
Philosophy
Mind
Epistemology
taphysics
Mind-Body
Universals
Preface
Ontology
Consciousness
Free Will
Meaning
Self and Other M
Value
Mental Causatio
Good and Evil
God and Immortality
Can Information Philosophy

# Preface

If I am right that information philosophy is a new method of philosophizing, if by going "beyond logic and language" it can provide new philosophical insights, it should be tested, applied to some of the great problems in philosophy and the philosophy of science. But what are the great problems?

A survey of several popular textbooks on philosophy produces a remarkable consensus on the problems facing philosophers from ancient to modern times. They typically include metaphysics - what is there?, the problem of knowledge - how do we know what exists?, the mind/body problem - can an *immaterial* mind move the material body?, the "hard problem" of consciousness, freedom of the will, theories of ethics - is there an objective universal Good?, and problems from theology - does God exist?, is God responsible for the evil in the world, what is immortality?

Perhaps the best-known summary of philosophical problems was Bertrand Russell's *The Problems of Philosophy*, published over a hundred years ago. Other important texts in analytic philosophy were G. E. Moore's *Some Main Problems of Philosophy* and later A. J. Ayer's *The Central Questions of Philosophy*.[1]

Another set of classic problems comes from the philosophy of science, which attempts to use metaphysics, ontology, epistemology, and logic to provide new foundational principles for the sciences. Philosophers of science question the foundations of physics as well as the attempts by some thinkers to *reduce* all sciences to physics. Some philosophers of mind, by contrast, argue for *emergent* properties that cannot be reduced to a "causally closed" world of physics.

Philosophers of biology speculate whether biology can be reduced to physics and chemistry, or whether something else is needed to explain life. We will show that *information processing and communication* is the extra explanatory factor.

1 A popular recent text surveyed is Feinberg and Shafer-Landau, 2002

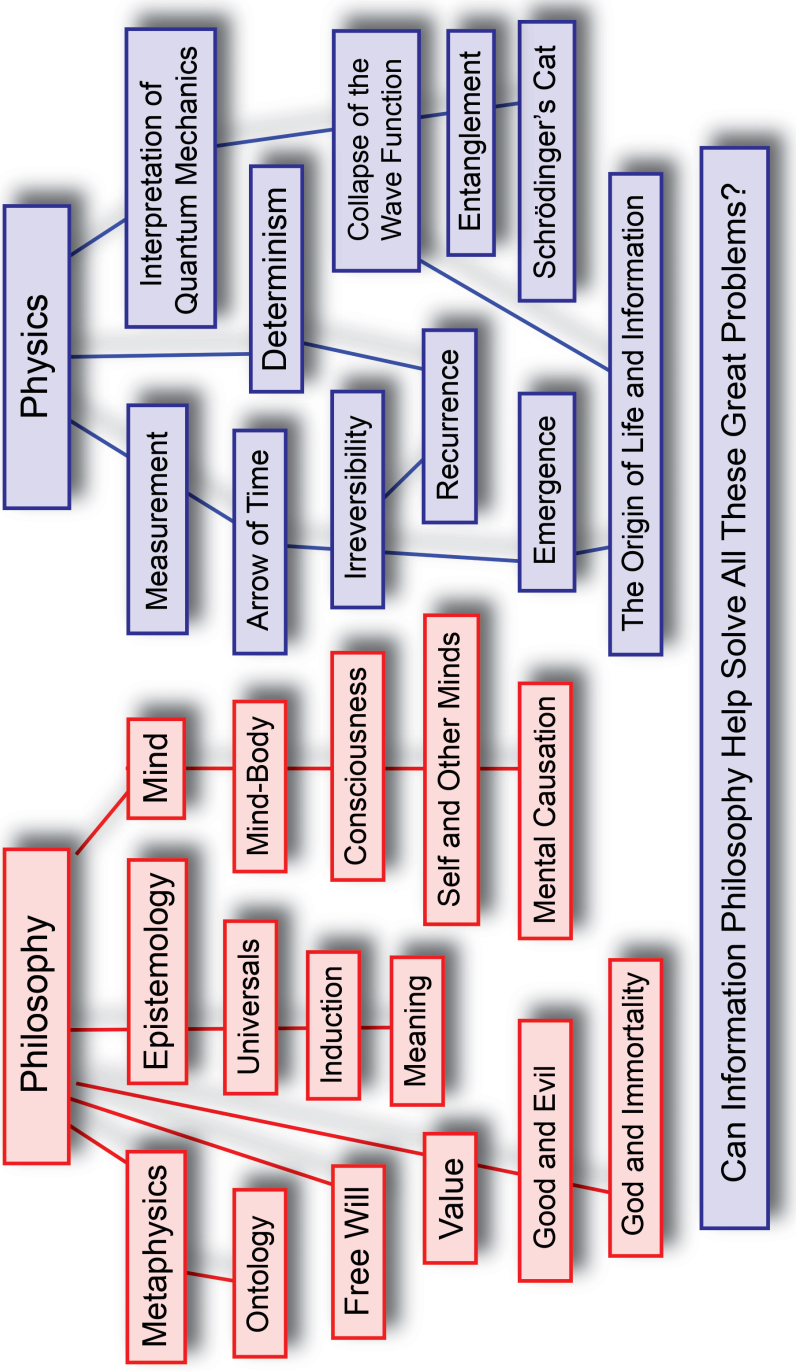


**Figure 1. A taxonomy of problems in physics and philosophy.**

The figure on the left arranges these great philosophy problems and major problems in the philosophy of physics into a taxonomy showing their relationships.

In the twentieth century, philosophers like Ludwig Wittgenstein labeled many of our problems "philosophical puzzles." Russell called them "pseudo-problems."

In his *Tractatus Logico-Philosophicus*, Wittgenstein hoped to *represent* all knowledge in words. He saw a proposition as a picture or *model* of reality and that the totality of true propositions is the whole of natural science (or the whole corpus of the natural sciences).[2] In his later work, he and subsequent analytic language philosophers thought many of these problems could be "dis-solved," revealing them to be conceptual errors caused by the misuse of language.

As an aeronautical engineer and architect, Wittgenstein might have explored his idea of dynamical models[3] further. He might have seen that models are a better tool than language to represent the fundamental, *metaphysical* nature of reality. Dynamical interactive models can easily *show* what often cannot be *said*.

Information philosophy goes beyond *a priori* logic and its puzzles, beyond *analytic* language and its paradoxes, beyond philosophical claims of *necessary* truths, to a *contingent* physical world that is best *represented* with *models* of dynamic, interacting information structures, including living things.

Knowledge begins with information in minds that is a partial isomorphism (mapping) of the information structures in the external world. I-Phi is the ultimate *correspondence theory*.

Using the new methodology of information philosophy, many classic problems are now back under consideration as genuinely important, analyzable, and potentially soluble in terms of physical, but *immaterial*, information.

To be sure, where scientists seek solutions, philosophers prefer problems, especially ones that are teachable as problems. But the goal of information philosophy is not to remove a problem from philosophy once it is tentatively solved.

2 *Tractatus* 4.01, 4.11
3 *Tractatus* 4.04

Returning to Russell's pioneering text, we can say he simply was wrong when he insisted that

> "questions which are already capable of definite answers are placed in the sciences, while those only to which, at present, no definite answer can be given, remain to form the residue which is called philosophy."[4]

Information philosophy aims to show that philosophical problems should not be reduced to "Russell's Residue."

Although our proposed solutions to dozens of problems are grounded in science, they remain great questions in philosophy that should continue to be taught as philosophy.

## What's In The Book

The introductory chapter provides background on the basic concepts of information philosophy - what information is, its relationship to entropy and the second law of thermodynamics, how information is created, why *metaphysical* (non-epistemic) possibilities are needed in order to create new information, the connection between the theoretical *probability* of each possibility and the empirical statistics of *actual* events, how many living things have an *experience recorder and reproducer* (ERR) that stores and recalls information, and why, despite microscopic chaos and ontological indeterminism, the macroscopic world we live in is *adequately or statistically deterministic,* a cosmos that only *appears* to be determined and "causally closed under the laws of nature."

Because information is *immaterial*, it provides insights into many questions regarded as metaphysical. They include being and becoming, causality, chance, change, coinciding objects, composition (parts and wholes), constitution, essentialism, identity (and differences), individuation, modality (counterfactuals), necessity (or contingency), persistence (perdurance and endurance), possibility and actuality, space and time, truth, and vagueness. Much work in recent metaphysics has been an effort to establish metaphysical *necessity*, especially the *necessity of identity*.

By contrast, information philosophy shows the existence of metaphysical *possibilities*. See chapter 2 for some proposed solutions to the questions above and go to **metaphysicist.com** for the rest.

4 *The Problems of Philosophy*, 1912, p.155

Chapter 3 explores meta-ontological questions about the existential status of Platonic Forms, such as numbers and other abstract entities.

In chapter 4, we present our two-stage model of free will, which begins with the free generation of random alternatives (new information) followed by a willed decision that is adequately (statistically) determined by our motives and reasons. The chance events in the first stage do not cause our actions, although they are factors in the decision. It is the agent's decision in the second stage that is the cause of the action. Actions are not pre-determined.

Chapter 5 makes the case that, because a formless entity has no utility, information serves as a basis for *objective value*.

In chapters 6 and 7, armed with the value of information, we discuss good, the problem of Evil, God, and information immortality.

Chapter 8 argues that knowledge is created in minds, where it remains embodied in the experience recorder, but may be stored externally in books and the world-wide web.

In chapter 9, we examine the status of attributes and properties.

The problem of induction is connected to deduction and abduction (hypothesis formation) in chapter 10.

Chapter 11 relates the *meaning* of a new experience to the recorded experiences that are played back during the new one.

In chapters 12 and 13, we offer a model of the mind as immaterial information, as "software in the hardware" of the material brain, which we see as a biological information processor.

In chapter 14 and appendix E we analyze consciousness as the interactive exchange of actionable information by the experience recorder and reproducer (ERR) .

We show in chapter 16 how downward mental causation is possible, while bottom-up causal chains that would reduce biology and psychology to physics and chemistry are implausible.

We provide an *interpretation* of quantum mechanics in chapter 17 that minimizes mysteries with *visual models of* what is going on in the quantum world of possibility waves and actual particles.

We show in chapter 18 that unless new information is created, there is nothing for an observer to see and nothing to be measured.

There is no strict determinism and thus no pre-determinism. In chapter 19 we see that the statistical determinism that we have is adequate enough to give us causal control when we need it.

When a particle is located somewhere, the many other possible locations it might have been found (where the wave function was non-zero) simply disappear as possibilities. In chapter 20, we call this the collapse of the *possibilities* function. It is the fundamental unavoidable quantum mystery.

In chapter 21, we disentangle the EPR paradox by showing that we cannot measure one entangled particle without also instantly measuring the second particle, as the two-particle wave function collapses everywhere.

The "transition" from the quantum world to the *appearance* of a classical world (decoherence) occurs when the number of particles is large enough to average over quantum chance. In chapter 22, we see there is only one world, quantum all the way up!

In chapter 23, the puzzle of Schrödinger's Cat is solved by showing that the macroscopic cat is always either dead or alive. Schrödinger's possibilities function gives us only the probabilities that the cat is dead or alive before we look in the box.

Chapter 24 discusses arrows of time (radiation, entropy increase, evolution, history), and the fundamental arrow, the expansion of the universe, which creates all possibilities.

The origin of irreversibility is the random direction of particles after their interaction with radiation. Chapter 25 shows this loss of microscopic path information explains "one-way causality" in the biological and mental realms.

The idea that the universe will ultimately return to its original state is shown in chapter 26 to be wrong.

New information structures created at the biological and mental levels explain how new properties *emerge* that cannot be reduced to lower levels in a "causally closed" physical world. Chapter 27.

In chapter 28, we show that the story of biological evolution is continuous with the evolution of cosmological information structures. Life has evolved to include biological information processing and communications as well as the external storage of information that contains what we call the *Sum* of human knowledge. Living things are dynamic and growing information structures, forms through which matter and energy continuously flow. It is information that controls those flows, not the laws of physics and chemistry!

Appendix A defines information and proposes *dynamical interactive information models* as the best way to teach and to solve problems in philosophy.

In appendix B we show how statistical mechanics calculates the possible positions and velocities for vast numbers of molecules in a gas and proves the famous Second Law of Thermodynamics - that entropy always increases, yet the universe creates magnificent *information* structures, including us!

Appendix C reviews the basic principles of standard quantum physics, which are unfortunately questioned or denied by so many ill-informed philosophers of science.

In appendix D we ask whether chance is *ontological* and real or *epistemic* and the result of human ignorance? We look through Einstein's skeptical eyes to see the origin of ontological chance, without which there would be "nothing new under the sun."

Appendix E describes the *experience recorder and reproducer* (ERR), which stores information about all your past experiences and plays back in the subconscious mind those that resemble something in your current experience.

In appendix F we describe the critical steps in the **cosmic creation process**, which accounts not only for the existence of atoms and molecules, for the formation of galaxies, stars, and planets, and for biological evolution, but also for the "free creations of the human mind" behind our philosophy and our physics.

Appendix G argues that life is coextensive with language, that biology uses a semiotic system of signaling, signifiers, and signifieds. Human language evolved from biological communications.

I hope that you will look at the I-Phi website to explore further work in progress on these great problems in physics and philosophy.

Google Analytics reports that Information Philosopher has tens of thousands of unique visitors each year from all over the world.

I look forward to your emails with critical comments on problems that interest you and your feedback on our web pages for over 300 philosophers and scientists who have worked on these problems.

A Google search for their names often returns links to I-Phi pages on the first results page, alongside those from Wikipedia and the Stanford Encyclopedia of Philosophy.

Wikipedia does not allow original research and each article on the SEP is mostly the work of a single philosopher, with minimal content from original sources. By contrast, I-Phi pages present the work of hundreds of philosophers and scientists, often in their original languages, with downloadable PDFs of their major papers, for scholars without easy online access.

For example, we now have a bilingual *Tractatus*, with indexes in English and German, and a bilingual of Frege's major argument.

Your inputs will help make **informationphilosopher.com** as accurate a resource as possible for twenty-first-century philosophers.

Please also take a look at our new websites devoted to metaphysical problems that we believe are solvable using information philosophy, **metaphysicist.com**, and our case for possibilities - **possibilist.com**.

Bob Doyle
bobdoyle@informationphilosopher.com
Cambridge, MA
September, 2016