexities of life increase so does commonsense and the intelligence to cope with the complexity.

So, both life and intelligence are born of commonsense in a symbiotic association.

### We've described the universe

We have established that by logical definition there can be only one massive universe and that universe must consist of elementary particles and have a centre of mass. Furthermore, in accordance with the law of motion (for every action there is an equal and opposite reaction) the centre of the universe is fixed and absolutely immovable whether or not it is occupied.

Therefore, if we could locate the centre of the universe, we could measure Universal Distance, Space, Time, and Velocity, which exist irrespective of whether they are measured by human observers.

We have also established that the fundamental requirements for the construction of a Real Universe are Matter, Momentum, Space, and Time; and that those resources are absolutely interdependent and make sense only in unison. They all came to sensible existence in conjunction as the Universe. They, in unison, are the generators of behaviour, sensation, and commonsense.

In the real world, as distinct from countless imaginary worlds, Time, Space, Matter and Momentum were born at the same time; but Commonsense cannot tell us how, when, where, or from what they came. We can only speculate about the origin because Commonsense came later. That's because the bits of matter had to bump into one another and cause sensations, which started communication, which led to symbiosis and eventually to commonsense.

But we can recognise the differences between real things and imaginary things and thereby deduce real universal history.

### **In the beginning: a reconstruction**

Commonsense is our source of information and intelligence so we commissioned Commonsense for a reconstruction of the Universe.

Here's a progress report.

The basic task of commonsense is to recognise and measure differences between things. Commonsense says that matter differs from all other things in the universe because Matter is the only thing that occupies space exclusively and is the only thing that physically resists changing its ways. Matter always shares momentum equally with other Matter it meets, but cannot share momentum with any other thing.

Conversely, all other things, including Time, Space and Momentum, exist in a different way from Matter: they can't occupy space exclusively and therefore exist only as intangible things relating one thing to another. They cannot be part of mass particles and can exist only as relationships between mass particles. They are not touchable and cannot push anything or be transformed into matter.

Before Commonsense could get on with the reconstruction, there had to be the material of the new universe (specified as elementary mass particles) and also some action (which could only come from the motion of the matter). We naturally called that the work force. We had the fixed point (the centre of the mass of the universe which can never be moved) and Space, which is another word for size.

We lined up all the work force applicants, and if you could have seen some of the applicants jostling for position you'd have recognised the problem. Bossing them all was the big bully called Gravity Attraction, but fortunately he couldn't reach us and when we called his bluff he couldn't reach anything at all and shrank away like a superseded theory (which is what he is from now on). Gravity was unable to demonstrate how it could cause any event or do anything by attraction. So there was no place in the work force for the myth of attraction. Instead we discovered and employed Gravity Pressure.

Then there was Magnetic Attraction, the illegitimate offspring of Gravity Attraction. We won't bore you with details of the interview and subsequent interrogation of that pseudo-photon applicant. The difficulty was that Magnetic Attraction had no commonsense credentials and could not produce any evidence of ability to do anything at all. She could not demonstrate how she could move things at a distance without touching them. Eventually, after a picnic in the

magnetic fields we were much relieved to see her ugly partner, aptly named Magnetic Repulsion, take her behind the walls of history. Perhaps that was a natural consequence of being stripped of her veils and left exposed. We enlisted Magnetic Pressure. Next applicant, please.

Nuclear forces then fronted up. There were two families of them, one named Strong and one named Weak, and they waved a banner called the Mighty Atom. But when we pushed the banner aside there was the nonsense and confusion caused by magnetic Attraction and Repulsion. Even with the most powerful microscopes and most incisive surgery there was not one shred of evidence that the nuclear forces could perform any work let alone the duties we had before us. So Commonsense dismissed them and banished them from the project.

That left us with only the mass of elementary particles pushing and shoving and Lo! there before us was the full work force of the universe, constantly toiling and answering to the name, Momentum. We were at first somewhat sceptical that such tiny elementary particles could accomplish such momentous works. Commonsense eventually assured us that not only could Momentum do everything that was to be done in constructing a new universe but Momentum was the only force available. Every other applicant was Superstition in disguise.

Once the job of constructing a universe is started there's no stopping the work force. Out of absolute chaos comes mutual shielding and the symbiotic relationships that set the pattern for the universe. Contrary to traditional teaching, the universe is not deteriorating into disorder (although the human species may do so): it is evolving from a chaotic birth to a solemn death by levelling out differences in momentum and

forming inert bodies of matter such as lead and dead stars. But only a tiny fraction of mass has succumbed to that fate, so there is still a lot of life in the old universe (our new universe).

At first there was only Universal Time and no Daytime or Night time. Days and seasons had to wait until there was a solar system with a planet that could turn its face away from the star that provides the momentum for life on earth in the form of sunlight. With that milestone, that creation of the difference between day and night, came more intelligent creatures and the emergence and proliferation of Superstition.

We have just tempted Superstition in the above narration. Time, Space, Momentum and even Commonsense have no real existence of their own. Such general names describe activities and not actors. To confuse the two, to lose sight of the crucial differences between actors and their acting, is to fall prey to Superstition. That was the fate of the Theory of Relativity which abandoned science for superstition. But in our new universe Superstition has only a comic role, a "down in Wonderland".

In the previous chapters we have talked of many things, from real visitors in Wonderland to phantoms in the real world, the actors and their acting, so we won't repeat them now. But there's just time for a little optimistic philosophy.

## Science versus Satan

Science is the precision with which differences in things are commonly sensed, understood and adapted. Superstition, the disregard for differences, is the Satanic alternative to science. Art is not an

alternative to science, it is the expression of both science and superstition. Intelligence enables us to comprehend the differences between science and superstition.

Clearly our most formidable task is overcoming the Superstition which has been so widely favoured by Authority and which deceives and cripples our intelligence. We have not been successful so far because Superstition develops new forms (like new strains of virus) such as Relativity, Fascism, Deregulation, Economic Rationalism, and Endless Inalienable Rights.

There is a need to support those who recognise that Rights are inseparable from Responsibilities, to welcome genuine science and to cast out Superstition.

### Love is born of commonsense

Life provides only one natural right — the right to do anything to survive. That would include the right to cooperate, to compete, to procreate, to con and to kill (in short, to consume, to communicate and to create). We trade that natural right to do anything for the constraints of cooperation, which we call civilisation, and we call that trade, that agreement, the social contract.

We do so because civilisation increases our ability to survive and enhance life. It enables us to develop and expand our intelligence and wealth and thereby shape the physical world to match our imaginary ideal world.

Resort to unbridled power and repossession of the primitive natural right to kill and/or procreate (the equally serious beginning and end of life) constitutes breach and abrogation of the social contract. The

proper penalty is banishment from the fold. We could have learnt that lesson from any good bible, just as we may learn that there is no natural right to land. Commonsense can tame the territorial imperative with cooperation. The alternative to violation of the social contract (the source of all our rights) is cooperation and development of the mutual benefits available from commonsense: that is, confirmation of the social contract. We call it love.

### Wealth, will power, commonsense

Wealth is the ability (power) to exercise choice (will) — from which we get *will power*. Commonsense is our method of identifying real differences and alternatives: therefore, the combination of commonsense and will power produces our ability to determine our destiny.

The measure of our skill in exercising that ability to change things (to adapt the environment to suit us and vice versa) is intelligence. We could say that our imagination is the planner, intelligence is the realistic consultant, wealth is the power to implement or stuff up the plan, and we are the net result.

Although both wealth and intelligence are products of commonsense, common ownership of wealth and intelligence is not guaranteed, so wealth may be used with or without intelligence; for good or for evil. It may be squandered on nonsense.

The common name for the custodian of wealth (power) is Authority, and human disasters (wars, depressions and environmental vandalism) are often a consequence of Authority deceiving Intelligence (the chaperon) and eloping with Fickle Imagination. Fickle imagination is

just another name for Superstition and, of course, we are left holding the baby. The Egyptian pyramids are big babies but they are dwarfed by the grave yards of some of our symbiotic partners.

Energy and Wealth share a remarkable mystique. It is the ancient superstition that there is no real difference between tangible and intangible things. That mystique carries the virus that destroys our recognition of the differences between things and thereby cripples our commonsense.

The Theory of Relativity claims that mass is created by the speed of light. Common economic Theory claims that wealth is created by the speed of the circulation of money. Both theories stem from superstition, both undermine reality, and both share in the corruption of human intelligence and behaviour.

Consider for a moment the distinction between money and wealth. Money is by definition tangible and can be counted. Wealth is intangible, uncountable, and unnecessarily mysterious. There's no shortage of roubles in Russia, no lack of tangible money, but the nation's intangible wealth has been squandered on Superstition. And Superstition is sapping the strength of the other Super Power as well as second and third world nations.

Here's another instance of the mystery. What happened to the value (wealth) of the Japanese stock market shares when they lost half their value in 1992? The lost wealth was enough to buy most of the land and resources of the United States of America. The interest on it would have bought Australia. Who created it, who annihilated it, in whose pocket was it poked? What was it?

The short answer is: it was the power to govern, the power to draw money against the future wealth of nations, the power that unwitting and corrupt governments have handed over to collaborating money lenders. But the story of the money and the gun needs another book.

We do not know precisely how intangible intelligence interacts with tangible objects but we do know that our power to affect behaviour has increased to the extent where survival of life on earth depends on how effectively we ensure that Intelligence is not deceived and that Authority does not squander our wealth on Superstition. In short, to continue life we need to produce plans that realistically match our wealth and always make sure we control the behaviour of Authority.

This story attempts to explain how superstitious doctrines have been imposed by pen and sword to fortify entrenched authority and, in particular, it attempts to expose the superstition of Relativity and explain the role it plays in perpetuating the power of Superstition to corrupt human intelligence. The essence of that role is that Relativity has the status of scientific authority and when Science proclaims that tangible bodies can change into intangible abstractions and vice versa it undermines the basis of commonsense and opens the flood gates for fraudulent doctrines which cause wars and other human disasters.

Superstition has been exploited and presented like an endless string of Trojan horses to promote and justify the wars and other strife that have dominated human history. Today the Trojan horses are made of money and the superstition is hidden under a blanket of scientific theory, but the power struggle continues with rapidly escalating stakes.

We may have the power to determine our destiny but we also require intelligence and will to apply it properly. The immediate imperative is



to make our choice between Superstition and Commonsense. It is urgent because nothing short of an intellectual revolution will turn the tide in time to prevent global devastation and the Time for that revolution is flying by.

Where to start the revolution? To come out on top it's often best to get to the bottom first, so what better place than the social contracts? Commonsense social contracts would recognise the differences between things: the differences between superstitious and realistic rights and obligations, the differences between wealth and money, and the differences between cooperation and compulsion. Participation (citizenship) would be voluntary, not compulsory and with no automatic citizenship. Every citizen would have to demonstrate comprehension of the contract and have to exercise a choice: a commitment to civilisation.

But, as Omar Khayyam might say:

Time is on the wing to where we die,  
and Time has but a little way to fly.

It's a *matter of Commonsense*.

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# Norman George Wheatley



Norm Wheatley was born in 1921 in Perth, Western Australia, the ninth of a family of ten children. In his teens he weathered the Great Depression in Perth and on the Western Australian goldfields. During the Second World War he served in the Australian Army.

In 1947, he met Joy Bowman and they married in 1949. Norm joined the Australian Public Service and in 1963 he and Joy settled in Canberra. He qualified as an accountant and is also an Arts graduate.

Norm describes himself as having “no outstanding talent ... a happily married, innovative all-rounder who enjoys friends who are willing to give it (life) a go.”

More to the point of this book, Norm believes life is the activity (a better name for energy) of matter impacting on matter – which can be measured, but not qualified, as:

*Momentum by Space over Time* and stated as:  $L=Mv^2$

He also believes that God, better described as Fate, *does* gamble and remains unpredictable...