

The Universe,

Dialogues on

Life and

our Changing

Understanding

of Reality

Everything.



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Sarah Durston and Ton Baggerman

The Universe, Life and Everything...

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*Dialogues on our Changing Understanding
of Reality*

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1 What is reality?

The book you are holding is about the way we view the world.¹ It is about the way we understand reality: the world we live in, our place in it and the universe around us.² The way we view our world is changing. There is a perceivable shift in the way people (both scientists and non-scientists) think about it. Furthermore, this is a necessary and timely shift. Our modern understanding of reality dates back to the work of Descartes, Newton and their contemporaries, some 350 years ago. It is the backbone of modern-day, Western society and it has been a manifestly successful way to understand the world around us, bringing us science, industry and the Enlightenment, leading to spectacular increases in wealth worldwide, allowing culture and society to flourish. However, there are areas where our current scientific world view falters. There are phenomena that it cannot explain, as we will see further on. The premise of this book is that there is a shift occurring in the way we understand reality, precisely because our current world view is reaching its limits. People are beginning to understand the world and themselves as interconnected, rather than as individual entities bound together only by cause and effect. The goal of this book is to sketch a picture of what this new, connected world view might look like. First though, let us explain what the authors, Sarah & Ton, mean by 'our current world view'.

1 The title refers to the third book in Douglas Adams' 'The Hitchhiker's Guide to the Galaxy' series. In the series, he finds that the answer to 'life, the universe and everything' is 42 (even if nobody remembers the original question).

2 In this text, the word 'we' is intended to refer to people in general. Although it could reasonably be argued that it more accurately refers to the subset of people that is the audience the authors (Sarah & Ton) expect this book to be most of interest to (people with a Western background and interest in science). The authors have referred to themselves in the third person to avoid confusion.

What is our current understanding of reality?

Our current scientific understanding of the world builds on the work of Descartes, Newton and their contemporaries in the 1650s, who in turn built on their predecessors. Descartes suggested that mind and matter should be considered separately so that the mathematical laws that govern the behaviour of the matter could be studied. Newton then began to uncover the workings of these laws, famously being inspired to describe gravity when an apple fell from a tree and hit him on the head. From these beginnings, our modern-day natural sciences, including physics, chemistry and biology were developed. They are at the basis of our currently accepted scientific paradigm³ that states that reality is built out of matter and energy that can cause matter to move, change form and interact with other matter. The assumptions we make about our world every day are built on this central premise. Some of those are:

Atomism/materialism: the idea that the world with everything in it and the stellar realm around it consists of mindless, separable pieces of matter. The question ‘what is matter made of?’ is answered with ‘smaller bits of matter’ all the way down to the subatomic level. In principle, there are no limits to the scale of this analysis and this assumption is usually presumed to hold at both the extremely large scale, including stars, galaxies and the universe, and the extremely small scale, including atoms and electrons.

Determinism: the idea that there is a basic set of (physical) laws that predict the behaviour of physical objects, such as their location and speed. Gravity is an example of such a law, where the force with which two objects attract each other is determined

³ The word ‘paradigm’ refers to a distinct set of theories, concepts and thought patterns that (implicitly) underlie our (scientific) understanding of the world. This manuscript follows Thomas Kuhn’s suggestion that science does not progress linearly but rather through ‘paradigm shifts’ that open up new approaches that would previously not have been considered scientifically valid. The authors suggest that is what is currently happening.

by their mass and the distance between them. Another such law is the law of cause and effect, where the events we observe in the world around us do not come randomly out of nothing. They are preceded in time by the other events that cause them. An extreme position in determinism is the conclusion that free will does not exist. After all, if cause and effect underlie reality, how could something as intangible as wanting something affect it?

The absolute nature of space and time: the idea that space and time are objectively measurable and independent phenomena, and that they merely form the stage for material processes. Furthermore, this stage is callously immune to the events taking place on it. Of all the materialistic assumptions, this may be the most intuitive one: after all, we all have experienced time ticking away at a frustratingly slow pace, with no apparent way to affect it.

Overall, the classical scientific paradigm views nature as a machine with interacting parts, like something of a giant clockwork apparatus. If we analyse the apparatus by investigating its parts and their cause-effect relationships, we can understand and manipulate it. While we have expanded this metaphor to include more modern versions (such as comparing our brain to a computer in neuroscience), this has been at the basis of our world view for the past few centuries. It has become so engrained in how we understand reality that we literally experience the world that way: we perceive a distinct self; an 'I' that observes and interacts with a world around us that is full of physical objects. This is so obvious to us that it is hard to imagine that this is not how people have always experienced the world. However, to many people in the period before Descartes and Newton, the world was a magical and potentially fearful place, where deities could affect (and therefore ruin) lives by sending disasters as punishment, and who might send omens as warnings. It was therefore necessary to interpret the signals sent to you by nature. The world was not a physical apparatus, it was a place run by an external force. It may seem ridiculous to us now, but for people at the time this was as true as our world view is to us today. Just as they did, we

have forgotten that our world view is a working model that we have constructed: it is a paradigm, not the absolute truth. People at different times (and in different cultures) experience reality in different ways. The authors of this book, Sarah & Ton, wrote it because they believe the way we experience reality is changing; that it is a good and a timely change; and because they wanted to investigate what shape our new understanding of reality is taking. So far, it has been a wonderful journey, one they hope will long continue. It has felt like being Alice wandering through Wonderland, every new finding ‘Curiouser and curiouser’ than the last.⁴

What has been the approach?

The method Sarah & Ton chose to investigate what a new understanding of reality might look like was to seek out visionaries from widely varying backgrounds, and ask them how they view the new paradigm that we are moving towards. Admittedly, this was a risky approach, as the answers may easily have varied equally widely and not have painted a coherent picture. However, that is not what happened. What Sarah & Ton found was a remarkable agreement between their ideas and those of the people they spoke to, an encouraging sign that there is indeed a paradigm shift underway. Now, before letting the contributors tell you about their ideas themselves, let’s introduce the cast beginning with the authors.

Sarah & Ton first met over sushi, a very good way to meet someone. It turned out that they were on similar quests but from different perspectives. *Sarah* is a professor in neuroscience. Her work focuses on the brain in developmental disorders, such as ADHD and autism, and her scientific focus had always been

4 From Lewis Carroll’s novel *Alice’s adventures in Wonderland* (1865). Interestingly, Carroll also makes multiple references to the number 42 in his works (see note 1).

how brain function can lead to symptoms. For the last couple of years, however, she has been realising that we do not seem to be getting any closer to finding answers and started to wonder why not. This question brought her to the science of consciousness: symptoms in developmental disorders, and psychiatry more generally, are part of human experience. For the person with a diagnosis, symptoms are part of who he or she is. Clearly therefore, we need to address how brain function relates to the experience of being a person, if we are to understand psychiatry.

Ton is a psychotherapist. In his work, he became increasingly worried by the current professional standard of classifying clients and their problems into categories of 'disorders'. Talking to clients invariably reveals strengths, desires and aspirations, in addition to problems. In an attempt to reconcile these two aspects of psychotherapy, he began to ask what the common ground is between these two different approaches. It struck him that we are all trying to give meaning to our lives by combining existing possibilities into new ones. This may sometimes be frustrating and is not always successful, but together these individual processes go into the wonderful jigsaw that is human life.

Herman Wijffels & Herma van der Weide: the first dialogue took place in October 2015, when Sarah & Ton spoke to Herman Wijffels and Herma van der Weide, husband and wife. *Herman* is a Dutch economist. He was the director of one of the largest national Dutch banks, the Rabobank, for more than 25 years, the chair of the Socio-Economic Council (SER)⁵ and then the Dutch representative at the World Bank in Washington. He has been politically active and in 2006 succeeded in leading the negotiations to form a new coalition government in the Netherlands after others had failed. He has been called the 'best prime minister the Netherlands never had'.⁶ After he retired from political life and

5 The Socio-economic Council is an important advisory committee to the Dutch government.

6 By Wouter Bos, deputy prime minister of the Netherlands at the time, in a national Dutch newspaper (*de Volkskrant*), June 16th 2009.

the financial sector, he was appointed Professor of Sustainability at Utrecht University in the Netherlands. There, he founded the Sustainable Finance Lab. He is on a mission to inform and inspire people about a more durable way of life, taking the sustainability of our planet into account. He argues that we need to move away from our 'linear' economy, where goods are consumed and then thrown out to a 'circular' one, where waste products form the raw materials for new products.

Herma was originally trained in Dutch literature and language and taught that topic at a high school for many years. She learned transcendental meditation from a colleague, and she and Herman meditate together daily (Herman practises Zen meditation). She went on to train as a Jungian psychotherapist and now has a Jungian practice in the Netherlands. She has been surprised by how many academically trained clients come to her to engage their more spiritual side. She also still teaches literature, as investigating Jungian archetypes is very much connected to literature for her. She and Herman run leadership programmes together.

Henry Stapp: in December 2015, Sarah & Ton spoke to Henry Stapp. Henry is a (retired) Professor of Quantum Physics at the University of California's famed Lawrence Berkeley National Laboratory. He has written books on the relationship between physics (quantum mechanics in particular) and consciousness, with titles such as 'Mind, Matter and Quantum Mechanics' and 'Mindful Universe: Quantum Mechanics and the Participating Observer'. He draws from the work of founders of quantum mechanics such as Wolfgang Pauli and Werner Heisenberg (both of whom he worked with personally) and John Von Neumann. As early on as the 1920s, quantum physicists had concluded that the evolution of the physically described universe was not governed exclusively by mechanical laws, but is controlled in part by our human value-based intentions. The central purpose of much of Henry's recent work has been to explain how our conscious minds can influence the evolution of the physical universe.

Alexander Wendt: In August 2016, Sarah & Ton spoke to Alexander Wendt. Alex is Professor of International Relations in the Political Science Department at The Ohio State University. In the late 1990s, Alex challenged realism, the dominant framework in his field. He disagreed with a basic assumption (that he later recognised stems from our classical paradigm) and proposed a more interactive framework, known as constructivism. In realism, states are regarded as billiard balls, interacting with each other in a mechanistic manner and driven mainly by the pursuit of self-interest. In such a world, conflict is the rule and cooperation an exception. Alex pointed out that states, as well as the people within them, are driven by many different motives. Instead of behaving mechanistically, states attribute meaning in interpreting each other's actions and deciding how to react. One example is that most Western countries consider the few nuclear weapons in North Korea to be a far greater threat than the hundreds in the UK. They are more threatening because of the intentions of (or attributed to) the nation that owns them. Alex then turned to the broader issue of the shifting paradigm in science as a whole. In 2015, after ten years of studying classical physics, quantum mechanics, philosophy of mind and many other domains, he published his book 'Quantum Mind and Social Science'. In it, Alex takes on the many counterintuitive notions of modern-day physics and applies them to the realm of human behaviour.

Erik Verlinde: Sarah & Ton spoke to Erik Verlinde in early 2017. Erik is Professor of Theoretical Physics at the University of Amsterdam. He is well known for his theory of gravity as an emergent feature of the underlying structure of reality, information at the quantum level. He has made the comparison to air pressure, where the atoms in air do not have pressure; rather it is an emergent feature of their motion and number. He suggests that gravity is a similarly emergent feature of underlying (usually invisible) information, where objects that are closer to each other tend to move toward each other, similar to ships that are berthed close to one another. With ships, this happens

because the waves around them push them closer together, while the waves between the ships are smaller and can thus not prevent this happening. He has used this theory to argue against the big bang theory as an explanation for the universe, showing that assuming the existence of dark matter is an unnecessary correction factor in his theory. He published the most recent detailing of his theory as a paper on the physics website arxiv.org entitled 'Emergent Gravity and the Dark Universe'.

As you can tell, these dialogues are something of a 'work in progress' and the authors hope to speak to many more of their peers who are advancing a renewed understanding of our world. This book was put together to share some of these ideas with a wider audience early on in the process, hoping perhaps to contribute to it.