Ministry of Education and Science of Ukraine
V. N. Karazin Kharkiv National University
Professor J. B. Schad Theoretical and Practical Department

"APPROVED"
Dean of Faculty of Philosophy
_____Karpenko I. V.
June, 30, 2025 year

WORK PROGRAM
OF THE ACADEMIC DISCIPLINE

Philosophical Foundations of Scientific Knowledge

The third (educational-scientific) higher education level

The field of Science C – Social Sciences, Journalism, Information and International Relations

Speciality C1 – Economics and International Econonic Relations

type of discipline mandatory

Faculty Economics

2025 / 2026 academic year

The program was recommended for approval by the Academic Council of Faculty of Philosophy
June, 30, 2025 year, minutes No 5

PROGRAM DEVELOPER:

Nataliia Zahurska, Philosophy Doctor in Philosophy, dozent, professor of Professor J. B. Schad Theoretical and Practical Department

The program was approved at the meeting of Professor J. B. Schad Theoretical and Practical Department
June, 20, 2025 year, minutes No 5

Head of Professor J. B. Schad Theoretical and Practical Department

Oleg PEREPELYTSIA

The program is agreed with the guarantor of the educational-scientific program «Economics»

Guarantor of the educational-professional program «Economics»

Volodymyr SOBOLIEV

The program was approved by the scientific and methodological commission of the faculty of economics

Minutes No. 1 dated August 26, 2025

Head of the scientific and methodological commission of the faculty of economics

Daria ZAHORSKA

INTRODUCTION

The educational program of the discipline **«*Philosophical Foundations of Scientific Knowledge*»** is made according to the educational level of preparation for the third (PHD) degree.

The field of Science Social Sciences, Journalism, Information and International Relations

Speciality C1 – Economics and International Econonic Relations

1. Description of the discipline

1.1. The aim of studying of the discipline

The course «Philosophical Foundations of Scientific Knowledge» majors develop problem solving skills at a level of abstraction that cannot be achieved only through the case study or profession-specific approach favored in disciplines geared towards occupational training. People with strong abstract reasoning skills do better in applied fields, on average, than people who lack the ability to abstract from particular problem-situations. During the course of study, it is possible to master the heritage of the history of philosophy, to get acquainted with the main philosophical conceptions and approaches, and also to navigate in the diversity of contemporary philosophical trends.

1.2. The main tasks of studying the discipline

Students should achieve the following skills:

General skills:

– to think through a problem clearly,
– to communicate a solution effectively,
– to think, speak, and write clearly and critically,
– to communicate effectively,
– to form original, creative solutions to problems,
– to develop reasoned arguments for one's views,
– to appreciate views different from one's own,
– to analyze complex material,
– to investigate difficult questions in a systematic fashion.

Critical Thinking Skills:

– to think logically;
– to identify the key issues in a discussion;
– to assess the pros and cons of proposed solutions;
– to ask the right questions;
– to see beyond superficial categorizations (i. e., «to think outside the box»);
– to draw accurate conclusions from confusing data;
– to clarify purposes, principles, and general objectives;
– to differentiate fact from value.

Problem-Solving Skills:

– to find creative solutions to hard problems;
– to define the parameters of a problem;
– to look at a problem from different angles and to identify alternative courses of action;
– to identify useful resource materials for solving a problem;
– to factor complex problems into solvable pieces.

Argument Skills:

– to use argumentation techniques to persuade others;
– to assess the implications of a proposal.

Communication Skills:

– to express and to explain difficult ideas clearly and straightforwardly;
– to express one's point of view while respecting the views of others;
– to use a variety of tools and strategies to convey information.

Information Management:

– to sort, compile and rank data;
– to evaluate information and to use it to solve problems;
– to locate information in many electronic and paper media;
– to use creative insight to guide information searches;
– to abstract concepts in order to summarize information;
– to focus on the big picture, to see the forest and the trees;
– to discern what is valuable from what is irrelevant.
– to manage information;
– to sort, compile and rank data;
– to evaluate information and to use it to solve problems;
– to locate information in many electronic and paper media;
– to use creative insight to guide information searches;
– to abstract concepts in order to summarize information;
– to focus on the big picture, to see the forest and the trees;
– to discern what is valuable from what is irrelevant.

1.3. Number of credits – 4

1.4. Total hours – 120

1.5. Features of the discipline	
Standard	
Full-time form	Part-time form
Year of preparation	
1-nd	0 h.
Term	
2-th	0 h.
Lectures	
24 h.	0 h.
Practical, seminar classes	
12 h.	0 h.
Laboratory classes	
0 h.	0 h.
Independent work	
84 h.	0 h.
Individual tasks	
0 h.	

1.6. List of competencies that this discipline forms

Integral competence (IC)

The ability to produce new ideas, to solve complex problems in the field of management and administration, which involves a deep rethinking of existing and the creation of new integral knowledge and/or professional practice, to apply the latest methodologies of scientific and pedagogical activity, to

carry out own scientific research, the results of which have scientific novelty, theoretical and practical significance.

General Competences (GC):

Competencies defined by the standard of higher education of the specialty:

GC01. Ability to abstract thinking, analysis and synthesis.

Professional competences (PC):

PC01. Ability to conduct original research, achieve scientific results that create new knowledge in economics and related interdisciplinary areas and can be published in leading scientific journals in economics and related fields

1.7. List of learning outcomes that this discipline forms

Program learning outcomes determined by the standard of higher education of the specialty:

PLO02. Deeply understand the basic (fundamental) principles and methods of economic sciences, as well as the methodology of scientific research, create new knowledge in the field of economics in order to achieve economic and social development in the context of globalization.

PLO05. To propose new solutions, develop and conduct scientific projects that make it possible to rethink existing and create new holistic knowledge and/or professional practice and solve significant and fundamental and applied problems of economic science, taking into account social, economic, environmental and legal aspects; to ensure the commercialization of scientific research results and compliance with intellectual property rights.

PLO09. Formulate and test hypotheses; use appropriate evidence to substantiate conclusions, in particular, the results of theoretical analysis, empirical research and mathematical and/or computer modeling, available literary data.

1.8. Prerequisites: indicate the list of disciplines that precede the study of this discipline

The discipline does not require any prerequisites.

2. Topical plan of the discipline

SECTION 1. *Scientific knowledge issues in philosophy*

TOPIC 1. *Philosophy of scientific knowledge: general review*

Philosophical methods. Philosophical argumentation. Divisions of Philosophy and Scientific knowledge. Natural, metaphysical and moral philosophy. Metaphysics as the philosophical study of reality nature. Ontology as the philosophical study of being. Epistemology is the study of knowledge. The main questions of metaphysics, ontology as the philosophical study of being and epistemology. Areas of current philosophy of knowledge.

TOPIC 2. *Ancient origins of the philosophy of knowledge*

History of philosophy as a significant part of philosophy, as a history of answers and arguments about philosophical very questions. From myth to logos. Philosophy of elements. Pythagorean school. Sophists. Socratic Method. Gnoseology of Plato. Aristotelian metaphysics. Matter and form. Essentiality and accidentality. Teleology. Material, formal, efficient and final causes. Epicurean atomism. Free will according to Epicurus. Stoicist alism. Logic of stoics. Skepticist suspending of judgement. The concept of ataraxia. Neoplatonic philosophy of knowledge.

TOPIC 3. *Rationalism*

Knowledge through reason. Mathematics as the paradigm example of knowledge. Cartesian skepticism. Epistemological project of providing systematic justification of knowledge. *Cogito Ergo Sum* or *I think, therefore I exist*. Dualistic Cartesian philosophy of mind. *The Passions of the Soul*. Monism of Benedict Spinoza. Infinite number attributes of the substance. Intellectual love. Determinism. Monadology of Gottfried Wilhelm Leibniz. Psychical monad as a reflection of all creation. Plurality of substances.

TOPIC 4. ***Empiricism***

Knowledge grounded in sense experience. Mind as a tabula rasa, a blank slate. Simple and complex ideas. Primary and secondary qualities. Liberty as a freedom from domination, but not freedom to do whatever one pleases. Property rights as natural extensions of a human liberty. Idealism on empiricist grounds by George Berkeley. Sense impressions as an appearances. Empiricist epistemology by David Hume. Impressions and ideas. The role of imagination. A priori and a posteriori reasoning. Skeptical Empiricism about a moral truths. Self as a bundle of experiences.

SECTION 2. ***Trends of philosophical scientific knowledge***

TOPIC 5. ***Philosophy of science and philosophy of mind***

Logical positivism. The demarcation problem. Theories. Explanation. Karl Popper's conjecture and refutation. Demarcation through falsifiability. Auxiliary hypotheses. Thomas Kuhn. Empiricism leads to logical behaviorism. The Brain State Identity Theory. Functionalism. Consciousness and property dualism.

TOPIC 6. ***Ethics and philosophical anthropology***

Ethics about what we ought to do, what it would be best to do, how we ought to live, how we ought to treat others and how we ought to organize our communities. Good and evil, right and wrong, virtue and vice, justice and crime. Right and wrong conduct. Moral epistemology. Descriptive and prescriptive ethics. Applied, normative ethics and meta-ethics. Ethical conventionalism, relativism, subjectivism and realism. Immanuel Kant about on intrinsic value. Hypothetical and Categorical Imperatives. Formulations of Categorical Imperatives. Ethical monism and pluralism. Instrumental values are useful for me. Intrinsic values are useful to me. Happiness as a pain and no pleasure from utilitarian point of view. To maximize overall happiness is an aim of John Stuart Mille. Happiness needs both instrumental and fundamental, intrinsic values. Philosophical anthropology as a trend in German philosophy and a special discipline in philosophy. Human being as a loving being according to Scheler. Intersections of love, knowledge and values. Human being as a value-bearer. Rank of values according to Scheler. Value's (disvalue's) existence or non-existence. Basic moral tenor of the person. An order and disorder of the heart. Human beings as problems for themselves. Homo religious, homo sapiens, homo faber, homo dionysiacus, homo creator.

3. Structure of the discipline

Section titles	Number of hours											
	full-time form						part-time form					
	in total	including					in total	including				
		l	p	lab.	ind.	i.w.		l	p	lab.	ind.	i. w.
1	2	3	4	5	6	7	8	9	10	11	12	13
SECTION 1. ***Scientific knowledge issues in philosophy***												
TOPIC 1. ***Philosophy of scientific knowledge: general review***	20	4	2			14						
TOPIC 2. ***Ancient origins of the philosophy of knowledge***	20	4	2			14						
TOPIC 3. ***Rationalism***	20	4	2			14						
TOPIC 4. ***Empiricism***	20	4	2			14						
Total for section 1	**80**	**16**	**8**			**56**						
SECTION 2. ***Trends of philosophical scientific knowledge***												
TOPIC 5. ***Philosophy of science and philosophy of mind***	20	4	2			14						

Section titles	Number of hours											
	full-time form						part-time form					
	in total	including					in total	including				
		l	p	lab.	ind.	i.w.		l	p	lab.	ind.	i. w.
TOPIC 6. ***Ethics and philosophical anthropology***	20	4	2			14						
Total for section 2	**40**	**8**	**4**			**28**						
In total	120	24	12			84						

4. Topics of the seminar (practical, laboratory) classes

№ n/o	The title of the topic	Number of hours
1	Metaphysics. Epistemology // The Blackwell Companion to Philosophy. Oxford, 2002.	2
2	Ancient Greek Philosophy. Plato and Aristotle // The Blackwell Companion to Philosophy. Oxford, 2002.	2
3	Descartes and Malebranche. Spinoza and Leibniz // The Blackwell Companion to Philosophy. Oxford, 2002.	2
4	Locke. Berkeley. Hume // The Blackwell Companion to Philosophy. Oxford, 2002.	2
5	Philosophy of Science. Philosophy of Mind // The Blackwell Companion to Philosophy. Oxford, 2002.	2
6	Kant. Ethics. Applied Ethics. Business Ethics // The Blackwell Companion to Philosophy. Oxford, 2002.	2
	In total	12

5. Tasks for independent work

№ n/o	Types, content of independent work	Number of hours
1	***Philosophy of scientific knowledge: general review:*** Comprehension of the philosophical foundations of scientific knowledge importance and studying relevant literature	10
2	***Ancient origins of the philosophy of knowledge:*** Creating a scheme of ancient philosophical conceptions of knowledge	26
3	***Rationalism:*** Problematization of the actual aspects of the topic	8
4	***Empiricism:*** Problematization of the actual aspects of the topic	28
5	***Philosophy of science and philosophy of mind:*** Creating a scheme of trends of philosophy of science and philosophy of mind	
6	***Ethics and philosophical anthropology:*** Comprehension the diversity of ethical and	

	philosophical-anthropological conceptions and studying relevant literature	
In total		**84**

6. Individual tasks

Not provided for in the work plan.

7. Studying methods

The course program includes classroom (lecture and seminar) classes and independent work of students. Preliminary preparation is being done through entrance control, diagnostic testing, survey, acquaintance or repetition of terminology. The following methods are used when delivering the lecture material: presentational method, reproductive method, explanatory-illustrative method, method of problem delivering of the material, partial-search method. The following methods are used when conducting seminar classes: presentational method, reproductive method, explanatory-illustrative method, exercise method, search for answers to questions, discussion of cases. It is also possible to use training through observation of the phenomenon, questions-answers, questions for self-testing, discussions, debates, non-assessment tasks, watching films, interactive practical tasks.

8. Methods of control

Current control is carried out through the evaluation of students' knowledge in seminar classes, which include oral answers, reproductive and creative tasks.

Self-control is also provided during the semester through the completion of relevant tasks.

Independent work is also provided during the semester through the completion of relevant tasks for self-control, which is not evaluated in points.

At the end of the semester, all points received by the student for the classroom are summed up. The student can receive an additional 10 points for participation in conferences or other scientific events on philosophical and anthropological topics. The above types and forms of mastering the academic discipline make it possible to score 60 points.

Final control involves the evaluation of the examination work, which consists of test tasks and can be evaluated at a maximum of 40 points.

For orientation in the discipline for successful writing of the test examination work, the following examination questions are offered:

Exam question:

1. Metaphisics.
2. Epistemology.
3. Ontology.
4. General features of ancient knowledge philosophy.
5. Main trends in ancient knowledge philosophy.
6. Rationalism.
7. Monism, dualism, pluralism.
8. Empiricism.
9. Kantian ethics.
10. Philosophy of science and philosophy of mind.
11. The scientific approaches to human in philosophy.
12. Contemporary trends of philosophical anthropology.

9. Scheme of scoring

Current control, independent work, individual tasks		In total

Section 1				Section 2		Control work provided by the syllabus	Individu al task	In total	Exam work	
T1	T2	T3	T4	T5	T6					
10	10	10	10	10	10			60	40	100

To be admitted to the final exam test, a higher education applicant must score at least 20 points in the academic discipline.

Criteria for evaluating academic achievements

Types of educational activity	The number of points
SECTION 1. *Scientific knowledge issues in philosophy*	
Attending classes	**0**
Participation in seminar classes	**40**
In total for section	**40**
SECTION 2. *Trends of philosophical scientific knowledge*	**0**
Attending classes	**0**
Participation in seminar classes	**20**
In total for the section	**20**
Control work provided by the syllabus	**0**
Examination/assessment work	**40**
IN TOTAL	**100**

Participation in seminar classes involves presentations with reports based on the proposed source, providing reasoned comments on the problems raised in this source, and offering the opportunity to receive up to 10 points for the seminar.

Criteria for evaluating work in the seminar class:

1–2 points are given under the following conditions:

– familiarity with the relevant source on philosophy

– using of the relevant source on philosophy

3–4 points are given under the following conditions:

– different approaches to analyzing the problem stated in the source

– completeness of the answer

5–6 points are given under the following conditions:

– creativity and generalization of different ethical approaches when analyzing the source

– skills of concise, clear, logical, consistent and competent presentation of the material

7–8 points are given under the following conditions:

– formulation of one’s own conclusions

– ability to conduct polemics on theoretical and practical issues of ethics

8–10 points are given under the following conditions:

– ability to illustrate theoretical provisions with appropriate examples

– ability to apply knowledge extracted from the source when solving practical problems.

The examination paper consists of 10 test tasks. The tasks reflect the content of the examination questions. The maximum number of points for one exam task is 4 points.

Scale of scoring

The sum of points for all types of educational activities during the term	The score for the exam	
	for a four-level rating scale	for a two-level rating scale
90–100	excellent	passed
70–89	good	
50–69	satisfactory	
1–49	poor	unpassed

10. Recommended literature

Basic literature

Gattinger M. Democratizing Risk Governance: Bridging Science, Expertise, Deliberation and Public Values. Cham, 2023.

Ginzburg B. Probability and the Philosophical Foundations of Scientific Knowledge // The Philosophical Review. Vol. 43, №. 3.

Gernot S. The Epistemological Foundations of Scientific Knowledge // Transcience. 2020. Vol. 11, Issue 2.

Lacatos I. The methodology of scientific research programmes Philosophical Papers. Vol. 1. Cambridge, 1978.

The Blackwell Companion to Philosophy. Oxford, 2002.

Additional literature

Alter T., Kind A., Howell R. J. Philosophy of Mind: 50 Puzzles, Paradoxes, and Thought Experiments. N.-Y., L., 2024.

Anjum R. L., Rocca E. Philosophy of Science. Sham, 2024.

Chalmers D. J. The Conscious Mind: In Search of a Fundamental Theory. Oxford, 1996.

Deleuze G., Guattari F. What Is Philosophy? L., 1994.

Feyerabend P. Against Method: Outline of an Anarchistic Theory of Knowledge. L., 1975.

Frodeman R., Briggle A. Field Philosophy: Different Places, Different Cultures. L., N.-Y., 2026.

Fuller S. Knowledge: The Philosophical Quest in History. Abingdon, N.-Y., 2015.

Gonzalez W. J. The Internet and Philosophy of Science. Abingdon, N.-Y., 2023.

Gronda R., Janack M, Marchetti G. Pragmatism and Philosophy of Science: Historical and Contemporary Perspectives. L., N.-Y., 2026.

Kuhn Th. The Structure of Scientific Revolutions. Chicago, 2012.

Popper K. The Logic of Scientific Discovery. L., N.-Y., 2002.

Resnic D. The Ethics of Science: An Introduction. N.-Y., 2005.

Rudolph Carnap, Edited By Martin Gardner, 1966

Romero G. E. Scientific Philosophy. Cham, 2018.

Muhlert M. Philosophy.exe: The Techno-Philosophical Toolkit for Modern Minds. Boca Raton, L., 2026.

Ryle G. The Concept of Mind. L., N.-Y., 2009.

11. Links to information resources on the Internet, video lectures, other methodological support

https://svetlogike.files.wordpress.com/2014/02/the-blackwell-companion-to-philosophy-2ed-

2002.pdf

The Blackwell Companion to Philosophy

http://www.angelfire.com/ego/philosophyradio/

Philosophy Radio

http://www.jamesbowman.me/post/socratic-questions-revisited/

Socratic questions revisited

https://m.blog.naver.com/PostView.nhn?blogId=wei-jung&logNo=221383821357&proxyReferer=https:%2F%2Fwww.google.com%2F

Dualism vs. Monism

https://consc.net/guide/ Chalmers David J. Guide to the Philosophy of Mind

https://pediaa.com/what-is-the-difference-between-hypothetical-and-categorical-imperative/

What is the Difference Between Hypothetical and Categorical Imperative

https://treehouseletter.com/2020/04/18/are-we-killing-the-fat-man-the-corona-trolley-dilemma/

Are We Killing the Fat Man? The Corona Trolley Dilemma

https://www.slideshare.net/auasdp/philosophical-anthropology

Philosophical Anthropology

https://csl4d.wordpress.com/2018/04/24/human-teleology-in-plessners-philosophical-anthropology/

Human teleology in Plessner's philosophical anthropology

https://prezi.com/u7ydkgfqgsvl/philosophy-of-man-philosophical-anthropology-0-introduction/

Philosophy of Man (Philosophical Anthropology)

https://slidetodoc.com/properties-of-art-the-categories-we-use-to/

III. Abstracts of lections

SECTION 1. *Scientific knowledge issues in philosophy*

TOPIC 1. *Philosophy of scientific knowledge: general review*

B. Russell (Chapter 15 of *Problems of Philosophy,* The Value of Philosophy) argues that there is great value in doing philosophy precisely because it frustrates our desire for quick easy answers. In denying us easy answers to big questions and undermining complacent convictions, philosophy liberates us from narrow minded conventional thinking and opens our minds to new possibilities. Philosophy often provides an antidote to prejudice not by settling big questions, but by revealing just how hard it is to settle those questions. It can lead us to question our comfortably complacent conventional opinions.

He describes the intellectual consequences of the security blanket paradox vividly: «The man who has no tincture of philosophy goes through life imprisoned in the prejudices derived from common sense, from the habitual beliefs of his age or his nation, and from convictions which have grown up in his mind without the cooperation or consent of his deliberate reason. The life of the instinctive man is shut up within the circle of his private interests. In such a life there is something feverish and confined, in comparison with which the philosophic life is calm and free. The private world of instinctive interests is a small one, set in the midst of a great and powerful world which must, sooner or later, lay our private world in ruins». It removes the somewhat arrogant dogmatism of those who have never traveled into the region of liberating doubt, and it keeps alive our sense of wonder by showing familiar things in an unfamiliar aspect. He does hold that some philosophical questions appear to be unanswerable. We can often rule out many potential answers. However, problems that looked unsolvable years ago often look quite solvable by current experts. So, the study of philosophy involves not only forming one's own answers to such questions, but also seeking to understand the way in which people have answered such questions in the past.

Philosophical methods include questioning, critical discussion, rational argument, and systematic presentation.

Even where certain knowledge about a particular issue can't be had, there are often interesting things to learn about why we can't have certainty and what sorts of less-than-certain reasons there are for or against holding a position on that issue. Once we have formulated an argument, we want to evaluate the reasoning it offers and evaluate its quality. So, philosophers formulate and evaluate arguments. What often motivates

the study of philosophy is not merely the answers or arguments themselves but whether or not the arguments are good and the answers are true.

Evaluating flawed arguments often points the way towards other arguments and the process of formulating, clarifying, and evaluating arguments continues. This method is known as dialectic. The goal of a debate is to win by persuading an audience that your position is right and your opponent's is wrong. Dialectic, on the other hand, is aimed at inquiry. The goal is to learn something new about the issue under discussion. Unlike in debate, in dialectic your sharpest critic is your best friend. Critical evaluation of your argument brings new evidence and reasoning to light. The person you disagree with on a philosophical issue is often the person you stand to learn the most from (and this doesn't necessarily depend on which of you is closer to the truth of the matter). Dialectic is sometimes referred to as the Socratic Method.

The first historian of philosophy of the 3rd-century Diogenes Laërtius established the traditional division of philosophical inquiry into three parts:

Natural philosophy («physics» from *ta physika*, «things having to do with nature (*physis*)» was the study of the constitution and processes of transformation in the physical world. It has split into the various natural sciences, especially astronomy, physics, chemistry, biology, and cosmology.

Metaphysical philosophy («logic») was the study of existence, causation, God, logic, forms and other abstract objects («*meta ta physika*» lit: «After [the book] the Physics»). It has birthed formal sciences such as logic, mathematics and philosophy of science, but still includes epistemology and others.

Moral philosophy («ethics» from *êthika*, literally, «having to do with character, disposition, manners») was the study of goodness, right and wrong, justice and virtue. It has birthed the social sciences, but still includes value theory (including aesthetics, ethics, political philosophy, etc.).

Metaphysical issues are concerned with the nature of reality. At its core the study of metaphysics is the study of the nature of reality, of what exists in the world, what it is like, and how it is ordered. Traditional metaphysical issues include the existence of God and the nature of human free will (assuming we have any).

What is it? What is a thing? How are space and time related? Does the past exist? How about the future? How many dimensions does the world have? Are there any entities beyond physical objects (like numbers, properties, and relations)? If so, how are they related to physical objects?

Since the 19th century many philosophers and scientists have been understandably suspicious of metaphysics, and it has frequently been dismissed as a waste of time, or worse, as meaningless. Contemporary analytic metaphysics is typically taken to have more modest aims than definitively settling on the final and complete truth about the underlying nature of reality. It's rather about how various claims about the reality logically hang together or conflict and better understanding how things could or could not be. Metaphysicians are in the business of exploring the realm of possibility and necessity.

Ontology is the philosophical study of being. More broadly, it studies concepts that directly relate to being, in particular becoming, existence, reality, as well as the basic categories of being and their relations. Traditionally listed as a part of the major branch of philosophy known as metaphysics, ontology often deals with questions concerning what entities exist or may be said to exist and how such entities may be grouped, related within a hierarchy, and subdivided according to similarities and differences.

Epistemology (Greek ἐπιστήμη – knowledge, cognition, science) study the nature and grounds of knowledge and its limits and validity. It is primarily concerned with what we can know about the world and how we can know it. Epistemology is concerned with the nature of knowledge and justified belief. Even if we can't have certain knowledge of anything (or much), questions about what we ought to believe remain relevant.

Whether knowledge is really possible? How do we know? What is truth? Is knowledge justified true belief? Are any beliefs justified? What is knowledge? Can we have any knowledge at all? Can we have knowledge about the laws of nature, the laws or morality, or the existence of other minds?

Such a knowledge includes propositional knowledge (knowledge that something is the case), know-how (knowledge of how to do something) and acquaintance (familiarity with someone or something).

The view that we can't have knowledge is called skepticism. Many people are not skeptics about scientific knowledge, but are skeptics when it comes to knowledge of morality. Even if we lack absolute and certain knowledge of many things, our beliefs about those things might yet be more or less reasonable

or more or less likely to be true given the limited evidence we have.

What is it for a claim to be true? The ordinary notion of truth would have it that a claim is true if the world is the way the claim says it is. When we make a claim, we represent some part of the world as being a certain way. If how my claim represents the world fits with the way the world is, then my claim is true. Truth, then, is correspondence, or good fit, between what we assert and the way things are. How do we determine that a claim is true? It isn't an epistemic issue. The truth of a claim is quite independent of how or whether we know it to be true.

A tempting pitfall in thinking about truth is to think that truth is somehow relative to meaning or open to interpretation. The truth of sentences, bits of language, is relative to meaning. But the relativity at issue here is linguistic convention. But our everyday notion of truth is not about linguistic convention any more than it is about knowledge or belief. Our notion of truth is fundamentally about the correspondence between *what is meant* by a sentence and the way the world is. Philosophers often refer to what is meant or expressed by a sentence as a *proposition*. While a sentence is a piece of language that has a meaning, the proposition it expresses is not itself a piece of language. Consider «Snow is white» and «Schnei ist wies». Being a non-linguistic thing, the proposition does not have a meaning. Rather the proposition is what is meant. For a bit of language to be open to interpretation is for us to be able to attach different meanings to it. But the meanings themselves are not open to further interpretation. And it is the proposition, what is meant by the sentence, that is the fundamental bearer of truth or falsity. A proposition is true when it represents things as they are and differs from sentence. Sentences, bits of language express propositions.

Truth, understood as correspondence between a claim (a proposition) and the way the world is, is not relative to meaning, knowledge, belief, or opinion. «Without doubt: philosophy should present the truth. But what is the truth, and what do we actually search for when we search for it? Let's just consider what we will not allow to count as truth: namely when things can be this way or equally well the other; for example, the multiplicity and variability of opinion. Thus, truth is absolute oneness and invariability of opinion. So that I can let go of the supplemental term 'opinion,' since it will take us too far afield, let me say that the essence of philosophy would consist in this: to trace all multiplicity (which presses itself upon us in the usual view of life) back to absolute oneness». Fichte J. G.

Moreover, many of the questions and issues in the various areas of philosophy overlap and, in some cases, even converge. Thus, philosophical questions arise in almost every discipline. This is why philosophy also encompasses such areas as: Philosophy of Law, Philosophy of Religion, Philosophy of Mind, Political Philosophy, Philosophy of History, Philosophy of Feminism, Philosophy of Science, Philosophy of Literature, Philosophy of the Arts, Philosophy of Language and, of course, Philosophy of Business.

TOPIC 2. ***Ancient origins of the philosophy of knowledge***

In the *Iliad* and the *Odyssey*, the early Ionian epic poet Homer offers a view of the world as under the influence of the Olympian gods. The Olympian gods were much like humans, capricious and willful. However, even in the early epic poems we find a moral outlook that is key to the philosophical and scientific frame of mind. The willingness to submit one's own opinions to rational scrutiny is essential to moving beyond the realm of myth and into the realm of philosophy and science.

Pythagoras (fl. 525–500 B. C.) traveled in Egypt where he learned astronomy and geometry. His thought represents a peculiar amalgam of hardnosed mathematical thinking and creative but rather superstition. Pythagoras held that all things consist of numbers. He saw mathematics as a purifier of the soul. Thinking about numbers takes one's attention off of particular things and elevates the mind to the realm of the eternal. Scientific thinking, on this view, is not so far from meditation. Pythagoras is responsible for the Pythagorean Theorem which tells us that the square of the hypotenuse of a right triangle is equal to the sum of the squares of the remaining sides. He also discerned how points in space can define shapes, magnitudes, and forms: 1 point defines location, 2 points define a line, 3 points define a plane, 4 points define solid 3-dimensional objects. Pythagoras introduces the concept of form. The earlier Milesians only addressed the nature of matter, the stuff of the universe. Form implies limits. For Pythagoras, this is understandable in numerical terms. Number represents the application of limit (form) to the unlimited (matter).

Pythagoras led a cult that held some rather peculiar religious beliefs. There was the Dionysian

religion, which sought spiritual purification and immortality through drunken carnal feasts and orgies. Pythagorean religious belief also aims at purification and immortality, but without the intoxication and sex. Pythagoras founded a religious society based on the following precepts: that at its deepest level, reality is mathematical in nature, that philosophy can be used for spiritual purification, that the soul can rise to union with the divine, that certain symbols have a mystical significance, that all brothers of the order should observe strict loyalty and secrecy. Members of the inner circle were strict communist vegetarians. They were also not allowed to eat beans.

In this situation, it is easy to see how many might grow impatient with natural philosophy and adopt the skeptical view that reason simply cannot reveal truths beyond our immediate experience. But reason might still have practical value in that it allows the skilled arguer to advance his interests. The Sophists were the first professional educators. For a fee, they taught students how to argue for the practical purpose of persuading others and winning their way. They were less concerned with inquiry and discovery than with persuasion. Social and moral issues come to occupy the center of attention for the Sophists. Their tendency towards skepticism about the capacity of reason to reveal truth and their cosmopolitan circumstances, which exposed them to a broad range of social customs and codes, lead the Sophists to take a relativist stance on ethical matters. Plato derisively labeled the Sophists as *shopkeepers with spiritual wares*.

One of the better-known Sophists, **Protagoras** (481–411 B.C.), authored several books including, *Truth, or the Rejection* (the rejection of science and philosophy), which begins with his best-known quote, *man is the measure of all things, of those that are that they are, of those that are not that they are not*. Knowledge, for Protagoras is reducible to perception. Since different individuals perceive the same things in different ways, knowledge is relative to the knower. This is a classic expression of epistemic relativism. Among the Sophists, this skepticism is manifested in epistemic and Moral Relativism. Epistemic relativism is the view that there is no objective standard for evaluating the truth or likely truth of our beliefs. This is the view that what is true for me might not be true for you (when we are not just talking about ourselves). Epistemic relativism marks no distinction between knowledge, belief, or opinion on the one hand, and truth and reality on the other. For the Sophists, rational argument can only be fruitfully employed as rhetoric, the art of persuasion. For the epistemic relativist, the value of reason lies not in revealing the truth, but in advancing one's interests. Accordingly, Protagoras rejects any objectively knowable morality and takes ethics and law to be conventional inventions of civilizations, binding only within societies and holding only relative to societies.

Socrates is widely regarded as the founder of philosophy and rational inquiry. But also, he held that philosophy is a daily activity. He was born around 470 B. C., and tried and executed in 399 B. C. Socrates did not write anything himself. We know of his views primarily through dialogues of Plato's, plays of Aristophanes and the historical writings of Xenophon. Socrates claimed to hear a divine inner voice he called his *daimon* and he was prone to go into catatonic states of concentration.

Socrates was not an epistemic or moral relativist. He pursued rational inquiry as a means of discovering the truth about ethical matters. But he did not advance any ethical doctrines or lay claim to any knowledge about ethical matters. Instead, his criticism of the Sophists and his contribution to philosophy and science came in the form of his method of inquiry. As the Socratic Method is portrayed in Plato's Socratic dialogues, interlocutor proposes a definition or analysis of some important concept, Socrates raises an objection or offers counter examples, then the interlocutor reformulates his position to handle the objection. Socrates raises a more refined objection. Further reformulations are offered, and so forth. Socrates uses the dialectic to discredit others' claims to knowledge. While revealing the ignorance of his interlocutors, Socrates also shows how to make progress towards more adequate understanding. Socrates finds that he is wisest because he recognizes his own lack of knowledge while others think they know, but do not. We tend to be content with our opinions and we rather like it when others affirm this contentment by agreeing with us, deferring to our claims to know or at least by «respecting our opinion» (whatever that is supposed to mean).

Plato (429–347 B. C.) has a taste for every sort of knowledge and who is curious to learn and is never satisfied may be justly termed as a philosopher. Philosophy is the acquisition of knowledge.

Metaphysics and epistemology are best summarized by his device of the divided line. The vertical

line between the columns below distinguishes reality and knowledge. It is divided into levels that identify what in reality corresponds with specific modes of thought.

Objects – Modes of Thought
The Forms – Knowledge
Mathematical objects – Thinking
Particular things – Belief /Opinion
Images – Imaging

Corresponding to these degrees of knowledge we have degrees of reality. The less real includes the physical world, and even less real, our representations of it in art. According to Plato, the only objects of knowledge are the forms which are abstract entities. The forms do not exist in space and time. They are ideals in the sense that a form, say the form of horse-ness, is the template or paradigm of being a horse. All the physical horses partake of the form of horse-ness, but exemplify it only to partial and varying degrees of perfection. No actual triangular object is perfectly triangular, for instance. But all actual triangles have something in common, triangularity. Perfectly triangularity is the form of triangularity. Beautiful physical things all partake of the form of beauty to some degree or another. Perfect beauty is not something we can picture or imagine. An ideal form of beauty is required to account for how beautiful things are similar. Only opinion can be had regarding the constantly changing physical things, events, and states of affairs we are acquainted with through our sensory experience.

Plato offers us a tripartite account of the soul. The soul consists of a rational thinking element, a motivating willful element, and a desire-generating appetitive element. The knowledge of the forms is a kind of remembrance. The soul is like a chariot drawn by two horses, one obedient, the other rebellious and also the charioteer as the rational element of the soul. To each of the elements of the soul, there corresponds a virtue; for the rational element there is wisdom, for the willing element of the soul there is courage, and for the appetitive element there is temperance. Temperance is matter of having your appetites under control. Temperance and courage are cultivated through habit. In guiding our appetites by cultivating good habits, Plato held, we can come to desire what is really good for us. Wisdom is acquired through teaching, via the dialectic, or through remembrance. Perhaps, to make the epistemological point a little less metaphysically loaded, we can think of remembrance as insight and intuition. A more general virtue of justice is conceived as each thing harmoniously functioning as it should. The charioteer is keeping both horses running in the intended direction and at the intended speed. In the virtuous state, the rational element (the philosophers) is in charge. The willing element (the guardians or the military class) is obedient and courageous in carrying out the policies of the rational leadership. And the appetitive element (the profit-driven business class) functions within the rules and constraints devised by the rational element (for instance, by honestly adhering to standards of accounting). A temperate business class has the profit motive guided by the interests of the community via regulation devised by the most rational. The virtuous business class refrains from making its comfort and indulgence the over-riding concern of the state. Plato, in other words, would be no fan of the market economy.

Plato's vision of social justice is non-egalitarian and anti-democratic. While his view would not be popular today, it is still worthwhile to consider his criticism of democracy and rule by the people. Plato has Socrates address this dialectically by asking a series of questions about who we would want to take on various jobs. Suppose we had grain and wanted it processed into flour. We would not go to the cobbler or the horse trainer for this, we'd go to the miller. Suppose we had a horse in need of training. We obviously would not go to the miller or the baker for this important task, we'd go to the horse trainer. In general, we want important functions to be carried out by the people with the expertise or wisdom to do them well. Now suppose we had a state to run. Obviously, we would not want to turn this important task over to the miller, the cobbler, or the horse trainer. We'd want someone who knows what he or she is doing in charge. Plato has a healthy regard for expertise. As Plato sees it, democracy amounts to turning over the ethically most important jobs to the people who have the least expertise and wisdom in this area. There is very little reason to expect that a state run by cobblers, millers, and horse trainers will be a virtuous state. Philosophy is a science which discovers the real nature of supernatural elements.

Aristotle was a student of Plato, but he rejected Plato's other-worldly theory of forms in favor of the view that things are a composite of substance and form. His metaphysics is decidedly anti-Platonist.

The material of the world takes various forms. Here it constitutes a tree and there a rock. The things constituted of matter have various properties. The tree is a certain shape and height, the rock has a certain mass. Aristotle's forms are themselves part of the physical spatio-temporal world. It might thus be tempting to think of Aristotle as a materialist, but his account of the nature of things includes more than just matter. Aristotle held the view that form is an integral part of things in the physical world. A thing like a rock or a tree is a composite of both matter and form. In addition to matter, the way matter *is* gets included in Aristotle's metaphysics.

Among the ways things are, some seem to be more central to their being what they are than others. For instance, a tree can be pruned into a different shapes without the tree being destroyed. The tree can survive the loss of its shape. But if it ceased to be a plant, if it got chipped and mulched, for instance, it would also cease to be a tree. That is to say, being a plant is *essential* to the tree, but having a certain shape isn't. An essential property is just a property a thing could not survive losing. By contrast, a property something could survive losing is had *accidentally*. Aristotle introduces the distinction between essential and accidental characteristics of things. When we set out to give an account of what a thing is, we are after an account of its essence. To say what a thing is essentially is to list those ways of being it could not survive the loss of. My hair length is not essential to me, but my having a mind is essential to being me.

How a thing functions is a critical aspect of its nature in Aristotle's view. As an organism, I metabolize. As an organism with a mind, I think. These are both ways of functioning. For Aristotle, what makes something what it is, its essence, is generally to be understood in terms of how it functions. Aristotle's account of the essential nature of the human being, for instance, is that humans are rational animals. That is, we are the animals that function in rational ways.

Functioning is purposeful, ends and a goal, *telos* oriented. Aristotle has a *teleological* view of the world. That is, he understands things as functioning towards ends or goals, and we can understand the essence of things in terms of these goal-oriented ways of functioning. We still understand people's actions as teleological or goal oriented. We explain why people do things in terms of their purposes and methods. Aristotle similarly understands natural processes generally as ends oriented. Even Aristotle's physics is fundamentally teleological. So, water runs downhill because it is part of its essential nature to seek out the lower place.

According to Aristotle, to explain something involves addressing *four causes, things because of which*. Part of explaining something involves identifying the material of which it is made. This is the *material cause*. Thales account of the nature of the world addressed its material cause. A further part of explaining something is to give an account of its form, its shape and structure. A complete explanation of what this chair is would include a description of its form. This is the *formal cause.* Pythagoras and Plato introduce the explanation of formal causes. The idea of a *final cause* refers to the function, end, or telos of a thing. The chair is a comfortable place to sit. Aristotle sees final causes as pervasive in the natural world. A complete biological account of an organism includes both its anatomy (its material and formal causes) and physiology (which involves functioning and final causes). The remaining cause (explanatory principle) is the one we can identify as a kind of cause in our normal sense of the word. The *efficient cause* of a thing is that which brings it into existence or gives form to its material. So, for instance, the activity of a carpenter is the efficient cause of my chair.

The founder and namesake of the Epicurean school was **Epicurus**, who adapted the Atomistic views of Democritus and held that happiness is achieved through pleasure. He established his school *The Garden*, which accepted women in. Epicurus did not allow his followers to communally own their property, since he believed this showed a distrust of one another. His philosophy sought tranquility first of all through simple living. Epicurus held that happiness closely connects with pleasure.

The atoms are in a continual state of motion. Among the atoms, some are separated by great distances, others come very near to one another in the formation of combined bodies, or at times are enveloped by others which are combining. But in this latter case they, nevertheless, preserve their own peculiar motion, thanks to the nature of the vacuum, which separates the one from the other, and yet offers them no resistance. The solidity which they possess causes them, while knocking against one another, to react the one upon the other. Eventually the repeated shocks bring on the dissolution of the combined body; and for all this there is no external cause, the atoms and the vacuum being the only causes. Atoms need to

deviate at least a little when they fall, which allows them to make contact with other atoms. If they did not slightly swerve, they would all fall down and there is nothing in the nature. The swerve occurs without any cause. This claim drew criticism. The general idea gains more sympathy today in view of the contemporary theory of indeterminacy in quantum physics (electrons do not have determinate positions and movements). Since humans are composed entirely of physical atoms, then all of our actions are determined according to physical laws. Free will is the result of the slight swerve. Image-particles fly off objects, but keep their qualities and in such way perception occurs.

Stoicism (from Greek *stoa* – porch) held that the cosmos is governed by an over-arching fatalistic law, and we best achieve happiness when we resign ourselves to fate. **Zeno** lived almost ascetic life. A famous story of Zeno relates that he once whipped a slave for stealing; the slave said it was his destiny to steal, and Zeno said it was also his destiny to be whipped. According to Stoicism, there is a consistency between the destiny that is fated for us and justice for how we behave. Fate is the connecting cause of existing things, or the reason according to which the world is regulated. The most prominent feature of physics is their notion of fate: everything in the world is determined according to the principle of divine law. They variously describe their notion of fate as God, fire, destiny, and, perhaps most significantly, *logos*, the Greek term for «order». Stoics take the opposite to Aristotle view: one of two possibilities is indeed true right now, before it ever happens, even though we don't yet know which one. This position is the *law of bivalence*. But the state of affairs indicated in that proposition is fated long before it occurs. Stoics created the foundational to computer programming logic.

Skepticism emphasized doubting everything, specifically as a means of becoming tranquil and happy. **Pyrrho** claimed that we should suspend judgment on every matter. The starting point is recognizing that there are always two or more conflicting ways of perceiving anything. Ataraxy opposes to debates between people and in a human mind. For any so-called truth that you pick, there are different and conflicting ways of viewing it.

By balancing reasons that are opposed to each other, we first reach the state of suspension of judgment, and afterwards that of tranquility. **Sextus Empiricus** arguments or points are: (1) the method based upon the differences in animals; (2) that upon the differences in people; (3) that upon the difference in the constitution of the organs of sense; (4) that upon differing circumstances; (5) that upon differing position, distance, and place; (6) that upon differing mixtures; (7) that upon differing quantity and constitution of objects; (8) that upon differing relations; (9) that upon differing frequency or rarity of occurrences; (10) that upon differing systems, customs, laws, mythical beliefs, and dogmatic opinions. All value judgments of religion and morality are creations of human culture.

Skepticism's assertions are inconsistent and self-contradictory. But the Skeptics use reason as an instrument, not dogmatically, but demonstratively. Thus, the entire «theory» of skepticism is a tool to refute dogmatic assertions of truth on its own grounds, and it does not attempt to establish any indubitable claim about skepticism itself. Besides, their very behavior is an assertion of truths that we all accept. Sextus argued that the day-to-day life of the skeptic observes normal appearances in four ways: (1) the guidance of nature in what we perceive and think, (2) the necessity of feelings such as hunger and thirst, (3) the tradition of laws and of customs regarding right and wrong conduct, and (4) the teaching of skills such as our jobs would require. *We confess that we see, and we are aware that we comprehend that such a thing is the fact, but we do not know how we see, or how we comprehend. We assert what is actually the fact, but we do not describe its character. Again, we feel that fire burns, but we suspend our judgment as to whether it has a burning nature.* From the sceptic position it's better to speak *It looks like, Seems to me* that *It's so*.

Plotinus held that there is the One, a single source of all reality from which every existing thing, hypostasis (underlying reality) emanates, like light rays emitted from the sun. The One is pure being and from it radiates all the levels of reality, with those closest to the One being most perfect, and those furthest away the least perfect. Beyond that is simply non-being, sort of like absolute darkness. Everything that exists, then, lies somewhere on a spectrum between the pure being of the One at one extreme, and non-being at the other extreme.

The One is pure undifferentiated unity and the cause of everything. Because of its pure and indivisible nature, however, it is impossible to directly describe it with words. While we can give no concrete description of the One, we still have some limited understanding of it that we can put into words.

By saying enough about what it is not, we may indirectly arrive at an idea of what it is. Later philosophers refer to such a description of the divine as the way of negation.

The Intellect has separate parts to it such as the Forms, unlike the One which has no parts. The Intellect thinks about the Forms, thereby giving a logical organization to all reality which relies on these abstract truths. The divine Soul in its more obscured state desires the perfect Forms that it does not possess and produces particular things that copy the Forms. The material world is the very last level of reality just before non-being. Evil simply is the absence of good, just as darkness is the absence of light.

Where do human beings fit into this grand divine scheme of the cosmos? According to Plotinus, there are two parts to the human soul, a higher and a lower. The higher part of my soul resides within the divine Intellect and has direct awareness of the perfect Forms. However, the lower part is trapped within my body in the material world, and strives to be released from it. We will have no experience of our individual selves and be in a state of tranquility and ecstasy. *Anyone that has seen the Good, knows what I mean when I say that it is beautiful. Even the desire of it is to be desired as a good. When you see that you have become this, then you have become sight. What is beyond the Intellect we affirm to be the nature of Good radiating Beauty before it.*

When we speak of the philosophical tradition of Western civilization, it is largely in reference to Greek theories. Plotinus's philosophy was the only one that was widely embraced by Christian philosophers. Augustine Aurelius under the influence of Plato, formulates much of what will become orthodox Catholic doctrine. Aristotle's thought survived in the Islamic world. Thomas Aquinas found ways to use Aristotle's metaphysical arguments in the cause of advocating the existence of a Christian God. Aristotle's physics becomes the standard scientific view about the natural world in Europe.

TOPIC 3. *Rationalism*

According to Rationalism at least some knowledge can be had through reason alone, through the light of reason. The paradigm example of knowledge is mathematics, no experience is required to be justified in accepting truth.

René Descartes was also an important mathematician and he made significant contributions to the science of optics. He wants to find a firm foundation on which certain knowledge can be built and doubts can be put to rest. So, he proposes to question any belief. He goes through all of his beliefs, not individually but by categories. Cartesian skepticism is philosophy of the suspicion. In his *Meditations of First Philosophy* Descartes wrote that to ask *How do we know?* is to ask for reasons that justify our belief in the things we think we know. It is a classic example of the epistemological project of providing systematic justification for the things we take ourselves to know. This project carries with it the significant risk as the problem of skepticism.

Even an evil deceiver could not deceive Descartes about his belief that he thinks. At least this belief is completely immune from doubt, because Descartes would have to be thinking in order for the evil deceiver to deceive him. We form the belief that I am having a visual experience of anything. This belief about the content of my sense experience may yet be indubitable. Our beliefs about the contents of our own mind couldn't be wrong about these because we have immediate access to them. One of the more famous arguments in philosophy *Cogito Ergo Sum* or *I think, therefore I exist*.

Descartes' philosophy of mind is dualistic: the world is made up of two fundamentally different kinds of substance, matter and spirit (or mind). I can doubt the existence of my body but I can't doubt the existence of my mind. Mind and matter interact problematically. The body is a physical object that exists in space and time and is subject to the deterministic laws of nature. The mind, being spiritual in nature, exists eternally in an abstract realm rather than existing in the physical realm of space and time. Further, the mind is not bound by mechanistic laws of nature, but it has free will that allows it to will or not will to do one thing or another. The natural world as functioning like a predictable clockwork mechanism was on the rise. But spiritual things, minds, are immaterial, exist eternally, and have free will.

The critical faults in Descartes' view were quickly spotted by Princess Elisabeth of Bohemia. If mind and body are so completely different, it is hard to see how can have any influence on each other at all. How does something that exists outside of space and time have any influence over the body that exists in space and time? How can the behavior of my causally determined body be influenced by a freely willing

mind?

In *The Passions of the Soul* Descartes discussed belief that the human body contained animal spirits. These animal spirits were believed to be light and roaming fluids circulating rapidly around the nervous system between the brain and the muscles, and served as a metaphor for feelings, like being in high or bad spirit. These animal spirits were believed to affect the human soul, or passions of the soul. Descartes distinguished six basic passions: wonder, love, hatred, desire, joy and sadness. All of these passions represented different combinations of the original spirit, and influenced the soul to will or want certain actions. For example, that fear is a passion that moves the soul to generate a response in the body. Pineal gland is a connector between the soul and the body. Descartes argued that signals passed from the ear and the eye to the pineal gland, through animal spirits. Thus, different motions in the gland cause various animal spirits. They could have a useful effect to people behavior, but could distort the commands from the pineal gland, thus humans had to learn how to control their passions. These views became a ground to reflex theory. He argued that external motions, such as touch and sound, reach the endings of the nerves and affect the animal spirits. Heat from fire affects a spot on the skin and sets in motion a chain of reactions, with the animal spirits reaching the brain through the central nervous system, and in turn, animal spirits are sent back to the muscles to move the hand away from the fire. Through this chain of reactions, the automatic reactions of the body do not require a thought process.

Descartes was among the first scientists who believed that the soul should be subject to scientific investigation. His writings went on to form the basis for theories on emotions and how cognitive evaluations were translated into affective processes. Descartes believed that the brain resembled a working machine and mathematics and mechanics could explain the most complicated processes of the mind. In the 20th century, Alan Turing advanced computer science based on mathematical biology and physiologist Ivan Pavlov was inspired by Descartes. Today, the philosophy of mind is merging with neuroscience, cognitive psychology, and information science.

Benedict Spinoza was seeking metaphysical foundations of knowledge. The world is intelligible, that its nature can be understood rationally. *Ethics* is written in a geometric style. He begins with a few definitions and axioms and the work proceeds by deductively proving an impressive array of further propositions. The propositions derived from his initial definitions give an account of God, the natural world (these turn out to be the same thing), the self, the nature of human freedom, the nature of the emotions, and the nature of the good life in-so-far as it is attainable for beings like ourselves. Any kind of mind-body interaction will perforce involve mutual limitations on each. If through a mental act of will I cause some change in the material realm, then the material realm is limited in that it can't be other than I have willed it. Likewise, if the material world has some effect on my mind, then my mind is similarly limited. The only way that any substance could be absolutely unlimited is for there to be no other substances that could possibly limit it. So, there is only one substance and it is both God and nature. Every facet of the world is a mere part of this one substance, God/nature. And everything we do and experience is a limited manifestation of the essence of God. Every aspect of our lives, everything we think and do, is an expression of God/nature's essence which is uncaused and necessary. For this reason, nothing we do or experience could possibly be any different. This settles the matter of free will, though not quite it the way Descartes would hope.

Our perception of the world as including many distinct things and minds other than our own is a confusion of ours or an inadequate idea. The true nature of the world is singular. God/nature being the one existing substance is self-sufficient. Since it depends on nothing and is affected by nothing, everything about God/nature is necessary. God/nature, being infinite and perfect in all respects, has an infinite number of aspects, or attributes. Our existence as human beings present us with only two of these, the attribute of thought and the attribution of extension (physical spatio-temporal existence). Spinoza identifies God with all of nature and denies that people have any existence distinct from God/nature. God is not personal on this view. God/nature is really nothing like us at all.

The mind and the body are really one and the same or the mind is the idea of the body. We are limited modification of God/nature. One of the ways we are limited is in only being aware of two of the infinite attributes of God, thought and extension. The idea that the mind and the body are different and interact is a confusion of ours that we suffer due to thinking of ourselves sometimes under one attribute,

thought, and at other times under another, extension. Mind and body are one and the same limited modification of God, it can be understood on one hand through the attribute of thought and on the other through the attribute of extension.

We are finite an imperfect modes of the attributes of thought and extension. As such limited and imperfect beings, we see ourselves as separate from many other things. Being ignorant of the causes of things, including the determination of our own wills, we imagine that things might have been otherwise. But everything happens of necessity. Spinoza denies that we have free will. Living well, according to Spinoza, involves coming to terms with our limitations and the way things must be as a matter of necessity. And the way to do this is through better understanding ourselves, the world (God/nature) and our position in the world. The good life, for Spinoza, is one organized around the intellectual love of God/nature.

There is one kind of freedom that we might aspire to in all of this, and it is the kind of freedom that can be had through the intellectual love of God/nature. The freedom we can have been freedom from the tyranny of our passions, our emotions. Our hopes and fears are passions that make us anxious and insecure when we fail to understand their causes and our own place in nature. Intellectual love of God/nature, is the one therapy open to us in addressing the insecurity and anxiety that comes with human vulnerability and mortality. Knowledge of how to live one's life is established after the manner of a proving a theorem of geometry. Coming to understand his demonstration of how to live well will itself be an exercise in living well.

Gottfried Wilhelm Leibniz also was an important mathematician and with Newton vied for credit for discovering the calculus of infinitesimals. Leibniz was arguably the first to have imagined anything like information technology. Among his grand ambitions was to formulate a universal symbolic language for science and philosophy that would be rigorously rule driven and free of all ambiguity. He even got as far as constructing a calculating machine, though not a very reliable one. He was also politically active as an advisor to assorted rulers, aristocrats and tends to re-union of Christian church.

Leibniz' metaphysical views are the world to consist of monads. Each monad is simple and indivisible. But monads are not merely physical, like atoms. Each monad would include both a physical aspect and a mental aspect. Physical objects are made up of monads that are also minds, just particularly dim-witted ones. Monads appear to interact with each other. We seem to influence each other and make things happen in the physical world. But there is no actual interaction between monads. Instead, monads exist in a harmony that is pre-established by God. As a result, like an element in a spectral image or a droplet in a cloud, each monad carries in it a reflection of all creation.

Leibniz metaphysics solves mind/body problem neatly by making his substances, monads, have mind as an integral part. We needn't worry about mind-body interaction if mind and body are already unified.

Liebniz posits a plurality of substances. Monads fit the bill. In order to preserve free will Leibniz needs for the substances that are mind not to be causally determined by other substances. The pre-established harmony of monads is his means of achieving this. But while Leibniz thereby avoids causal determinism, he seems to be saddled with a kind of theological determinism instead. Everything that happens, including every choice you make, will have been determined by God.

TOPIC 4. *Empiricism*

Empiricism takes all of our knowledge to be ultimately grounded in sense experience. The empiricist philosophical tradition comes to fruition in Great Britain over the course of the 17th and 18th centuries.

John Locke develops his empiricist epistemology in his *Essay Concerning Human Understanding*. Locke's approach is to examine the origins of the contents of the mind. He argues against innate ideas. The mind starts off as a *tabula rasa*, a blank slate. All of our ideas have their origin in experience. Simple ideas, say of solidity and figure, are acquired through the senses, and from these we form complex ideas, say the idea of a dog, through the capacities of the understanding. Locke launched a research program for developing an empiricist account of the mind rather than spelling out a fully developed view.

Locke thinks that some of the impressions we get from sense experience are genuinely similar to how things are objectively in the world. Our sense experience of the shape of things, for instance, reflects

the ways things really are. Locke refers to the qualities where there is a resemblance between our experience and the way things are as *primary qualities*. Shape, motion or rest, and number are a few of the primary qualities. Other aspects of our sense experience don't resemble the qualities in their objects. The taste of an apple, for instance, is not really in the apple. What is in the apple is just a power to produce the experience of a certain flavor. But we have no grounds for thinking that this power as it exists in the apple resembles in any way the sense experience we have of its taste. Locke calls qualities where our sense experience doesn't resemble the qualities that give rise to our experience *secondary qualities*. Our knowledge of the external world, then, is based entirely on our experience of the primary qualities. Empiricism, as we will see in the case of later empiricists, especially Hume, tends to place sharp limits on what is knowable.

While all experience depends on having simple ideas had through sense experience, Locke does not take experience to be limited to these. We also have experience of the operations of the mind in building up complex ideas out of simple ideas. Once you have some simple ideas through sense experience, you also have an experience of yourself and of your mental operations on those simple ideas. So given simple ideas through experience, the operations of the mind become a source for further ideas. Locke thinks knowledge of the self, God, mathematics, and ethics can be derived from this additional internal source of experience. Hume, as we shall see, is not so optimistic.

Locke political thought was probably influenced significantly by Spinoza. Locke argued against the divine right of kings to rule and instead defended a liberal egalitarian political philosophy on which people have equal and natural rights to liberty. Liberty is being free from domination by others. Liberty is not being free to do whatever one pleases. For starters, if everyone is to be free from domination, then it follows that nobody is free to dominate. Locke also offers the classic justification for property rights as an extension of our self-ownership. So, property rights are seen as natural extensions of our human liberty. The point of government is just to secure our natural liberties to the highest degree possible as a night watchman. So, government is legitimate only when it is limited to this role. Thomas Jefferson was a close student of Locke's political thought.

Locke gave argument against the aristocracy and the alleged divine birth right of rulers. The authority of government is entirely derived from the consent of its free and equal citizens. According to Locke, in the state of nature (or in the absence of government) people exist in a state of perfect freedom. They are free to pursue their own happiness and well being. But this perfect freedom is not a license to do whatever one likes or treat others as one likes. Rather the freedom people have a natural and inalienable right to is freedom from domination and coercion by others. *The state of Nature has a law of Nature to govern it, which obliges every one, and reason, which is that law, teaches all mankind who will but consult it, that being all equal and independent, no one ought to harm another in his life*.

By the moral law of nature, one is not justified in assaulting others except as retribution for an injustice they have committed to one's self. Likewise, one is not justified in taking another's property except as redress for that person taking or destroying one's own property. But this state of nature inevitably leads to a state of chaos because people are not very good arbiters of justice in their own case. They are prone to inflate the wrongs committed against themselves and seek too much in the way of redress or retribution. The establishment of government is justified as a more efficient means of preserving the natural rights of individuals. In joining civil society, we voluntarily turn our right to protect and enforce our individual rights over to the state. The legitimate function of the state is to enforce the rights of equality and liberty that people enjoy by nature. Where a government exceeds these limits, Locke says people are justified in rebelling against the government.

Self-ownership is central to the natural rights equally enjoyed by all. Property rights are then justified as an extension of self-ownership. Locke sees all of nature as initially held in common by people, when a person *mixes her labor with the stuff of the earth*. But Locke also recognizes limits to the extent of property rights. Specifically, persons do not have a right to more property than they can make use of. Above and beyond what one can make use of, the fruits of one's labor return to the commons and are to be freely available to others. If natural resources can be regarded as unlimited, then there is not injustice to me if my neighbor has accumulated great wealth while I have little. This is because my neighbor's great wealth doesn't place any restriction on me investing my energy in creating wealth of my own. But if natural resources are limited and my neighbor has claimed much of what is available in the creation of his private

property, then my opportunities are limited to that degree. But there remain the possibilities of regulating access to the commons or expanding the commons in some way. We don't create wealth from our own labor in a social vacuum. Enjoying the fruits of my labor nearly always requires doing business with someone else and the view of property rights offered by Locke is unrealistically individualistic.

George Berkeley is best known for arguing for idealism on empiricist grounds. In metaphysics, idealism is the view that there is no physical substance underlying our sense impressions of the world. Rather, the world consists entirely of ideas. Your mind is just a bundle of impressions, and there is nothing in the world except for so many minds having their various perceptions.

Berkeley's argument attacks Locke's distinction between primary and secondary qualities and argues that all of our sense impressions are mere appearances and that we have no grounds for thinking that any of them bear any resemblance to the way things are. Since we lack any empirical experience of the underlying substances in which qualities in here, we have no empirical reason to suppose underlying substances even exist. All we have access to our sense impressions, and these are mental things, ideas. So, all we can claim knowledge of our ideas beginning with our sense impressions, the most basic ideas.

Berkeley also argues that positing underlying substances do no significant explanatory work. So, the common-sense empiricist view ought to be that we live in a world of ideas that lacks any underlying physical substance. This startling view might make us wonder what happens to my desk when I leave the room and cease to perceive it. Berkeley argues that the objects of our everyday life do have an enduring existence when we are absent. They continue to exist as ideas in the mind of God.

David Hume's empiricist epistemology is grounded in his philosophy of mind. Hume starts by asking what we have in the mind and where these things come from. He divides our mental representations into two categories, the relatively vivid *impressions*, these include sensations and feelings, and the less vivid *ideas* which include memories and ideas produced by the imagination. What distinguishes impressions from ideas in our experience is just their vividness. The picture of the mind Hume offers is one where all of our beliefs and representations are cooked up out of basic ingredients provided by experience. Our experience gives us only impressions through sense experience and internal impressions like feelings. From this we generate less vivid ideas. Memories are merely faint copies of impressions. Through the imagination we can generate further ideas by recombining elements of ideas we already have. So, through impressions we get the idea of a lizard and the idea of a bird. We can then generate the idea of a dragon by imaginatively combining elements of each.

The imagination is guided by associating relations like resemblance, contiguity (next-to-ness) and cause and effect. The imagination also includes our ability to understand things when we reason well in formulating new ideas from old ones. *A priori* reasoning, which is reasoning independent of experience, can produce understanding of relations of ideas. Mathematical and logical reasoning is like this. But *a priori* reasoning only reveals logical relations between ideas. It tells us nothing about matters of fact. Our ability to understand matters of fact, say truths about the external world, depends entirely on *a posteriori* reasoning, or reasoning based on experience. Often our philosophical confusion is the result of adding too more to our experience.

Hume's Skeptical Empiricism touch also a moral truths. The idea that there are objective moral truths, according to Hume, is a mistaken projection of our subjective moral sentiments. Hume is not worried that his subjectivism about morality will lead to moral anarchy. The subjectivist is justified through any other moral opinion. Hume thinks we have a basis for negotiating our moral differences in our more general and more or less universally shared moral sentiments of self-love, love for others, and concern for happiness. Hume's skepticism about objective moral truths now strikes many people as common sense.

There are four component ideas of everyday idea of causation: the idea of a constant conjunction of cause and effect (whenever the cause occurs, the effect follows); the idea of the temporal priority of the cause (the cause happens first, then the effect); the idea of causes and effects being contiguous (next to each other) in space and time; the idea of a necessary connection between the cause and the effect. But the idea of causes necessitating their effects, according to Hume's analysis, is a confused projection of the imagination for which we find no basis in experience. There aren't rational grounds for thinking that causes do necessitate their effects.

Our assumption that our impressions do correspond to an external reality is a rationally

unsupportable product of our imagination. Closely related to Hume's skepticism about causation is Hume's skepticism about inductive reasoning. Inductive argument, in its standard form, draws a conclusion about what is generally the case, or what will prove to be the case in some as yet unobserved instance, from some limited number of specific observations. Every observed sample of water heated to well over 100 C has boiled. Therefore, whenever water is heated to well over 100 C, it boils. Unless every instance of water heated to over 100 C in the history of the universe is among the observed instances, we can't be sure that the conclusion is true given the truth of the premises. It follows, that strong inductive arguments like the one above is not deductively valid. But Hume considers the suggestion that every inductive argument has a principle of induction as a suppressed premise, and it is this principle of induction that renders the inference from premises to conclusion rational. This principle of induction tells us roughly that unobserved instances follow the pattern of observed instances. So inductive arguments really go something like this. Every observed sample of water heated to over 100 C has boiled. Unobserved cases tend to follow the pattern of observed cases. So, whenever water is heated to over 100 C, it boils.

The argument still isn't valid, but that's not what we are aiming for in induction. Given the hidden second premise – our principle of induction – we can reasonably hold that the premises taken together give us good grounds to accept that the conclusion is probably true. However, if this principle of induction (2 above) is to render inductive inferences rational, then we need some grounds for thinking that it is true. In considering how this principle of induction is to be justified, Hume presents a dilemma. Since there is no contradiction in denying the principle of induction, it cannot be justified *a-priori* (independent of our experience as can be done with logical truths). And any empirical argument would be inductive and therefore beg the question by appealing to the very principle of induction that requires support. So, Hume concludes, we have no rational grounds for accepting inductive inferences. But inductive argument is not rational still, all of our experience of the sun regularly rising gives us no reason to think its rising tomorrow is even likely to happen. This is why philosophers speak of this topic as the Hume's dilemma or the *Problem of Induction.*

Empirical skepticism about religious matters leads Hume to argumentation, that the weight of the evidence of our experience overall will always give us stronger reason to mistrust our senses in the case of a seemingly miraculous experience than to doubt the otherwise consistently regular course of events in our experience. Testimony by others of miracles is on even shakier ground. No testimony is sufficient to establish a miracle, unless the testimony be of such a kind, that its falsehood would be more miraculous than the fact which it endeavors to establish. Hume also undermines many arguments for the existence of God, including the Design Argument. According to Hume, the Design Argument is a weak argument by analogy. So even assuming we find the appearance of design in nature, we have little grounds to think that it is the product of a personal god or any sort of entity we can relate to. Charles Darwin cites Hume as among his major influences.

The contents of our immediate experience are just particular impressions and ideas. But we have no experience of any single unified self that is the subject of those experiences. The idea of a self, including the idea of the self as a soul, is a fanciful projection from our experiences. All we can say in an empirically grounded way of ourselves is that we are just a bundle of experiences. *For my part, when I enter most intimately into what I call myself, I always stumble on some particular perception or other, of heat or cold, light or shade, love or hatred, pain or pleasure. I never can catch myself at any time without a perception, and never can observe anything but the perception.*

A strict and carefully reasoned empiricism leads to a variety of skeptical conclusions. We tend think of science as pretty empirical. But perhaps scientific inquiry is not as strictly empirical as Hume's epistemology. Or perhaps, as some have argued, science can get along fine without induction or causation. Still, if we are not comfortable with Hume's skepticism about causation and induction, this might be cause to reconsider his empiricism. And perhaps also the skepticism about morality it seems to invite.

Empiricism led to Logical Behaviorism of Gilbert Ryle. Mental states like beliefs, desires, perceptions, and anxieties are not the sorts of things we can examine as physical object. This seems to take the mind out of the person. There is no place for any account of our inner lives or even the notion that my beliefs and desires are in some sense in me or part of me. The Brain State Identity Theory, most ably advanced by J. J. C. Smart proposes that mental states are identical with brain states. Contrary to Descartes'

dualism, it takes mind to be a physical thing. Namely, it takes the mind to be identical with the brain. It's a physicalist view of the mind. Any belief is a certain neuro-chemical state of the brain. If a great many people share this belief this is a belief type. One's belief is just one token of that shared belief type. The distinction between types and tokens is important. The Identity Theory originally proposed that mental state types are identical with brain neuro-chemical state types. A popular and plausible example of such mental state/brain state type identity was that pain just is C-fibers, a certain kind of neuron, firing. Different parts of the brain carry out different functions and there is the map of the brain areas. But the science tells us is that different brains store and process the same information in very different ways of a different people with a different property.

For functionalism to be in a mental state is to be in some underlying state, perhaps unobservable, that fulfills a certain functional role. It involves attributing underlying causal base properties. It provides a means for specifying what it is for an underlying brain state to realize, or be a causal basis for, a mental state type. Any state, physical or otherwise, can realize a mental state so long as it fulfills the appropriate role. One could be both a functionalist about mental states and a Cartesian dualist.

Another kind of dualism, property dualism by David Chalmers implies, that one kind of matter has fundamentally different kinds of properties. Chalmers thinks philosophical zombies without subjective conscious experience are possible, so consciousness can't be understood purely in terms of physical properties or the functional processes they ground. He instead proposes that we understand some properties of minds, like consciousness, as fundamentally mental properties that are not reducible, even in principle, to physical properties. While no distinct kinds of non-physical substance are proposed, Chalmers is offering a kind of dualism we now call property dualism. Property dualism in the philosophy of mind is the view that among the primitive most fundamental properties of our world, there are both basically physical properties and basically mental properties.

SECTION 2. *Trends of philosophical scientific knowledge*

TOPIC 5. *Philosophy of science and philosophy of mind*

In high school you were probably introduced to something misleading called *the* scientific method. According to this picture of science, science proceeds by asking a question, formulating a hypothesis, designing an experiment to test the hypothesis, and analyzing the results to reach a conclusion. The experiment should be repeatable and the hypothesis is only considered well supported if our experimentation yields plenty of data in support of it. When we find plenty of data supporting our hypotheses, the pattern of reasoning employed is basic induction by enumeration where we generalize or predict based on observed patterns.

While this model does describe a frequently employed method in science, it's misleading to think of this as *the* scientific method. The disservice done to the actual practice of science by this bit of high school curriculum is really quite egregious. It's as if you were shown how to play a C major scale on the piano and then told "there you go, that's how to make music. That's the method." In actual practice, scientists employ a variety of methods that involve a broad range of patterns of reasoning, both inductive and deductive. Testing hypotheses often involves things like hunting for clues, diagnosing the reasons of unexpected results, engineering new ways of detecting evidence, and a great many things beyond designing experiments and generalizing based on the results of these. The support for a hypothesis is often a matter of inference to the best explanation rather than inductive generalization. Sometimes the best analysis of data seeks alternative explanations for data anomalies that do not fit with predictions rather than automatically counting such data as evidence against a hypothesis.

Investigating the messy, gritty details that drive actual scientific practice is where the real action in the philosophy of science is today. Explaining how science advances human understanding of the world often requires a close examination of what's going on in actual scientific practice. It is not uncommon for philosophers of science to describe their work as something like the science of science. Methods are not to be prescribed up front by the philosophical lords of epistemology. Rather, in contemporary philosophy of science we look to science to see what methods actually work, and then try to better understand the significance of these.

Over the past few chapters we have covered a couple of classic skeptical problems. In the wake of Descartes and Hume you might worry that we can't know much at all. Out of intellectual laziness, lots of people are willing to just let the matter rest there and think we can only have so many subjective opinions, even about scientific matters (witness, for instance, the response of many people to deniers of climate science). It's hard, however, to take this uncritical skepticism seriously in the face of the truly impressive achievements of science over the past few centuries. Looking at these achievements, is seems we have pretty powerful evidence for our ability to figure things out and attain knowledge and understanding. So, the suggestion I want to make at the outset of this chapter is that the way to address the skeptical problems raised by Hume might be to examine more closely the methods by which we seem to attain knowledge and begin to sort out how they work in practice. In this chapter we will trace a few developments over the course of the 20th century with an eye to better understanding how the philosophy of science has developed into what it is today. We will start with Logical Positivism, a broad empiricist movement of the early 20th century.

Logical Positivism can be understood as Empiricism, heavily influenced by Hume, and supercharged with powerful new developments in symbolic logic. The system of logic that we now teach in college level symbolic logic courses was developed just over a century ago in the work of Gotlob Frege, Bertrand Russell, and Albert North Whitehead for the purpose of better understanding the foundations of mathematics. In *Principia Mathematica*, Russell and Whitehead made a strong case for analyzing all of mathematics in terms of logic (together with set theory). According to the argument of *Principia Mathematica,* mathematical truths are not truths justified independent of experience by the light of reason alone. Rather they are derivable from logic and set theory alone. Merely logical truths are trivial in the sense that they tell us nothing about the nature of the world. Any sentence of the form 'Either P or not P', for instance, is a basic logical truth. But, like all merely logical truths, sentences having this form assert nothing about how the world is. Logic doesn't constitute knowledge of the world, it is merely a tool for organizing knowledge and maintaining consistency.

Mathematics had long served as the rationalist's paradigm case of knowledge justified through reason alone. So we can make a powerful case for Empiricism by showing that math is really just an extension of logic. It remains debatable whether Frege, Russell, and Whitehead succeeded in showing this, but their attempt, and especially the powerful new system of logic they developed in making this attempt, constituted a powerful blow against Rationalism and inspired a group of empirically minded philosophers and scientists in Vienna to employ the same logical tools in analyzing and clarifying philosophical issues in science. As we will see, their ambitions were even grander since they also argued that much of what was going on in philosophy at the time was literally meaningless.

We will consider three central projects taken on by the Positivists in developing their Empiricist view of scientific knowledge. These are the demarcation problem, the problem of distinguishing science from non-science, developing a view about what a scientific theory is, and giving an account of scientific explanation. The Positivists utilize the resources of symbolic logic in each of these projects.

Among the main tasks the Positivists set for themselves was that of distinguishing legitimate science from other rather suspect fields and methods of human inquiry. Specifically, they wanted to distinguish science from religion, metaphysics, and pseudo-science like astrology.

19th century German metaphysics involved attempts to reason about such obscure notions as "the absolute," or the nature of "the nothing." Such metaphysics needed to be distinguished from genuine science. We had also seen appeal to obscure empirically suspicious entities and forces in Aristotelian science such as the "vital force" to explain life, or the "dormative virtue" a mysterious power of substances like opium to cause sleep. Such mysterious forces needed to be eliminated from genuine scientific discourse.

While metaphysics and talk of obscure forces in science were to be distinguished from genuine science, the Positivists needed to preserve a role for unobservable theoretical entities like atoms and electrons. The rejection of metaphysics and obscure forces must not undermine the legitimate role for theoretical entities.

The Positivists employed Empiricism in their proposed solution to the demarcation problem. Empiricism, as we know, is just the view that our sense experience is the ultimate source of justification

for all of our factual knowledge of the world. The Positivists extend Empiricism to cover not just the justification of knowledge, but the meaningfulness of language as well. That is, they take the source of all meaning to ultimately be our sense experience. Only meaningful statements can be true or false. So, only statements whose meaning can ultimately be given in observational terms can be true or false. Theoretical terms like "atom" refer to things we can't directly observe. But talk about such theoretical entities could be made empirically respectable by means of observational tests for when theoretical terms are being appropriately applied. Electrical charge, for instance, is not itself observable. But we can define theoretical terms in terms of observational tests for determining whether the term applies. So we might say that a thing is in a state of electrical charge if it registers voltage when electrodes are attached and hooked up to a voltage meter. Similarly, though you don't directly observe the state of charge of a battery, you can easily carry out a test in observational terms by putting the battery in a flashlight and seeing if it lights up.

This doctrine about meaning was called the Verificationist Theory of Meaning (VTM). The Verificationist Theory of Meaning has it that a sentence counts as meaningful only if we can specify the observable conditions under which it would count as true or false. This view can then be used to distinguish empirically respectable language from nonsense. Legitimate scientific discourse must count as meaningful on the Verifiability Theory of Meaning. So we have a view on which science is distinguished as meaningful while pseudo-science, religion, poetry etc. are, strictly speaking, meaningless. Likewise, most of philosophy turns out to be meaningless as well. Not only will obscure 19th century German metaphysics turn out to be meaningless, but talk of free will, immaterial substances, and all of ethics will likewise turn out to be meaningless. The only legitimate role left for philosophers, according to the Logical Postivitists, will be the logical analysis of scientific discourse. Being meaningless, religion, pseudo science, most of philosophy, literature etc. is neither true nor false. While these things cannot be true or false, according to Positivists' criteria for meaningfulness, they may provide helpful expressions of human emotions, attitudes towards life, etc. That is, poetry, literature, religion, and most philosophy will be merely so much comforting or disturbing babble, mere coos, squeals, or screams.

Significant progress is made by paying close attention to the meaningfulness of scientific discourse. But the Verificationist Theory of Meaning eventually falls apart for a number of reasons including that it turns out not to be meaningful according to its own criteria. Amusingly, we can't provide an empirical test of truth or falsity for the claim that a claim is meaningful only if we can provide an empirical test for its truth or falsity. That is, according to the Verificationist Theory of Meaning, the term "meaning" turns out to be meaningless. Logical Positivism remained a powerful influence in philosophy through much of the 20th century and it did serve to weed out some pretty incomprehensible metaphysics. But I can now happily report that other important areas of philosophy, notably ethics and metaphysics, have recovered from the Positivists' assault on philosophy from within.

Understanding the Logical Positivist view of theories requires that we say a few things about formal languages. The symbolic logic developed in Russell and Whitehead's *Principia Mathematica* is a formal language. Computer languages are also formal languages. A formal language is a precisely specified artificial language. A formal language is specified by doing three things:

- identify the languages vocabulary.
- identify what counts as a well formed expression of that language.
- give axioms or rules of inference that allow you to transforming certain kinds of well formed expressions into other kinds of well formed expressions.

Scientific theories are formal languages according to the Positivists. We can understand what this means be considering the component parts of a scientific theory and how these map on to the elements of formal languages just given. A theory consists of the formal language of first order predicate logic with quantifiers (the logic developed first by Frege and then in greater detail by Russell and Whitehead) supplemented with observational vocabulary, correspondence rules that define theoretical terms in terms of observational vocabulary, and statements of laws like Galileo's laws of motion, Newton's law of universal gravitation etc. All of the non-logical vocabulary of a scientific theory is definable in observational terms. Well formed expressions in scientific discourse will be only those expressible in terms of formal logic plus the vocabulary of science. The rules of inference in scientific discourse consist only of the rules of inference of logic and math plus scientific laws.

The Logical Postivist's view of what a theory is has since been deemed overly formalized. There are numerous legitimate theories in science that can't be rendered in a formal system. Consider theories in anthropology or geology for instance. Nevertheless, the idea of a theory as a formal system is a powerful one and it remains the gold standard in many sciences. Linguistics has "gone computational" in recent years, for instance. The most ambitious scientific undertaking in all of human history, the science of climate change, also aims to render theory and explanation in formal systems through massive and intricately detailed computer models of climate change. In fact, roughly speaking, we can consider a theory formalizable when it can be comprehensively modeled on a computer. Computer programs are paradigm examples of formal systems.

A further more general lesson we might take from the Positivist's view of theories addresses a very commonplace misunderstanding of what a theory is. People commonly think of theories as just claims that lie on a scale of certainty being somewhat more certain than guesses or hypotheses, but rather less certain than established matters of fact. This is really a terrible misunderstanding of what a theory is. It is commonly invoked in fallacious attempts to discredit science, as when people dismiss evolution or climate change science as "just a theory." Such comments reveal a basic misunderstanding of what theory is. For something to count as a theory has nothing to do with our level of certainty in its truth. Many scientific theories are among the best established scientific knowledge we have. A few years ago, for instance, some scientist claimed to have observed a particle in a particle accelerator travelling faster than the speed of light. It made the news and caused a bit of excitement. But those in the know, those who understand Einstein's special relativity and the full weight of the evidence in support of it patiently waited for the inevitable revelation that some clocks had been mis-calibrated. Einstien's special relativity is right and we know this with about as much certainty as we can know anything. In the other direction, there are lots of genuine theories that we know full well to be false. Aristotle's physics would be one example. Having very much or very little confidence in something has nothing to do with whether it is properly called a theory.

So if it's not about our degree of confidence, what does make something a theory? What makes something a theory is that it provides a general framework for explaining things. The Positivists didn't discover this, but their idea of a theory as a formal system illustrates the idea nicely. Theories generally consist of a number of logically interconnected principles that can be mutually employed to explain and predict a range of observable phenomenon. Bear this in mind as we consider the Positivist's view of scientific explanation.

According to the Deductive Nomological model of explanation developed by the Logical Positivist, Carl Hempel, a scientific explanation has the form of a deductively valid argument. The difference between an argument and an explanation is just their respective purposes. Formally, arguments and explanations look alike. But the purpose of an explanation is to shed light on something we accept as true, while the purpose of an argument is to give us a reason for thinking something is true. Given this difference in purpose, we call the claim that occupies the place of the conclusion the explanandum (it's the fact to be explained), and the claims that occupy the place of the premises the explanans (these are the claims that, taken together, provide the explanation). In a scientific explanation, the explanans will consist of laws and factual claims. The factual claims in conjunction with the laws will deductively entail the explanandum. For example, consider this explanation for why a rock falls to the earth:

1. $F = GM1M2/r2$, Newton's law of universal gravitation which tells us that massive bodies experience a force of mutual attraction that is proportionate to their mass and inversely proportionate to the distance between them.
2. F=MA. This is the force law, which tells us that force equals mass times acceleration.
3. The rock has mass of 1 Kg.
4. The earth has a mass of 5.97219×1024 kilograms.
5. The rock was released within the gravitational field of the earth.
6. No forces prevented the rock from falling to the earth.
7. The rock fell to the earth.

Recall that deductive logic is part of every theory, every explanatory framework. The first two claims in this explanation are statements of law from Newtonian physics. The remaining four are statements

of fact. Taken together, these six claims deductively entail the explanadum, that the rock fell to the earth. This should illustrate how theories function as explanatory frameworks.

One very useful thing Hempel's account of explanation does is alert us to the argument-like structure of developed explanations. The basic idea here is that a complete explanation should include all of the facts involved in making the fact to be explained true. These will include both particular facts relevant to the specific fact we want explained and general principles (scientific laws in the case of scientific explanations) that belong to a broader framework for explanation. A fully developed explanation reveals a logical relationship between the fact we want to explain, other relevant facts and connecting principles like laws of nature.

Hempel's account of explanation faced a number of problems that have helped to refine our understanding of scientific explanation. We won't address them here except to mention one because it's amusing. Consider this explanation:

1. Men who take birth control pills do not get pregnant.
2. Bruce is a man and he takes birth control pills.
3. Bruce is not pregnant.

This seems to meet all of the positivist's criteria for being an explanation. But aside from being silly, it's at least not a very good explanation for why Bruce is not pregnant. Problem cases like this suggest that purely formal accounts of explanation like Hempel's will fall short in sorting which facts are relevant in an explanation.

There is also a more general lesson I'd like you to take from the positivist's account of explanation. For your entire career as a student you've been asked to explain things, but odds are nobody has ever really explained what it means to explain something. Personally, I don't think I had ever given a thought to what an explanation was until I encountered the Deductive Nomological account in a Philosophy of Science class. But now you've been introduced to a model of explanation. You may not find it fully applicable to every academic situation you encounter. But if you try to make use of it by thinking of explanations as having a developed argument like structure, you might find grades in many of your classes improving significantly.

We mentioned at the outset that Logical Positivism was very much influenced by Hume's Empiricism. You will recall that Hume argued for some surprising skeptical results. The Logical Positivists adopted one of two strategies for dealing with this. On some issues it was argued that Hume's skeptical conclusions were acceptable, while on others Hume's skepticism was regarded as a problem yet to be solved. As an example of the first strategy, Bertrand Russell, though not a Logical Positivist himself, wrote an influential paper in which he argued that science can proceed as usual without any reference to the notion of causation. Skepticism about necessary causal connections was deemed not to be problematic. Skepticism about induction was more difficult to accept. So the early 20th century saw a variety of sometimes colorful but generally unsuccessful attempts to resolve the problem of induction. And this brings us to Karl Popper.

Karl Popper was a philosopher in Vienna during the reign of Logical Positivism, but he was not himself a Positivist. Popper is best known for his contributions to the problem of induction and the demarcation problem. In both cases his views were critical of the Logical Positivists. As you will recall, Hume argues that inductive arguments fail to provide rational support for their conclusions. His reason for taking induction to be irrational is that every inductive argument assumes that unobserved events will follow the pattern of observed events and this assumption cannot be supported either deductively or inductively. No purely deductive support can be given for this principle of induction because it is not a mere truth of logic. And any inductive argument offered in support of the inductive principle that unobserved cases will be like observed cases will be circular because it will also employ the very principle of induction it tries to support as a premise.

Popper accepted Hume's conclusion that inductive inference is not rationally justifiable. He takes the problem of induction to have no adequate solution. But he rejects the further conclusion that science therefore yields no knowledge of the nature of the world. With Hume, Popper holds that no number of cases offered as confirmation of a scientific hypothesis yields knowledge of the truth of that hypothesis. But just one observation that disagrees with a hypothesis can refute that hypothesis. So while empirical inquiry

cannot provide knowledge of the truth of hypotheses through induction, it can provide knowledge of the falsity of hypotheses through deduction.

In place of induction, Popper offers the method of conjecture and refutation. Scientific hypotheses are offered as bold conjectures (guesses) about the nature of the world. In testing these conjectures through empirical experiment, we cannot give positive inductive reasons for thinking that they are true. But we can give reasons for thinking they are false. To see how this works, let's look at the pattern of reasoning employed in testing a scientific hypothesis using induction on the one hand, and Popper's deductive method of conjecture and refutation on the other. First, in designing an experiment, we determine what we should expect to observe if the hypothesis is true. Using induction, if our observation agrees with our expectation, we take the hypothesis to be inductively confirmed. The pattern of reasoning looks like this:

1. If H, then O
2. O
3. Therefore, H

This pattern of reasoning is not deductively valid (generate a counterexample to see for yourself), and as an inductive argument it faces the problem of induction. So this pattern of reasoning fails to provide us with rational grounds for accepting H as true. But suppose that when we carry out our experiment, we observe "not O." In this case our pattern of reasoning looks like this:

1. If H, then O
2. not O
3. Therefore, not H

This pattern of reasoning is deductively valid. To see this try to suppose that the premises are true and the conclusion is false. If the conclusion were false, then 'H' would be true. And, given this and the truth of the first premise, 'O' would follow. But 'O' contradicts 'not O" which is asserted by the second premise. So it is not possible for the premises to be true and the conclusion false. In other words, the pattern of reasoning here is deductively valid.

The latter is the pattern of reasoning used in the method of conjecture and refutation. It is a deductively valid pattern that makes no use of inductive confirmation. It should now be clear how Popper's method of conjecture and refutation works and how empirical inquiry making use of this method can provide us with knowledge of the world (or rather, how the world isn't) while avoiding the problem of induction.

According to Popper, there is no rational methodology or logic for evaluating how scientists come up with hypotheses. They are just conjectures and no amount of evidence is capable of inductively confirming hypotheses in the sense of giving us positive reason for thinking our hypotheses are true. Evidence in agreement with a hypothesis never provides it with inductive confirmation. If all the evidence is in agreement with a hypothesis, we can say that it is "corroborated." To say that a hypothesis is corroborated is just to say that it has survived our best attempts at refutation. But contrary evidence can decisively refute hypotheses.

The demarcation problem is the problem of distinguishing science from other things, from poetry to religion to obscure metaphysics. Popper offers an alternative to the Positivist's verificationist theory of meaning in addressing this problem. The Positivist's solution to the demarcation problem had the downside of denying that we can assert as true that it is wrong to torture innocent babies just for fun. Popper's view of the matter avoids this unsavory consequence.

Popper's method of conjecture and refutation suggests his criterion for distinguishing science from non-science. For it to be possible to refute a hypothesis requires that there be possible observations that would give us grounds for rejecting the hypothesis. We can only scientifically investigate hypotheses that take observational risks, those that are exposed to the possibility of being shown false through observation. That is, we can take a hypothesis to be scientific if and only if it is falsifiable. For a hypothesis to be falsifiable we must be able to specify possible observational conditions that would be grounds for rejecting the hypothesis as false. But this does not mean that that it will be proven false or that it can be shown to be false (either of these confusions would lead to the absurd view that a claim is only scientific if it is false). Let's look at some examples to make this clear.

Consider the hypothesis that all crows are black. We can specify observable conditions under which we would count this as false. Namely, seeing a white crow, or a green one. Being able to specify the observational conditions under which we would reject this hypothesis doesn't mean that it false. Suppose the hypothesis is true. It is still a claim that takes risks in the face of observation because we know that some possible observations would refute it. So the hypothesis that all crows are black is falsifiable.

Now consider claims made by astrology. These are typically formulated in such a vague way that any eventuality could be interpreted as affirming the astrologer's predictions. If there are no possible observations that could refute astrology, then it is not scientific. Some astrologers might make specific and concrete predictions. These might get to claim that they are being scientific on Popper's view, but to the degree that astrologers do take risks of being refuted by observation, they have been refuted too often.

Political ideologies often fail to pass the falsifiability test. Popper was especially critical of Marxism which was very popular with the Viennese intellectuals he knew in his youth. Marxists seemed to have an explanation for everything. The inevitability of Marxist revolution was illustrated by its rising popularity in much of Europe. But if Americans, for instance, were not rebelling against their capitalist oppressors it was only because they had yet to see how alienating capitalism is. The conditions for revolution just weren't yet ripe. But they will be, says the confident Marxist. Popper's key insight was that a theory that can explain everything that might happen doesn't really explain anything. It is empty.

Today, Popper might make the same criticism of very different political ideologies. If free markets don't fix every problem, the libertarian can always complain that this is only because they have not been allowed to function freely enough. If government doesn't fix every problem, the big government liberal can always complain that big government hasn't been empowered enough (when we get around to political philosophy we will find reason to doubt that there are very many liberals that really fit this stereotype). Extreme views are only made plausible to their fans by elaborate schemes of excuses for why they don't work out as well as they should. Popper would say that in politics as in science, we need to try things where we can honestly examine the consequences and hold ourselves accountable when they don't go well by trying something else.

Here we will describe an objection to Popper's method of conjecture and refutation that will set the stage for introducing the views of Thomas Kuhn. According to Popper, we make progress in science by refuting false conjectures. We never have inductive grounds for holding that proposed scientific hypotheses and explanations are true, but we can narrow in on the truth by eliminating the falsehoods. Our hypotheses lead us to expect certain observations. If we do not observe what we expect to observe, then we have non-inductive grounds for rejecting our hypothesis. Again, the pattern of reasoning followed in eliminating false hypotheses through scientific inquiry looks like this:

1. If H, then O
2. Not O
3. Therefore, not H

This is the deductively valid pattern of reasoning known as *modus tollens*. However, we rarely get to test hypotheses in isolation. Typically, our expectation of a given observation is based on the hypothesis we are interested in testing in conjunction with any number of background assumptions. These background assumptions are the auxiliary hypotheses. If we take into account the auxiliary hypotheses, the pattern of reasoning used in Popper's method of conjecture and refutation looks like this:

1. If H and AH, then O
2. Not O
3. Therefore, not H

But this argument pattern is not valid. The observation (not O) might indicate the falsity of one of the auxiliary hypotheses (AH) rather than the falsity of (H), the hypothesis we set out to test. What this tells us is that the implications of other than expected observations are always ambiguous. When our observations don't accord with our expectations it tells us that at least one of the assumptions or hypotheses that lead us to expect a given observation is false. It may be the hypothesis we set out to test, or it may be one of our auxiliary hypotheses. But unexpected observations don't tell us which is false.

Here's a nice example of auxiliary hypotheses at work in everyday reasoning. Our hypothesis is that Hare is faster than Tortoise. This hypothesis leads us to expect that Hare will win a race against Tortoise.

But suppose that, contrary to our expectation, we observe Tortoise winning the race. The hypothesis that Hare is faster than Tortoise is not thereby falsified because of the presence of a number of auxiliary hypotheses. Among these auxiliary hypotheses are the following: (i) Hare did not stop in the middle of the race for a snack, (ii) Hare did not get run over while crossing the road, (iii) Hare did not get eaten by Coyote during the race, (iv) Hare did not get entangled in a philosophical discussion about the rationality of scientific methods with his friend Gopher before crossing the finish line. When Tortoise crosses the finish line first, that tells us that either Tortoise is faster than Hare or one of these or many other auxiliary hypotheses is false. But Tortoise winning doesn't tell us which. The unexpected observation thus fails to cleanly refute our hypothesis.

The Positivists and Karl Popper offer attempts to describe and develop rational methods for scientific inquiry. In so doing, they offer *normative* theories of scientific practice. That is, they offer views about how scientific inquiry should proceed and what counts as good scientific practice. Kuhn's philosophy of science is inspired by the history of science and seeks to describe how science actually develops. Kuhn's undertaking is not aimed at revealing universal norms of rational scientific practice. But his views have been taken by some to imply that the development of science is not guided by general norms of rationality, at least at crucial revolutionary periods of theory change.

Kuhn describes three stages in the development of a science. The first stage is called "preparadigm science." In pre-paradigm science, people seeking to understand an observed phenomenon share no common stock of background theory. Each inquirer essentially starts from scratch. Under these circumstances, very little progress is made. We have nothing resembling a tradition that can be passed from one person on to her students for further development and investigation. The various theories of the nature of the world proposed by pre-Socratic philosophers might be considered an example of pre-paradigm physics.

At some point, someone develops an account of the observed phenomenon that has enough substance and explanatory power to attract the attention of a community of individuals who will then carry on inquiry along the proposed lines. This marks the beginnings of normal science. Kuhn calls the sort of account of the observed phenomenon that is required for this to happen a paradigm.

A paradigm consists of the following four things:

1. A body of theory including laws: For instance, the basic laws of motion.

2. Background metaphysical assumptions: For instance, that there is an external world and that our senses provide a reasonably reliable guide to its nature, that we share common objects of perception, etc.

3. Values: Here we have in mind primarily epistemological values including norms of rationality. The idea here is that a paradigm tells you what counts as a phenomenon that requires explanation and provides a standard for what counts as an adequate explanation of that phenomenon.

4. Exemplars: These are textbook applications of the theory to the phenomenon it is intended to explain. Classical physics is taught through exemplars that include applying Newton's laws to swinging pendulums and forces exerted on springs.

Normal science, the second of Kuhn's three stages, is carried out within a paradigm. Working within a paradigm, the scientist normally accepts the core elements of the paradigm as dogma. The scientist's job in the stage of normal science is to work out the details of the paradigm without calling into question the central laws of the paradigm, or the epistemic standards it presupposes. In the normal stage, we can think of science as puzzle solving. Investigators are not advancing bold new theories, but applying the accepted theoretical framework in new and novel sorts of cases. During normal science, a paradigm gets worked out in detail.

In the course of normal science, problems that resist resolution with the paradigm often arise. If these "recalcitrant" problems remain long enough, they become what Kuhn calls *anomalies*. As the details of a paradigm get worked out, the anomalies become harder and harder to ignore. Researchers in need of projects may focus more and more scrutiny on the remaining anomalies. Continued and intensified but unsuccessful attempts to resolve anomalies can give rise to a crisis in normal science. Such a crisis makes it possible to call into question core elements of the paradigm that had been previously held dogmatically.

Persistent anomalies in a science can provoke a crisis in which the paradigm itself is called into question. In this atmosphere, it is possible for scientists to propose and win wide acceptance for significant

changes in the theoretical framework. Until persistent anomalies provide a crisis, however, the social conditions aren't ripe for revolution. Even if someone had great revolutionary ideas, they simply won't get a hearing with the community since it is committed to working out the details of the standing paradigm. Revolutions in thinking can't happen until the community is convinced that the old paradigm is irrevocably broken. When this does happen and an appropriate alternative to the old paradigm is developed and proposed, then and only then can what Kuhn calls a scientific revolution happen. In a scientific revolution, the scientific community abandons one paradigm in favor of another.

Once a new paradigm takes hold in the scientific community, normal science is resumed, the details of the new paradigm begin to get worked out and normal science continues until a new batch of anomalies emerges and provokes the next crisis.

A key insight of Kuhn's is that science is a community effort. We often hold a "great genius" vision of the history of science where the fabulous insights of very special individuals are what drive science forward. Kuhn would say this is a distorted picture. The great geniuses like Newton or Einstein can only launch a revolution in scientific thinking when a broader community of inquirers have prepared the field and created the conditions for the germination of the seeds of a revolution in thinking. The history of science needs to be understood in terms how these broader communities progress to the point where revolutionary thinking is called for and can be fruitful. The great insights and discoveries never happen in a social vacuum.

Kuhn thinks that the paradigm shift that occurs in the course of a scientific revolution is comparable to a gestalt switch as in the duck/rabbit image below.

Seeing this image as a duck blocks out seeing it as a rabbit. Something similar happens in the case of a paradigm shift. In a paradigm shift one drops one conceptual framework in favor of another. When we grasp and evaluate the claims made in normal science, we do so in the context of acceptance of a paradigm. Kuhn suggests that the very meaning of the claims made in paradigm-based normal science can only be comprehended relative to the conceptual framework of that paradigm. A result of this is that from the perspective on one paradigm, we are never really in a position to evaluate the claims of normal science under a different paradigm. In this sense, paradigms are said to be incommensurable (lacking any common measure or independent standard of comparison).

It is tempting to see the cycle of normal science and revolutionary science as a Popper style process of conjecture and refutation at the level of paradigms. However, Kuhn maintains that paradigms are never exactly refuted by intractable anomalies. Rather, when the scientific community enters a period of crisis and an attractive alternative to the old paradigm emerges, the community gives up on the old paradigm and adopts the new one. Paradigms are not so much refuted as abandoned. This raises serious questions about whether paradigm shifts in scientific revolutions can be understood as rational processes. They would seem not to be if we think of human rational processes as in some way rule driven like logical rules of inference. But we might instead take Kuhn be revealing a richer view of human rationality.

On Kuhn's view, the methods and standards of science get articulated and refined through periods of normal science and are liable to undergo bigger shifts in periods of scientific revolution. What counts as good scientific inquiry and investigation cannot be specified independent of its history. We figure out what works as we encounter new challenges. The history of science reveals the practice of science to be dynamic and adaptive. Creativity and resourcefulness go into the hard-earned advances in our understanding of the world.

The broader moral of this story is that we should be highly suspicious of any attempt to boil the methods of science down to any specific series of steps. Rather, a good understanding of the many methods of science can only be had through a study of its history, its successes, and its failures. And even at this, our appreciation of the methods of science must remain open ended. The story of science is far from finished, and so our understanding of its methods is likewise incomplete.

Some of the main questions for the philosophy of mind are metaphysical questions about the nature of minds and mental states. "What is the mind?" quickly proves to be too big a question. We might say that for a being to have a mind is just for it to have mental states like beliefs, desires, perceptions, memories, emotions, and so forth. And this leads us towards somewhat more tractable questions like "What is a belief (desire, memory, perception. . .)?" The philosophy of mind has seen tremendous progress since Descartes proposed his dualist view of mind and body. Contemporary philosophical analyses of mental states and

processes are among the key components of a rapidly emerging new science of mind. Philosophers of mind, along with cognitive psychologists, information scientists, and neuro-scientists have begun to work out detailed explanations of how our physical brains realize and carry out the functions of many mental states. In this chapter we will cover some of the progress philosophy of mind has contributed over the past century. As we will see by the end, some hard philosophical questions about the nature of mind persist.

As with many topics, modern philosophy of mind begins with Descartes and soon moves on. Following Hume in the 18th century, the philosophy of science takes a sharp empirical turn in the latter 19th and early 20th century. During this time, what is scientifically knowable is taken to be limited to what can be defined in observable terms. This puts the mind and psychological phenomena generally on epistemically shaky ground. Mental states like beliefs, desires, perceptions, and anxieties are not the sorts of things we can examine under a microscope. If all things knowable are supposed to be knowable through sense experience, then it begins to appear that minds and mental states are not knowable.

The philosophical behaviorism of Gilbert Ryle is an attempt to salvage talk of minds and mental states and make such talk empirically acceptable. Mental terms like belief or fear can often be associated with observable behavior. Anger and fear, for instance, often seem to be observable. Suppose we identified the mental state of being angry with displaying angry behavior. On this proposal, anger just is stomping around, cursing a lot or generally throwing a fit. The obvious problem here is that some people can be angry without displaying it and some people, good actors for instance, can engage in convincingly angry behavior even though they aren't really angry. Or to take another example, my desire for chocolate ice cream might be observable in my rummaging around in the freezer, or it might not be observable at all because the usual behaviors are checked by my (also unobservable) desire to shed a few pounds. So mental states like anger or many beliefs and desires sometimes show in terms of behaviors, but perhaps only under the rights sorts of conditions. To make mental states empirically respectable and yet avoid the obvious problems we've seen in identifying mental states with observable behaviors, Ryle proposed to analyze mental states as **dispositions** to behave.

We are disposed in one way or another when we would behave a certain way given certain conditions. The behavior is not the disposition itself, but a **manifestation** of the disposition. The **disposition** can be identified in terms of a certain kind of "if. . .then. . ." statement. To help get clear on the idea, consider simpler physical dispositions like solubility or flexibility. To say that a spring is flexible is not to say that it is currently flexed. It is rather to say that if you were to stress it in the right way, then it would absorb the force placed on it and bend. To say that sugar is soluble is not to say that it is dissolved. But it is to say that if you were to submerge it in water (under the right conditions), then it would go into solution. So dispositions are described in terms of stimulating conditions and responses or manifestations. Ryle's idea is that talk of mental states, like beliefs, desires, perceptions, or emotions can be fully explained as talk of very complex dispositions where the stimulating conditions and the manifestations are observable conditions and behaviors. So, my desire for chocolate ice cream might be understood as a complex disposition to exhibit behaviors like rummaging around in the freezer if I think I'll find chocolate ice cream there, and I'm not too worried about my weight, and . . . . If this project works out, then we can understand talk of mental states in terms of empirically respectable stimulus-response dispositions.

The project of defining talk of mental states in terms of observable environmental stimuli and behavioral responses faces a number of difficult challenges though. We normally understand simple physical dispositions as being grounded in some further physical basis. Sugar is soluble in water because of its molecular structure, for instance. So we associate the disposition of solubility with a physical state of the sugar. In his eagerness to avoid positing unobservable mental states, Ryle wanted us to understand talk of dispositions merely as defining mental terms in terms of empirically respectable stimulus response "if. . then. . ." claims. He wanted to avoid positing any unobservable states of the brain, for instance, as the basis of mental dispositions. So Ryle's talk of dispositions is limited to mere "if . . then . . ." without any appeal to underlying states of minds.

A second problem is that while we might be able to formulate plausible stimulus response conditionals for some mental state terms like fear or anger, in many cases the subtle links between stimulus and response that we might associate with a belief or a desire are simply too complex to allow for an analysis

of the mental state talk in terms of observably defined disposition talk. What "if . . then . . ." claim, for instance, analyzes talk of my belief that my brother lives in Arizona?

A distinct problem, one that will continue to dog subsequent theories in the philosophy of mind, is the problem of conscious experience. However Ryle's project worked out, we could imagine some kind of mindless robot that satisfies all of the relevant stimulus-response dispositions we associate with beliefs, desires, and emotions. And yet, by hypothesis, the mindless robot lacks any subjective conscious experience. When we think of our own case at least, our subjective conscious experience seems to be quite central to having a mind. This is an issue we will return to after a brief look at a few other 20th century approaches to understanding the mind. Here is a link to the opening chapter of Gilbert Ryle's classic ***The Concept of Mind*** features a quite devastating critique of Cartesian Dualism that sets the stage for his own behaviorist approach.

Ryle's behaviorism attempts to make talk of mental states empirically respectable by defining mental terms in terms of observable conditions and behaviors. One concern raised about this approach was that mental state terms are to be understood entirely in terms of observable things going on outside the person. This seems to take the mind out of the person. There is no place in behaviorism for any account of our inner lives or even the notion that my beliefs and desires are in some sense in me or part of me. The Brain State Identity Theory, most ably advanced by J. J. C. Smart, goes some ways towards remedying this apparent defect (though Ryle would not have counted it as a defect). The Brain State Identity Theory proposes that mental states are identical with brain states. Contrary to Descartes' dualism, the Identity Theory takes mind to be a physical thing. Namely, it takes the mind to be identical with the brain. For this reason, we count the Identity Theory as a **physicalist** view of the mind.

According to the Identity theory, the belief that Obama was president of the USA in 2002 just is a certain neuro-chemical state of the brain. Note that a great many people share this belief. When we speak of the belief as a view about what is true, one that might be shared by many people, we are speaking of a belief type. My belief that Obama was the American president in 2002 is just one token of that shared belief type. This distinction between types and tokens is important to understanding what the identity theory says. The Identity Theory originally proposed that mental state types are identical with brain state types. So for you to have the mental property of believing that Obama was president of the USA in 2002 is just for your brain to have a certain specific neuro-chemical property. The identity theory holds that for anyone to have the belief that Obama was president in 2002 is just for them to have that same specific neuro-chemical property. A popular and plausible example of such mental state/brain state type identity was that pain just is C-fibers, a certain kind of neuron, firing.

We have scientific evidence that very roughly points in the direction for something like the Identity Theory. Cases of localized brain injuries indicate that different parts of the brain carry out different functions. People who suffer lesions in specific areas of the brain tend to find specific mental functions impaired while other functions are left perfectly intact. It is through analyzing such cases that we began to map areas of the brain according to the functions they perform.

In the Identity Theory we witness a significant point of intersection between the philosophy of mind and the science of mind. Philosophical speculation has given rise to a great many scientific hypotheses. Here we have an example of how this can happen. We have a theory about the metaphysical nature of mental states that turns out to be empirically testable. The Identity Theory says that mental state types are identical with brain state types. Types are properties, so this view tells us that all of your mental properties are physical properties of your brain. We have learned a great deal about how brains store and process information since this hypothesis was popular. The science of mind is not yet mature, but well past its infancy and the broad outlines of how brains work are more or less in place. What the science tells us is that different brains store and process the same information in very different ways. That is, the Identity Theory is wrong. My belief that Obama was president in 2002 involves many properties of my brain. But your belief that Obama was president in 2002 involves your brain having different properties.

Belief is the spring of action. We explain people's actions in terms of their mental states. People do what they do because of what they believe, desire, fear, hope for, and so forth. The behaviorists were on to something in thinking about mental states in terms of dispositions. But recall that the behaviorists were looking for a way to analyze talk about mental states entirely in terms of observable things like behavior.

They wanted to avoid positing unobservable things going on in the head. Talk of dispositions for the behaviorists was not talk of underlying and possibly unobservable brain states that give rise to behavior. Rather it was merely talk of tendencies that might allow us to understand mental state terms as synonymous with complex "if. . . then. . ." conditional statements. The behaviorists sought a way to avoid understand mental terms as referring to unobservable things going on in the head. To many, taking the mental out of the head seemed a problematic feature of behaviorism. But this is just what behaviorists set out to do, understand talk of the mental in public, observable terms.

The functionalists would understand talk of mental dispositions differently. To have a mental disposition is not, by definition, just to satisfy a certain "if . . ., then. . ." claim. Rather, to be in a mental state is to be in some underlying state, perhaps unobservable, that fulfills a certain functional role. The molecular structure that makes the spring flexible might not be observable to us. But for the spring to be flexible, for it to have this disposition, is for it to be in some underlying state that makes the spring such that if we exert a force on it, it will bend and absorb that energy. We can call that underlying state that accounts for something having a disposition the **causal basis of the disposition**. With this idea in hand, we can mark a difference in how a behaviorist and a functionalist would understand the idea of a disposition. For the behaviorist, talking of mental states as dispositions does not involve the attribution of any causal basis, it only gives us a way of translating talk of the mental into talk of observable behavior by means of complicated "if …, then …" statements. For functionalism, on the other hand, talking of mental states as dispositions does involve attributing underlying causal base properties. To be in a mental state is to have some underlying causal basis for behaving in this way if these conditions are met, or behaving in that way if those conditions are met, etc.

Given this differing treatment of talk of mental dispositions, the functionalist avoids a problem we raised for behaviorism. We seem to understand what it means to believe that Obama was president in 2002. But if this mental state attribution is really just a shorthand way of expressing a complex behavioral disposition, then we ought to be able to fill in the associated "if … then …" claim. But we can't. So talk of mental states can't simply be regarded as synonymous with talk of behavioral dispositions. Unlike the behaviorist, the functionalist is not trying to define away talk of the mental in terms of talk of observable behavior. The functionalist is happy to leave the mental in the head. Talk of behavioral dispositions don't define mental terms for the functionalist, they rather provide a means for specifying what it is for an underlying brain state to realize, or be a causal basis for, a mental state type.

We were lead to functionalism by the idea that a given mental state might be realized by various different states in different brains. This suggests a physicalist interpretation of functionalism, a view that insists that mental states are realized by physical states. But note that functionalism needn't be restricted in this way. Any state, physical or otherwise, can realize a mental state so long as it fulfills the appropriate role. Being guided by spirits in the appropriate way might, in principle, be the causal basis for having a certain mental disposition. So, strictly speaking, unlike the brain state identity theory, functionalism is not committed to physicalism, the view that the mental is ultimately physical. One could be a functionalist about mental states and a Cartesian dualist.

While one could, in principle, be a functionalist and a Cartesian dualist, the intractable problem of mind/body interaction has lead scientists of the mind to reject Descartes' substance dualism. The difficulty of understanding consciousness, however, has led some leading contemporary thinkers, notably David Chalmers, to another kind of dualism: property dualism. On this view, though the world consists of just one kind of stuff, matter, that stuff has fundamentally different kinds of properties including those we can regard as purely physical, like mass, charge and so forth, and other kinds of properties, like consciousness, that are irreducibly mental. Let's start by thinking about how consciousness is special and especially difficult to analyze in terms of physical properties.

Functionalism gives us a promising approach for understanding some kinds of mental states in terms of physical states fulfilling functional roles describable in terms of complex dispositions. According to functionalism, for me to believe that my cat is sleeping on the sofa only requires that my brain be in some state that plays an appropriate function role. I can't specify the functional role completely, but it might include walking softly when I go to refill my tea, not playing loud music on the stereo, saying "no" if my wife asks me if the cat is outside, etc. The state of my brain that fulfills this mental functional role might

be one that can be entirely specified in physical terms. It is just the state of having certain connections between networks of neurons activated in certain ways. With enough neurophysiology, we could completely describe this brain state in terms of physical chemical and electrical properties. A great many kinds of mental phenomena might yield completely to such functional explanation in purely physical terms. Scientists of the mind have already made tremendous progress at understanding memory, shape recognition, belief, and desire in terms of functional roles that could have purely physical bases. But then there is our subjective conscious experience, what it is like for me to perceive something, for instance, or how I experience desiring something, believing something, remembering something.

Consciousness does not yield to functional analysis in the same way. An interesting kind of thought experiment suggests that consciousness can't be understood in purely functional terms or in terms of physical properties and processes at all. First we need to talk about zombies. The zombies we are familiar with from horror stories are easily recognizable. They walk in menacing dull witted ways in spite of broken legs and open wounds. They are the reanimated dead. This is not at all like philosophical zombies, the beings that populate philosophical zombie thought experiments in the philosophy of mind. The idea of a philosophical zombie is the idea of being that functions exactly like a conscious person in every observable respect. The only difference between a philosophical zombie and a normal person is that the philosophical zombie lacks conscious experience. Imagine a physical duplicate of yourself, a doppelganger that is molecule for molecule exactly like you and fully operational. It functions just like you, so it would give the same replies you would give to questions and the same responses to stimuli. It is just as subtly expressive as you in every conceivable way because it is functionally just like you. Your mother or your lover could never tell the difference. The only difference there is, is that the zombie lacks the conscious experiences that you have.

There is philosophical debate about whether such a being is metaphysically possible. There don't appear to be any logical contradictions involved, but that may not settle the issue. However, if such a zombie is possible, this possibility would demonstrate something interesting. Since your zombie doppleganger is exactly like your conscious self in every physical and functional respect down to the atomic level, yet differs from you mentally because it lacks conscious experience, the mere possibility of such a being would show that whatever consciousness is, it can't be understood in terms of functioning or the kinds of physical biochemical properties that ground your functioning (provide the causal bases for you various dispositions to behave.

Chalmers thinks philosophical zombies are possible, so consciousness can't be understood purely in terms of physical properties or the functional processes they ground. He instead proposes that we understand some properties of minds, like consciousness, as fundamentally mental properties that are not reducible, even in principle, to physical properties. While no distinct kinds of nonphysical substance is proposed, Chalmers is offering a kind of dualism we now call property dualism. Property dualism in the philosophy of mind is the view that among the primitive most fundamental properties of our world, there are both basically physical properties and basically mental properties.

TOPIC 6. ***Ethics and philosophical anthropology***

Ethics or *moral philosophy* is a branch of philosophy that involves systematizing, defending, and recommending concepts of right and wrong conduct. Ethics is concerned with what we ought to do, what it would be best to do, how we ought to live, how we ought to treat others and how we ought to organize our communities. The main ethical question is *What should we do about it?*

Ethics concerns what is good. Different things can be good in different ways. We just considered the nature of the good life. The quality of one's life is something that can be evaluated for goodness. This makes it an ethical issue. Aristotle's theory of virtue was part of our inquiry into the good life. More familiar will be ethical theories of good character or good action. The ethics of good action concerns what is permissible, obligatory, and superogatory (good above and beyond what's obligated). Religiously inspired views about morality often take right and wrong to be simply a matter of what is commanded by a divine being. Philosophy has not succeeded in coming up with absolutely certain and definitive answer in ethics. Philosophers speak of moral intuitions in reference to this sense of the goodness or badness of things. Questions about how we can know what is good or what is right are questions for moral epistemology.

Descriptive ethics intends to describe how things are, how people think or how they behave. Prescriptive ethics is concerned how we should be motivated and how we should act.

Arethology, deontology, feliology, thanatology, theory of justice. The field of ethics, along with aesthetics, concerns matters of value, and thus comprises the branch of philosophy called axiology. As a field of intellectual inquiry, moral philosophy also is related to the fields of moral psychology, descriptive ethics, and value theory.

There are different levels of ethical issues, major areas of study within ethics. The specific matters in theoretical content are issues of *applied ethics*, concerning what a person is obligated (or permitted) to do in a specific situation or a particular domain of action. These are death penalty, legalizing of drugs, tax money for the poor, homosexual relationships and so on. *Normative ethics* concerns how things ought to be, the practical means of determining a moral course of action. *Meta-ethics* studies fundamental questions about the nature of ethics, concerning the theoretical meaning and reference of moral propositions, and how their truth values (if any) can be determined. For example, whether or not there are any ethical truths and, if so, what makes them true or explains their truth.

Ethical conventionalism implies that ethical truths are made true by people, God or others authorities, moral reformer rather than objective value. It is moral reformer's, who changed world to the better state, dilemma. Conventional ethics requires no critical thinking, just total obedience. Ethical truths are like truths of etiquette or law, more or less formal social conventions. Morality is something like a really serious variety of politeness. *Moral Relativism* is one of the more popular versions of ethical conventionalism. Right and wrong are relative to people or groups for Moral Relativism. Not all of the claims are absolute without exceptions. Honesty is a virtue, but lie for saving is a virtue as well. In spite of the arbitrariness of Moral Relativism, it seems to support tolerance and respect for societies with differing moral views and has no problem with changes in moral standards. But societal Moral Relativism denies the existence of any value independent of group, often the strongest and most aggressive like a gangs and outlaw militias. Rational inquiry done well doesn't have to include unpleasant conflict, but it does hold out some hope for resolving conflicts reasonably. Any attempts to relativize morality undermine the normativity of moral beliefs altogether and so ultimately collapse into nihilism, the view that nothing matters, nothing is good. According to *Ethical Subjectivism* there are no ethical truths at all. David Hume and Logical Positivists were holding a view like this. But according to the subjectivists, *Honesty is a virtue* isn't the sort of sentence that could be true or false because there is no such property as being a virtue. There are no ethical properties at all, then being virtuous can't be a property of honesty. Also, there is no property of being ethical to attribute to whatever we want to do. Our moral and ethical talks are a way of displaying our moral sentiments even without moral arguments or actions themself. *Ethical realism* is the view that there are ethical truths and that they are made true by independent facts. These facts will be the truth-makers for ethical truths. For any realist ethical theory, we will want some account of what makes the theory true, if it is true. Many ethical theories can be understood as grounded in views about what has value, or what is good objectively.

Immanuel Kant's moral theory is grounded on intrinsic value. *Two things awe me most, the starry sky above me and the moral law within me*. Kant took the only thing to have moral worth for its own sake to be the capacity for good will we find in persons. Persons, conceived of as autonomous rational moral agents, are beings that have intrinsic moral worth and hence beings that deserve moral respect. *It is impossible to conceive of anything in the world, or indeed beyond it, that can be understood as good without qualification except for a good will*. The one thing that has intrinsic value, for Kant, is the autonomous good will of a person. That said, Kant does not understand the expression «good will» in the everyday sense. In everyday discourse we might speak of someone being a person of good will if they want to do good things. We take the philanthropist's desire to give to the less fortunate to be an example of good will in this everyday sense. On Kant's view, the person of good will wills good things, but out of a sense of moral duty, not just inclination. Naturally generous philanthropists do not demonstrate their good will through their giving according to Kant, but selfish greedy persons do show their good will when they give to the poor out of a recognition of their moral duty to do so even though they'd really rather not. So, it is our ability to recognize a moral duty and will to act in accordance with it that makes persons beings that have dignity and are therefore worthy of moral regard. On Kant's view, our free will, our moral autonomy, is our capacity

to act according to duty as opposed to being a slave to our desires or inclinations. So free will, in the sense that is associated with moral responsibility, doesn't mean being free to do as you please without consequence. Rather, freedom comes with moral responsibility for the intentions we act on.

So, understanding the good will as the capacity to will and act out of duty or respect for moral law, we can see having this capacity as part of having a rational, autonomous will. As persons, we have a free or autonomous will in our capacity to weigh our desires against each other and against the rational constraints of morality and reach our own determination of the will. We are the originators and authors of the principles we act on. On Kant's view, our free will, our moral autonomy, is our capacity to act according to duty as opposed to being a slave to our desires or inclinations. Having an autonomous good will with the capacity to act from moral duty is central to being a person in the moral sense and it is the basis, the metaphysical grounding, for an ethics of respect for persons.

An imperative is a command. A hypothetical imperative tells you what to do in order to achieve some goal. For instance, *if you want to get a good grade in calculus, work the assignments regularly*. Kant divides hypothetical imperatives into two subcategories. *The rules of skill* are conditional and are specific to each and every person to which the skill is mandated by. These are particular ends that we assign ourselves, and they provide a framework to understand how our ends can be achieved. *Whoever wills the end also wills (in so far as reason has decisive influence on his actions) the indispensably necessary means to it that is in his control*. Kant's definition provides that there are a countless number of personal ends that can exist, because each human being has their unique perspectives, desires, personal circumstances, and intended methods to reach their ends. However, Kant also claims that there is at least one end that is universally sought after, and he determines that to be happiness. *The counsels of prudence (or rules of prudence)* are attained *a priori* (unlike the rules of skill which are attained through experience, or *a posteriori*) and have universal goals such as happiness. Counsels of prudence are actions committed for the overall sake of good will for the individual, and with the best intentions. This assumes, then, that actions done with the best intentions are using the hypothetical imperative to discern and make decisions that are most moral good. Thus, almost any moral rule about how to act is hypothetical, because it assumes that your goal is to be moral, to be happy, or to please God, etc.

Kant calls his fundamental moral principle the Categorical Imperative. What is distinctive about a Categorical Imperative is that it tells you how to act regardless of what end or goal you might desire. Moral reasons override other sorts of reasons. Kant takes three formulations to be different ways of expressing the same underlying principle of respect for persons. They certainly don't appear to be synonymous.

The first formulation is known as the formula of the universal law. *Act only on that maxim that you can consistently will to be a universal law*. The maxim of our action is the subjective principle that determines our will. We act for our own reasons. Different intentions might lead to similar actions. We can identify different maxims in terms of these different reasons or intentions. For Kant, intentions matter. He evaluates the moral status of actions not according to the action itself or according to its consequences, but according to the maxim of the action. The moral status of an action is determined by the actor's intentions or reasons for acting. Morally permissible action is action that is motivated by an intention that we can rationally will that others act on similarly. A morally prohibited action is just one where we can't rationally will that our maxim is universally followed. Acting out of moral duty is a matter of acting only on maxims that we can rationally will others act on as well. The person of good will recognizes the humanity of others by not making any special exception for herself even when her interests or inclination would be served by doing so. Morality is not a matter of following rules, it is rather a matter of writing rules for ourselves that are compatible with the other persons rational autonomous nature. We show respect for others through restraining our own will in ways that demonstrate our recognition of them as moral equals. Negative examples: suicide, neglecting one's natural gifts, borrowing money knowing that one will not pay it back (lie) and refusing to help others in great need whom one could easily help at the same time.

The second formulation, tells us to treat individuals as ends in themselves. *Always treat persons (including yourself) as ends in themselves, never merely as a means to an end.* That is just to say that persons should be treated as beings that have intrinsic value. To say that persons have intrinsic value is to say that they have value independent of their usefulness for this or that purpose. The second formulation does not say that you can never use a person for your own purposes. But it tells us we should never use a

person merely as a means to your own ends. We treat people as a means to our own ends in ways that are not morally problematic quite often. My interaction with peoples is morally acceptable so long as peoples help me voluntarily, or acting autonomously for his own reasons. By contrast, we use people merely as a means to an end if we force them to do our will, or if we deceive them into doing our will. Coercion and deception are paradigm violations of the Categorical Imperative. In coercing or deceiving another person, we disrupt his or her autonomy and his or her will. This is what the Categorical Imperative forbids. Respecting persons requires refraining from violating their autonomy.

The Third Formulation is The Formula of Autonomy: *So, act that your will can regard itself at the same time as making universal law through its maxims.*

Ethical monism analyzes right and wrong action in terms of a single fundamental underlying kind of value. *Ethical pluralism* is the view that there is a plurality of fundamentally good things. There may be multiple kinds of fundamental and irreducible real value in the world. The importance of happiness, for example, comes with the existence of pleasure. The value of respect for persons comes with the existence of persons. The ethical pluralist can say that both cultures are structured around worthy fundamental values and neither unjustly favors one kind of fundamental value at the expense of another. Pluralist might allow that some ways of prioritizing worthy fundamental ethical values really are better than others, but that there is no strict rational formula for working out which is best. The evidence in ethics consists of our ethical intuitions. We do have a moral sense about things. Our experience shapes our theoretical understanding and our theoretical understanding shapes our experience in turn in a more or less organic process of intellectual growth. Reason doesn't dictate any outcomes; it merely provides the system of currency in which this negotiation towards deeper understanding takes place.

Utilitarianism is based on the idea that happiness is good. Happiness has value objectively, independent of how much we might like it. John Stuart Mill characterizes Utilitarianism as the view that *an action is right insofar as it tends to produce pleasure and the absence of pain*. Every possible course of action will have a utility. In calculating the utility of an action, we are to consider all of the effects of the action, both long run and short run. Sometimes no possible course of action will produce more pleasure than pain. We often don't know what the long-run consequences of our actions will be, and even in the short run we are often uncertain about just how much pleasure and pain will be caused for the various parties affected. Utilitarianism will simply require us to pursue the lesser evil. The action with the highest utility can still have negative utility. We need to take pleasure and pain in the broadest sense possible. There are social, intellectual, and aesthetic pleasures to consider, as well as sensual pleasures. Recognizing this is important to answering what Mill calls the doctrine of swine objection to Utilitarianism. He argued that social and intellectual pleasures are of an intrinsically higher quality than sensual pleasure.

Utilitarianism says that right action is action that maximizes overall happiness. So, Utilitarianism can call for great personal sacrifice, for example, in a parenthood. But a rule that tells doctors to kill their ordinary patients when others require their organs would not have very high utility in general. Thus, Rule Utilitarianism differs from Act Utilitarianism. But the possibility of rules with except when utility is maximized clauses renders Rule Utilitarianism vulnerable. Utilitarianism is often referred to as a consequentialist theory. Utilitarian considerations of good consequences seem to leave out something that is ethically important. Something other than consequences, a person and the sort of regard this merits is more important in deontological ethical theory such as Kantian one.

Trolley problem.

Western concern about childhood being a time of happiness has occurred only since the 19th century.

Not all cultures seek to maximize happiness, and some cultures are averse to happiness. Happiness vs. interest according S. Zizek.

Philosophical anthropology, philosophy of human is a special discipline in philosophy, in which various sciences and approaches are involved. Under philosophical anthropology in a broader sense one can simultaneously speak of a philosophical discipline: in addition to an in competing with other disciplines of philosophy (metaphysics, epistemology, ethics, philosophy of language, ontology, metaphysics, esthetics) and other sciences (psychology, anthropology, biology, sociology, science and technology, cultural studies). Philosophical anthropology is a discipline dealing with questions of philosophy of life,

phenomenology, existentialism and others philosophical trends, studying the human person, and interpersonal relationships.

Philosophical anthropology is the attempt to unify disparate ways of understanding behaviour of humans as both creatures of their social environments and creators of their own values. Although the majority of philosophers throughout the history of philosophy can be said to have a distinctive anthropology that undergirds their thought, philosophical anthropology itself, as a specific discipline in philosophy, arose within the later modern period as an outgrowth from developing methods in philosophy, such as phenomenology and existentialism. The former, which draws its energy from methodical reflection on human experience (first person perspective) as from the philosopher's own personal experience, naturally aided the emergence of philosophical explorations of human nature and the human condition.

In the strict sense philosophical anthropology is a trend in German philosophy, developing from 1920s. Philosophical Anthropology in this sense is a specific approach, which includes so different thinkers as Max Scheler, Helmuth Plessner, Arnold Gehlen, Erich Rothacker, Adolf Portmann and in some respects, Peter Sloterdijk too. The group is full of differences and rivalries, a combination of these thinkers to a group base on their reflexive sight to the human «Nature»: as living beings within the realm of other living beings, but in a special position.

Scheler defined the human being not so much as a rational animal (as has traditionally been the case since Aristotle) but essentially as a loving being. He breaks down the traditional hylomorphic conception of the human person, and describes the personal being with a tripartite structure of lived body, soul, and spirit. Love and hatred are not psychological emotions, but spiritual, intentional acts of the person, which he categorizes as intentional feelings. Scheler based his philosophical anthropology in a Christian metaphysics of the spirit. Plessner would later emancipate philosophical anthropology from Christianity.

For Scheler phenomenology isn't a method in the strict sense, but rather *an attitude of spiritual seeing, something which otherwise remains hidden*. Original experience, the givenness of phenomenological facts (essences or values as *a priori*) *before they have been fixed by logic*. The essences are never given to an outside observer with no direct contact with the thing itself. Thus, the particular attitude, disposition of the spirit or spiritual posture of the philosopher is crucial for the disclosure, or seeing, of phenomenological facts. This phenomenological attitude is fundamentally a moral one, where the strength of philosophical inquiry rests upon the basis of love. Scheler describes the essence of philosophical thinking as *a love-determined movement of the inmost personal self of a finite being toward participation in the essential reality of all possibles*.

The movement and act of love is important for philosophy for two reasons. Firstly, if philosophy hearkening back to the Platonic tradition, is a participation in a *primal essence of all essences,* it follows that for this participation to be achieved one must incorporate within oneself the content or essential characteristic of the primal essence. Such a primal essence is most characterized according to love, thus the way to achieve the most direct and intimate participation is precisely to share in the movement of love. It is important to mention, however, that this primal essence is not an objectifiable entity whose possible correlate is knowledge; thus, even if philosophy is always concerned with knowing, as Scheler would concur, nevertheless, reason itself is not the proper participative faculty by which the greatest level of knowing is achieved. Only when reason and logic have behind them the movement of love and the proper moral preconditions can one achieve philosophical knowledge.

Secondly, love is likewise important insofar as its essence is the condition for the possibility of the givenness of value-objects and especially the givenness of an object in terms of its highest possible value. Love is the movement which *brings about the continuous emergence of ever-higher value in the object just as if it was streaming out from the object of its own accord, without any sort of exertion on the part of the lover. True love opens our spiritual eyes to ever-higher values in the object loved*. Hatred, on the other hand, is the closing off of oneself or closing one's eyes to the world of values. It is in the latter context that value-inversions or devaluations become prevalent, and are sometimes solidified as proper in societies. Scheler hopes to dispel the interpretation that love and hate are only reactions to felt values rather than the very ground for the possibility of value-givenness (or value-concealment). Scheler writes, *love and hate are acts in which the value-realm accessible to the feelings of a being is either* extended *or* narrowed. Love and hate are to be distinguished from sensible and even psychical feelings; they are, instead, characterized

by an intentional function (one always loves or hates *something*) and therefore must belong to the same anthropological sphere as theoretical consciousness and the acts of willing and thinking. Scheler, therefore calls love and hate, spiritual feelings and are the basis for an emotive *a priori* insofar as values, through love, are given in the same manner as are essences, through cognition. In short, love is a value-cognition, and insofar as it is determinative of the way in which a philosopher approaches the world, it is also indicative of a phenomenological attitude.

A fundamental aspect of Scheler's phenomenology is the extension of the realm of the *a priori* to include not only formal propositions, but material ones as well. In opposite to Kant's ethical formalism he insists, that values are given *a priori*, and are feelable phenomena. A human opens evermore to beings-of-value, values only exist with a value-bearer, as a value-being. Nevertheless, values can vary with respect to their bearers without there ever occurring an alteration in the object as bearer. The value of a specific work of art or specific religious articles may vary according to differences of culture and religion. However, this variation of values with respect to their bearers by no means amounts to the relativity of values as such, but only with respect to the particular value-bearer.

According to Scheler, the disclosure of the value-being of an object precedes representation. The axiological reality of values is given prior to knowing, but upon being felt through value-feeling, can be known (as to their essential interconnections). Values and their corresponding disvalues are ranked according to their essential interconnections as follows:

1. Values of the holy vs. disvalues of the unholy.
2. Values of the spirit, truth, beauty vs. disvalues of their opposites.
3. Values of life and the noble vs. disvalues of the vulgar.
4. Values of pleasure vs. disvalues of pain.
5. Values of utility vs. disvalues of the useless.

Further essential interconnections apply with respect to a value's (disvalue's) existence or non-existence:

1. The existence of a positive value is itself a positive value.
2. The existence of a negative value (disvalue) is itself a negative value.
3. The non-existence of a positive value is itself a negative value.
4. The non-existence of a negative value is itself a positive value.
5. Good and evil is the value that is attached to the realization of a positive or negative, a higher or lower value in the sphere of willing.

Goodness, however, is not simply attached to an act of willing, but originates ultimately within the disposition or basic moral tenor of the acting person. Accordingly, the criterion of good or bad consists in the agreement or disagreement of a value intended, in the realization, with the value preferred, or in its disagreement with the value rejected.

Scheler argued that most of the older ethical systems fall into axiological error by emphasizing one value-rank to the exclusion of the others. A novel aspect of Scheler's ethics is the importance of the kairos or call of the hour. Moral rules cannot guide the person to make ethical choices in difficult, existential life-choices. The very capacity to obey rules is rooted in the basic moral tenor of the person.

A disorder of the heart occurs whenever a person prefers a value of a lower rank to a higher rank, or a disvalue to a value. Reason cannot think values; the mind can only order categories of value after lived experience has happened. Philosophical anthropology strongly re-launches the centrality of the relation between the individual and the environment, between natural and artificial, as between innate and acquired. Human beings have always created images of themselves, in order to better know themselves with the awareness of never being given once and for all, but of having to continually define themselves, impelled by the need to act, to fulfill, and to complete themselves by means of their own doing.

The philosophers, depending upon the various tendencies, have given diverse responses to such interrogatives, thus constructing numerous and different images of the human being. *We are the first era, in which human beings have become completely and entirely «problematic» for themselves; in which they no longer know what they are, but at the same time know also that they do not know* Scheler wrote. Human beings have elaborated of themselves. Scheler says that philosophical anthropology must address the

totality of man, while it must be informed by the specialized sciences like biology, psychology, sociology, etc.

Homo religious draws its origin from the Holy Scriptures and the belief in a supernatural world and on consequent feelings of fear and of hereditary fault. The homo religious is characterized by a profound sense of anguish, anxiety and dissatisfaction, derived from the myth of the fall and of original sin. At the basis of human nature there is thus an experience of rupture and of distancing, which still today weighs upon all of humanity, in the search of a well-being possessed and then lost, of a happiness felt and never again experienced, of which humanity nourishes an incurable nostalgia, and on which is founded the attitude of anguish and oppression that constitutes specifically the emotionality and impulsivity.

Both Greek philosophy and art create a harmonical, perfect and accomplished self-aware image of the superior human being – the idea of the *homo sapiens*. This image is founded upon a clear distinction between the human being and the animal. He differs not so empirically, but through posessing reason (logos, ratio). The logos thus constitutes the principium individuationis of the human being, its primary superior faculty, absolutely irreducible and incompatible with the others that characterize instead the animals. Human reason is considered a partial expression of the divine Nous and has a divine spark, which acts through the power of ideas and, as an eternal organizing principle, never ceases to produce this world and the order that regulates it. The power that orders the universe needn't an experience, exhibit its own spiritual power (power of the spirit, autonomy of the idea) and can remain constant throughout the historical becoming.

This image has been flanked, since the scientific revolution, by the naturalistic one of the *homo faber*. From this point of view, the human being is understood as the most developed animal, and the creator of highly specialized instruments (such as language), which uses a part of its animal energy in cerebral activity. Human beings do not possess a metaphysical origin and a rational faculty that qualifies them essentially, nor are they distinguished from animals from a qualitative point of view, but they are distanced from them only by a difference of degree. The only difference is a greater complexity in the results. He must obey the same laws that regulate all living beings. We have, in particular, technical intelligence, i.e., the capacity to adapt oneself actively, and without useless attempts, to new and atypical situations, by means of an anticipation of the objective structures of the environment. Human beings thus is the cerebral animal with an extraordinarily plasticity. Even the signs, words and concepts are none other than particularly refined mental instruments. The image of *homo faber* has such ancestors as atomists, empiricists, evolutionists and others.

Later in place of the faith in the progress of humanity common to all the preceding theories, it substitutes the conviction of a necessary decadence of the human being. The latter appears as an «impasse» in the evolutionary chain, the «traitor of life», of its fundamental values, its laws, its sacred cosmic sense, because using some simple surrogates it increased in a morbid way the consciousness of itself. The human being destined to become extinct, like many other animal and vegetable species. Even if its organism is in itself healthy, the human being as such is an illness, a fundamentally pathological tendency of life itself. Its spirit, or its presumed reason, were constituted by means of the process of corticalization, for which the greatest part of human energy is not at the service of the entire organism, but is utilized for the sustenance of the brain; in this way, humanity can also be defined as the «slave of the cortex». All of this then denotes an illness, a morbid orientation of life itself. The «earthworm», also known as human being, can well feel its self-importance and carve itself a role of protagonist in the course of history, to the point of founding nations, creating works of art, achieving always new scientific objectives, rather than remaining, like the animal, anchored to a single environment: this will not, however, permit it to exit from the «blind alley» or to overcome the illness that constitutes the essence of its life itself. Thought and reason, freedom of choice are nothing but a euphemism to hide the lack of instinctive security of the animal. Thus, a human being is a «false step» of life evolution and it will be civilization itself that will destroy humankind, like an «infernal» mechanism that will annihilate whoever produced it. The passage from spontaneous expression to mediated communication, from impulsive activity to conscious will, from the community to the society, from the organic conception of the world to the mechanistic one, from the society based upon the bond of blood to the state divided into classes, from the religions of the motherland to those that are patriarchal and

spiritual, from magic to technology, from metaphysics to science, indicates the direction of the path of humanity towards death.

In the image of the *homo dionysiacus*, as in the preceding conception of the *homo sapiens*, the spirit or reason appears distinct from life and from the impulses of the soul; the two constituent aspects of the human being, rationality and vitality, are understood as two entities that are irreducible to each other. In the Dionysian image the spirit is regarded as a demon, the power that destroys life. The Dionysian is thus opposed to the *homo sapiens* or to the Apollonian of a Greek kind, of which it constitutes an antithetical ideal. For the *homo dionysiacus*, the only course of salvation is the search – through the elimination of the spirit, great usurper and despot of life – for a contact with the original vital impetus, in order to regain the lost unity. We can encounter echoes of this conception in Leopold Bolk, who sees the human being as *an infantile monkey with a disorganized system of internal secretions*.

While the image of the *homo dionysiacus* humiliates the human being, the image of the *homo creator* is an the most subtle one. This form of anthropology has recovered the Nietzschian idea of the superman. The basis of this theory is the rejection of religiosity, a rejection understood as a postulate of freedom and of responsibility. The atheism of the preceding centuries (materialism, positivism, etc.) considered the existence of God as something in and of itself desirable, but not demonstrable. The atheist anthropology of the *homo creator* sustains instead that, independently of that which we can or cannot demonstrate, a God cannot and must not exist if responsibility, freedom and duty are not simple words, and if the existence of the human being must have a meaning. Only in a mechanical and non-teleological world does a «real» human being have the possibility of existing in the maximum of responsibility and of sovereignty in human choices. The Nietzschean phrase *God is dead* expresses precisely the ultimate obligation of human beings who can lean neither upon a divinity that communicates to them what they must and must not do, nor upon scraps of old metaphysics, but must take upon themselves the divinity's characteristic attributes (predestination and providence). So, a human being is open, polysemantic, variable, and plural creature.