

From Physics to Solipsism

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Outside reality is neither outside nor real. We may start from common-sense realism or from quantum physics, in any case we arrive at a variant of solipsism: The familiar world of interacting objects is our neuro-mental simulation. This solipsism is only partial because the macroscopic objects of our senses (even though mere representations or simulations) are founded in the reality of the ultimate basic level (the Standard Model of quantum physics or something more fundamental). The central role of simulations tends to up-value the neuro-mental faculties and achievements of human beings.

Physicalism is often understood as the reduction of mental to macro- and mesoscopic physical phenomena. Our classification of macro- and mesoscopic physical phenomena as not real sheds new light on physicalism. Its reduction loses interest if the level of reference lacks reality.

Solipsism maintains that only our mind is certain to exist: The world is not independent from our thinking but, on the contrary, is *in toto* produced by our mental or neuro-mental activity.

Below we shall see that the world consists of an ultimate basic level where events presumably occur in a strange way, governed by relations without separable objects. This microscopic level, though not accessible to our senses, is real. In so far solipsism is wrong. Yet everything else, the familiar world of macroscopic and mesoscopic objects, exists only as representations in our mind, exists only in our imagination. In so far solipsism is right.

Observation or assumption	Conclusion or proposal
<p>Reality exists independent from our neuro-mental activity.</p> <p>Our senses mirror objects as is (naive or common-sense realism).</p>	<p>Our senses do not mirror real objects as is. They convey only the macroscopic consequences of microscopic events and relations.</p>
<p>Common premises (based on uncritical trust in our senses):</p> <p>(0) Real objects are those which exist independently from our neuro-mental activity.</p> <p>(1) The world contains separable objects with intrinsic properties and independent existence.¹</p> <p>(2) The objects are ordered in space and time.</p> <p>(3) Two objects which encounter each other in space and time may interact causally by means of near-range forces, changing their properties.</p> <p>(4) Cause precedes effect by a small time delay.</p> <p>(5) An object cannot interact with itself or with its constituting components.</p>	<p>Macroscopic objects are artifacts of our senses based on a microscopic reality. The microscopic reality itself is not accessible to our senses.</p> <p>Therefore macroscopic objects are not independent from our neuro-mental activity.</p>
<p>Yet, in the quantum world there are objects ² which lack localization lack separability lack individuation</p>	<p>Lesson from QED: Therefore, there are no intrinsic properties possessed by separable objects.</p> <p>3D-space (ordering coexistent separable objects) and time (ordering of changes of separable objects) is an illusion.</p> <p>Causality requires separability. Causal interaction of separable objects in space and time is an illusion.</p> <p>Events are governed by relations without separable objects.</p>
<p>A constitutive whole (CW) can interact. It is real.</p>	<p>A CW cannot interact because it is exclusively dependent on its components.</p> <p>A CW is not independent, not real. It is the result of our neuro-mental classifying and ordering. Its representation has no denotate.</p> <p>We experience not the world but our neuro-mental simulation of the world. The simulation deals with macroscopic objects which as such do not exist.</p>

¹ Albert Einstein, quoted on page 198 of (Esfeld, 2002).

² See page 204 in (Esfeld, 2002).

<p>In a hierarchical system constitutive wholes are placed on system level n and their components one level down, on level n-1. Suppose that a CW cannot interact causally while its components can. Now consider that the components on level n-1 are themselves made up of smaller components found on level n-2. Only these can interact causally. However, these components are made up of even smaller components on level n-3, and so forth.</p> <p>This drainage continues until a level is reached which harbors objects not made up of components. Here causal interactions are supposed to occur. This as long as separability, space and time (concepts required for causal interaction) remain applicable.</p>	<p>Causal drainage concludes that only those objects which are not constitutive are real (exist independently) and can interact causally. It thus drains down to an ultimate level where causal interactions are supposed to occur.</p> <p>However, already in the quantum world interaction and causality is not given because separability, space and time do not apply.</p> <p>Therefore a pragmatic basic level is called for.</p>
<p>In the virtual reality of our world model rules of interaction are applied to representations. While these are constructs without denotates, they may still interact virtually. In those virtual interactions the rules of system theory may be applied.</p> <p>Pragmatic basic level:³</p> <p>Starting from a hierarchy of system levels, we select a level where interactions should take place. To avoid unnecessary detail we pick this level as high as possible, yet as low as necessary for reductive explanations.</p> <p>We <i>disregard</i> (switch off) that objects of the pragmatic basic level are made up of components.</p> <p>Above this pragmatic basic level will appear higher levels containing non-interacting constitutive wholes. They are representations without attributed causal power.</p>	<p>Virtual reality:</p> <p>A large part of what we conventionally treat as real objects of the outside world are in truth projections arising from our neuro-mental activity of grouping, ranking and simulating. There are no denotates in reality, what is really outside is not accessible to our senses.</p> <p>Thus constitutive wholes as well as system levels are not independent of our thinking. They are not “real” but representations and tools for the ordering of representations, products of our mind.</p>
	<p>The so-called outside reality is neither outside nor real. It consists of our constructs which are utilized in our neuro-mental simulations.</p> <p>We may start from common-sense realism or from quantum physics, in any case we arrive at a variant of solipsism: The 'real' world is our simulation.</p> <p>It is a partial solipsism because the macroscopic artifacts of our senses are founded in the reality of the ultimate basic level (the Standard Model of quantum physics or something more fundamental).</p> <p>This solipsism tends to up-value the neuro-mental faculties and achievements of human beings.</p>

3 (Lindemann, 2010b, Lindemann, 2010a)

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