

Idealization And The Aims Of Science

[#idealization in science](#) [#aims of science](#) [#philosophy of science](#) [#scientific modeling](#) [#purpose of scientific inquiry](#)

Explore the critical role of idealization in science, where complex phenomena are simplified to facilitate understanding and analysis. This discussion delves into the core aims of science, examining how these methodological simplifications are essential for achieving objectives like accurate prediction, robust explanation, and the development of effective scientific modeling. Understanding this interplay is vital for grasping the philosophy of science and the overarching purpose of scientific inquiry.

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Idealization And The Aims Of Science

Potochnik, Angela (2017). "Levels and fields of science". Idealization and the aims of science. Chicago: University of Chicago Press. pp. 161–197. doi:10... 16 KB (1,391 words) - 13:05, 26 February 2024

This is a list of atheists in science and technology. A statement by a living person that he or she does not believe in God is not a sufficient criterion... 229 KB (28,274 words) - 01:16, 14 January 2024

at best, an idealization. As myths are beliefs, they are subject to the narrative fallacy as Taleb points out. Philosophers Robert Nola and Howard Sankey... 135 KB (15,618 words) - 09:15, 21 March 2024

Objectivity in science is an attempt to uncover truths about the natural world by eliminating personal biases, emotions, and false beliefs. It is often... 13 KB (1,413 words) - 20:24, 10 September 2023

"an intensity and idealization of a love relationship, in which the other is imbued with extraordinary virtue, beauty, etc., so that the relationship overrides... 71 KB (9,286 words) - 10:02, 19 March 2024

Mathematics is essential in the natural sciences, engineering, medicine, finance, computer science, and the social sciences. Although mathematics is extensively... 167 KB (16,244 words) - 20:03, 18 March 2024

In ethics and social sciences, value denotes the degree of importance of some thing or action, with the aim of determining which actions are best to do... 37 KB (4,651 words) - 18:30, 2 March 2024

appraisal of economic outcomes, institutions and processes, the status of highly idealized economic models, the ontology of economic phenomena and the possibilities... 25 KB (2,330 words) - 16:02, 5 March 2024

Sunshine of the Spotless Mind is a 2004 American science fiction romantic drama film directed by Michel Gondry based on Charlie Kaufman's screenplay, and a story... 79 KB (6,769 words) - 18:44, 19 March 2024

The Department for Science, Innovation and Technology, Secretary of State for Science, Innovation and Technology, and Minister of State for Science,... 229 KB (21,992 words) - 03:34, 19 March 2024
representation and a departure from the idealization of earlier academic art, often refers to a specific art historical movement that originated in France in the aftermath... 40 KB (4,856 words) - 12:34, 27 February 2024

Improvement of Psychological Science (SIPS), which aims to encourage open, reproducible science; she has served as chair of the SIPS executive committee and is... 16 KB (1,573 words) - 16:45, 9 January 2024

scientific method's realistic idealization. Yet scientific theories as such are now widely attributed to occasions of inference to the best explanation, IBE,... 133 KB (15,923 words) - 22:13, 27 February 2024

(oîkos) 'house', and -λογία ('study of') is the natural science of the relationships among living organisms, including humans, and their physical... 208 KB (21,336 words) - 16:48, 21 March 2024

dissociation, idealization, identification, introjection, inversion, somatization, splitting, and substitution. In a diagram of the Structural and Topographical... 26 KB (3,266 words) - 09:16, 10 March 2024

aggressive and idealized superego precursors, leading to the idealization of the aggressive, sadistic features of the pathological grandiose self of these... 18 KB (1,943 words) - 17:05, 8 March 2024

1966. It is the first installment of the Dune Chronicles. It is one of the world's best-selling science fiction novels. Dune is set in the distant future... 126 KB (14,461 words) - 15:57, 21 March 2024

theoretical computer science and mathematics, the theory of computation is the branch that deals with what problems can be solved on a model of computation, using... 18 KB (2,127 words) - 13:20, 18 February 2024

certain aims and information to the actors. This forms the 'logic of the situation', the result of reconstructing meticulously all circumstances of an historical... 4 KB (483 words) - 22:19, 27 November 2023

micro-organisms in the original fluid solution in which the crystals developed. At the 2017 meeting of the American Association for the Advancement of Science, researchers... 17 KB (1,760 words) - 06:39, 24 January 2024

Angela Potochnik - Angela Potochnik by IU Philosophy 74 views 1 year ago 1 hour, 48 minutes - She is the author of **Idealization and the Aims of Science**, (2017) and coauthor of Recipes for Science (2018), an introduction to ...

Scientific Realism

Scientific Relativism

Challenges to Tradition to Traditional Realism

Idealizations

Connection between the Target of Investigation and the Object of Knowledge

Ideal Gas Law Example

Ideal Gas Law

Selective Realism

Causal Pattern Realism

Causation

Embodiment

Scientific Realism 11 - Idealization - Scientific Realism 11 - Idealization by Kane B 2,282 views 4 years ago 1 hour, 6 minutes - A serious threat to **scientific**, realism arises from the fact that almost all **scientific**, models involve **idealizations**,: ideal gases, point ...

Intro

What is idealization?

The idealization problem

(A) Eliminating idealizations

(B) Quarantining idealizations

(C) Realism about idealizations

Two puzzles about option (C)...

But this seems to be the question. Consider two hypotheses

The second puzzle for (C) is epistemological

(Mis)understanding(.) Idealisation and Truth (Jesús Zamora Bonilla, UNED) - (Mis)understanding(.)

Idealisation and Truth (Jesús Zamora Bonilla, UNED) by LMS (Language, Mind, Society Center)

116 views 5 years ago 1 hour, 16 minutes - LMS Talk, 31.10.2918 Angela Potochnik's new book

'Idealization and the Aims of Science', makes some bold claims about the ...

Emergence, Explanation, and (Infinite) Idealization (Samuel Fletcher) - Emergence, Explanation,

and (Infinite) Idealization (Samuel Fletcher) by Bristol Centre for Science and Philosophy 57 views 2

years ago 59 minutes - On Tuesday 4th May we were joined by Samuel Fletcher via Zoom. Abstract

I argue that infinite **idealizations**, in **scientific**, modeling ...

Intro

Idealization: Physics after Galileo

Idealization: Cosmology
Idealization: Phase Transitions
Idealization: Population Biology
Some guiding questions
Outline
A Point of Scope
More on Models
More On Representational Accuracy
Function
Justification
Example: FLRW Cosmology
Comparison with Approximation
Approximation Example
Idealizations are...
Explanation & Emergence
Example: Cosmology
Example: Phase Transitions
Example: Population Biology
Some guiding answers
Elay Shech - "Scientific Understanding, Modal Reasoning, and (Infinite) Idealization" - Elay Shech
- "Scientific Understanding, Modal Reasoning, and (Infinite) Idealization" by Foundations of Physics
@Harvard 344 views 2 years ago 54 minutes - Talk by Elay Shech (Auburn University) Mini-Workshop
Website: <https://harvardfop.jacobbarandes.com/> YouTube Channel: ...
Intro
Idealizations and Science
The Basic Idea
Motivation
The Magnetic Aeronaut Bone Effect
Understanding a Theory
Paradoxes
Example
Summary
Vex Question
Interpretive Options
Idealization
Objectual Understanding
Physical AB Effect
Objection
Questions
Main conclusion
Two thoughts
Consequences of her approach
What are the foundational implications
Are idealizations essential for explanation
Iron of Bone Effect
Idealizations for Understanding
Angela Potochnik (Cincinnati) - Why it matters that idealizations are false - Angela Potochnik
(Cincinnati) - Why it matters that idealizations are false by FraMEPhys 489 views 3 years ago 31
minutes - ... subjects in shaping the content of **scientific**, knowledge perhaps more than any other
feature of **science idealizations**, make clear ...
#15 Johannes Jaeger: AI, philosophy of science, non-reductive naturalism - #15 Johannes Jaeger:
AI, philosophy of science, non-reductive naturalism by I, scientist 205 views 3 days ago 1 hour, 56
minutes - Yogi Jaeger is a philosopher at the University of Vienna, specializing in the philosophy of
science, and **biology**, in particular.
Intro.
My excitement and interests in Yogi's work. Personal: non-reductionism naturalism beats lived dual-
ism. Professional: tech is becoming organismic.
Definitions, naturalizing relevance realization. Formalization, computation and framing, small/closed
and large/open worlds.

The paradox of living in a small world is that we don't know that we are living in a small world. Computational approaches do work, just not for (all) cognition. The brain evolved not to compute but to keep you alive.

Church-Turing-Deutsch conjecture.

Approximation. Can cognition be well-approximated by computation? Csaba Szepesvari's third question. Yes, but that does not mean cognition works that way.

Nothingbutism. Prediction and understanding, are they the same? Understanding needs to have the concepts right.

AGI doom only happens in the small world.

Philosophy and science. Any scientific test for the non-computation claim? Csaba's second question. Framing precedes science.

Non-reductionist but non-woowoo naturalism.

Relevance realization: the map of map-making. Enactivism. Non-formalizability. Fragility of the organism and death. The work to exist.

Goal-orientation: intrinsic or extrinsic? Paperclip maximizer.

Far-from-equilibrium thermodynamics. Physics-free simulation vs self-manufacturing experiential systems. Immediate and pre-conceptual access to the world.

Biotech and AI. The value of slowing down.

TAME: Michael Levin's technological approach to mind everywhere.

LLMs and hallucinations.

Social media AI and recommendation systems: taking away our agency but trying to optimize for an unoptimizable goal.

AGI, slowing down, losing our grip on the world or realizing our humanness in the mirror of AI?

Intelligence and rationality.

Yogi's journey: a natural philosopher, a biologist using philosophical approaches.

Where do I want to see AI going? Yogi's question to me.

My Philosophy Heroes: Alan Watts and "THE EGO" - My Philosophy Heroes: Alan Watts and "THE EGO" by Awakening With Russell 179,123 views 2 years ago 11 minutes, 27 seconds - A new episode on my philosophy heroes and this time it is well-known British philosopher, writer, and speaker, Alan Watts.

Alan Watts

Observe Your Own Emotions

Famous Quotes of Alan Watts

Science PROVES God!! - Science PROVES God!! by Viced Rhino 68,172 views 1 year ago 54 minutes - Today, Dr. Juan Valdes of Reasons for Hope (via the NW Creation Network channel) explains to us how there's more **scientific**, ...

Metaphysics vs. Epistemology Easily Explained - What is Metaphysics & What is Epistemology? -

Metaphysics vs. Epistemology Easily Explained - What is Metaphysics & What is Epistemology? by

Thinking Deeply with Ben 82,628 views 2 years ago 8 minutes, 45 seconds - What's the difference between metaphysics and epistemology? This video will go over the difference between these two branches ...

Introduction

Epistemology Defined

Metaphysics Defined

The Start of 'New' Metaphysics

Descartes' Philosophy

The Tasks of Epistemology

What is Knowledge?

Is Metaphysics Possible?

Humean Skepticism

Logical Positivism

The Rebirth of Metaphysics

The Tasks of Metaphysics

Problems Metaphysics Deals With

Conclusion

Being and Metaphysics (Aquinas 101) - Being and Metaphysics (Aquinas 101) by The Thomistic Institute 108,565 views 4 years ago 5 minutes, 8 seconds - The object of metaphysics is being itself. Everything that has being is in some way one and unified, true or intelligible, good and ...

Getting beyond time and space | Carlo Rovelli, Julian Barbour, Frank Wilczek, Lee Smolin and more -

Getting beyond time and space | Carlo Rovelli, Julian Barbour, Frank Wilczek, Lee Smolin and more by The Institute of Art and Ideas 21,738 views 1 year ago 33 minutes - Leading physicists explore our understanding of spacetime and challenge our definitions of time and space. Featuring: Carlo ...

Introduction

Carlo Rovelli

Jim Al-Khalili

Julian Barbour

Lee Smolin

Eleanor Knox

Frank Wilczek

Tim Maudlin

Schopenhauer & Nietzsche: Overcoming Pessimism - Schopenhauer & Nietzsche: Overcoming Pessimism by essentialsalts 31,025 views 2 years ago 2 hours, 26 minutes - A deep dive into the influence of Schopenhauer on Friedrich Nietzsche. Nietzsche talks at great length about the inspiration he ...

Intro

Chapter Titles

Nietzsche as Educator

Nietzsches Philosophy

Nietzsches Problem

Utilitarianism

NonProgressive History

Nietzsche on Culture

Nietzsche on Genius

Higher Culture vs Lower Culture

False Person of Culture

The Death of God

The Academic

Nietzsches Soulsearching

Being Untimely

Nietzsche vs Hegel

Natures Leap

The Saint

Criticism

Final Dimension

Self-Talk Creates Reality | Neville Goddard #neville_goddard #spiritual #selftalk - Self-Talk Creates Reality | Neville Goddard #neville_goddard #spiritual #selftalk by Divine Heartprints 1,293,560 views 11 years ago 20 minutes - This is a lecture by Neville Goddard This video explores the power of self-talk and examines how the way we communicate with ...

What Are Independent, Dependent And Controlled Variables? - What Are Independent, Dependent And Controlled Variables? by HighSchoolScience101 960,580 views 6 years ago 3 minutes, 16 seconds - Short and simple explanation of a basic experiment demonstrating the difference between independent, dependent and ...

Independent Variable

Dependent Variable

Controlled Variables

Controlled Experiments - Controlled Experiments by Nucleus Medical Media 35,102 views 2 years ago 4 minutes, 27 seconds - #**biology**, #ControlledExperiments #TestingHypothesis **SCIENCE**, ANIMATION TRANSCRIPT: What is a controlled experiment, and ...

Sponsor

Introduction

Setup

John Norton: Approximation and Idealization - John Norton: Approximation and Idealization by Rotman Institute of Philosophy 732 views 10 years ago 1 hour, 33 minutes - Norton's second talk as Rotman Lecturer focuses on approximation and **idealization**., and how important the fact that only ...

Two ways to take the infinite limit

Continuum limit

Two forms of the thermodynamic limit

Infinite one-dimensional crystal

Strong Form: Must Prove Determinism

Renormalization Group Methods

The Flow

Finite Systems Control

Where Reduction Succeeds

Where Emergence Happens

James Ngyuen (London) - Why (at least some) idealizations aren't false (and why it matters) - James

Ngyuen (London) - Why (at least some) idealizations aren't false (and why it matters) by FraMEPhys

63 views 3 years ago 33 minutes - ... that by realizing that **idealizations**, are so prevalent in **science**, we should rethink whether or not the **aims of science**, are factored i ...

Idealization and Representation in Astrophysical Computer Simulations - Idealization and Representation in Astrophysical Computer Simulations by Bristol Centre for Science and Philosophy 92 views

2 years ago 51 minutes - Abstract **Scientific**, models and computer simulations are indispensable to **scientific**, practice. Through their use, **scientists**, are able ...

Intro

ACDM Model

TALK OVERVIEW

Actual Location of Galaxies

Dark Galaxy Hypothesis

Challenges in Astrophysics

Idealization and Aims of Astrophysics

Ring Galaxies

Luminous/Luminous Simulations Data

Defining Properties of Ring Galaxy

Theory-based inputs

Observation-based inputs

Simulations using GIZMO with SF & FIRE feedback

Simulations - Exploring Parameters

Idealization and the Aims of Astrophysics

Kinds of Idealizations

Importance of De-idealization

Angela Potochnik HD 1080p - Angela Potochnik HD 1080p by Rotman Institute of Philosophy 94

views 1 year ago 1 hour, 32 minutes - ... even the **aims of science**, so in the rest of this initial

discussion i'm going to focus in on the role of **idealizations**, in particular in uh ...

Idealization and Abstraction in Scientific Modeling | Demetris Portides - Idealization and Abstraction

in Scientific Modeling | Demetris Portides by The Van Leer Jerusalem Institute - 527 Views 7 years

ago 46 minutes - Pond: Network of Philosophy of **Science**, around the Mediterranean Sunday ,4

September, 2016 to Monday ,5 September, 2016 ...

Simplifying Assumptions

Products of Idealization

What Is Idealization

Confusion between Epistemology and Semantics

Distinction between Idealization and Obstruction

Angela Potochnik - Non-Factive Understanding and Scientific Progress - Angela Potochnik -

Non-Factive Understanding and Scientific Progress by Philosophy of Science India 333 views

Streamed 2 years ago 2 hours, 3 minutes - ... the author of a wonderful book that i recommend that you all read called **idealization and the aims of science**, uh so i'm sure this ...

Scientific Realism 11 (old version) - Models and Fictions - Scientific Realism 11 (old version) - Models and Fictions by Kane B 1,380 views 6 years ago 43 minutes - A serious threat to **scientific**, realism arises from the fact that almost all **scientific**, models involve fictions: frictionless planes, ideal ...

Science on Tap - Angela Potochnik /// LIVE at Radio Artifact 2022.09.07 - Science on Tap - Angela

Potochnik /// LIVE at Radio Artifact 2022.09.07 by Radio Artifact 17 views Streamed 1 year ago 1 hour, 44 minutes - She is the author of **Idealization and the Aims of Science**, (2017) and coauthor

of Recipes for Science (2018), an introduction to ...

Open Discussion with Patricia Palacios, Elay Shech, Samuel Fletcher on Idealizations in Physics -

Open Discussion with Patricia Palacios, Elay Shech, Samuel Fletcher on Idealizations in Physics

by Foundations of Physics @Harvard 194 views 2 years ago 58 minutes - Discussion and Q&A

Mini-Workshop Website: <https://harvardfop.jacobbarandes.com/> YouTube Channel: ...

Hans Christian Ottinger

Patricia Palacios

Samuel Fletcher

Noel Swanson

Elay Shech

Jacob Bar andes

Explanation and Simplification in Science | Dr. Mazviita Chirimuuta (Part 4 of 4) - Explanation and Simplification in Science | Dr. Mazviita Chirimuuta (Part 4 of 4) by Brains Blog 160 views 3 months ago 18 minutes - Idealization and the Aims of Science,. Chicago IL: Chicago University Press.

<https://amzn.to/3q4sYF5> Weiskopf, D. (2011). "Models ...

The Paradox of Infinite Limits: A Realist Response (Patricia Palacios) - The Paradox of Infinite Limits: A Realist Response (Patricia Palacios) by Bristol Centre for Science and Philosophy 109 views 2 years ago 48 minutes - On Tuesday May 11th we were joined by Patricia Palacios who talked to us about infinite limits, and a realist response to ...

Introduction

Infinite Limits

Idealizations and approximations

Different limits

Sequence of functions

Sequence of values

Paradox of Infinite Limits

Solving the Paradox

Infinite Limits as Idealizations

Reversible Processes as Idealizations

Summary

Essential Idealizations

Solution

Rejecting Statement 1

Rejecting Statement 3

Jeremy Battlefields Strategy

Spontaneous Symmetry Breaking

Moral

Abstractions

Randomization Group Methods

Infinite Universality

Deflationary Interpretation

Infinite Limits are Essential

Conclusion

The Philosophy of "As If" with Kwame Anthony Appiah - The Philosophy of "As If" with Kwame Anthony Appiah by University of California Television (UCTV) 12,671 views 9 years ago 1 hour, 27 minutes - Visit: <http://www.uctv.tv>) A leading moral and political philosopher, Kwame Anthony Appiah is Professor of Philosophy and Law at ...

Intro

John Campbell

Pragmatism

Inconsistencies

Utility

Adam Smith

Daniel Dennett

Why it works

The sorter operator

The intentional stance

Being sort of true

Intentional systems

Beliefs and desires

Idealization

Idealization of rationality

Human delusion

Holistic theory

A big story

Science and Metaphysics - Science and Metaphysics by Kane B 9,470 views 2 years ago 1 hour, 19 minutes - Metaphysics **aims**, to describe the fundamental nature of reality. A challenge to metaphysics is that it seems to have been ...

The challenge to metaphysics

Complementary metaphysics

Scientistic Metaphysics

Metaphysics of science

Neo-Kantian metaphysics

Angela Potochnik, Causal Patterns and How Our Theories Change - Angela Potochnik, Causal Patterns and How Our Theories Change by Thomas Pradeu 445 views 4 years ago 1 hour, 21 minutes - Angela Potochnik (University of Cincinnati, USA), "Causal Patterns and How Our Theories Change" in Bordeaux (PhilInBioMed, ...

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