

Philosophy 203
History of Modern Western Philosophy

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Class #26
Kant's Copernican Revolution
The Synthetic *A Priori*
Forms of Intuition

The *Critique of Pure Reason*

- First Critique
 - “Is metaphysics possible?”
 - “If so, how?”
 - What are the limits of human knowledge?
- Two editions
 - A version, in 1781
 - B version, in 1787
- The Second Critique (*Critique of Practical Reason*) concerns moral philosophy.
- The Third Critique (*Critique of Judgment*) concerns aesthetics.
- Kant’s work marks the end of the modern era.
 - Continental tradition
 - 19th century idealism (Fichte, Hegel, Bradley)
 - Marx, Comte, Schopenhauer, Kierkegaard, Nietzsche
 - Sartre, Foucault, Zizek
 - Analytic tradition
 - Mill, Frege, Russell, Wittgenstein
 - Quine, Kripke, Lewis

On 'Critique'

Critique has been used as a verb meaning "to review or discuss critically" since the 18th century, but lately this usage has gained much wider currency, in part because the verb *criticize*, once neutral between praise and censure, is now mainly used in a negative sense. But this use of *critique* is still regarded by many as pretentious jargon... (*American Heritage Dictionary*, Fourth Edition).

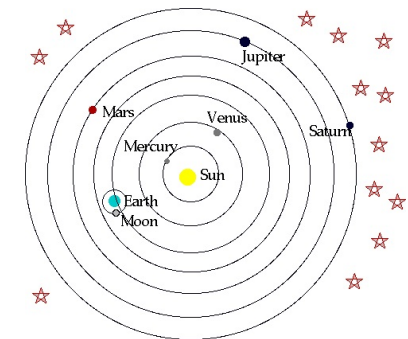
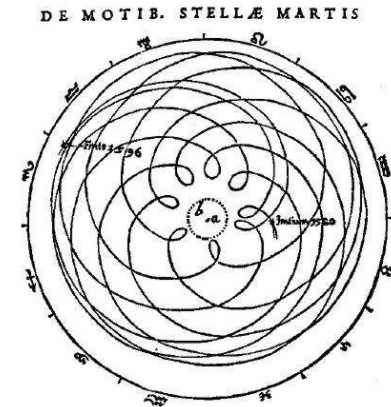
'Reason'

In the *Critique of Pure Reason*

- Everyone we have read accepts that we have some sort of ability to reason.
- The rationalists and empiricists disagreed about the matter for reason.
 - The rationalists thought that the content of our judgments is provided by innate ideas and (maybe) sense experience.
 - The empiricists thought that the content is only sensory, and looked to reduce reasoning to some kinds of psychological associations among images.
- They also disagree about the nature of reason itself.
 - Rationalists: innate principles and capacities
 - Empiricists: psychological associations among images
- Kant rejects both rationalism (dogmatic, going beyond its true abilities) and empiricism (skeptical).
- A proper analysis of the faculty of reason will synthesize, unite, and answer all legitimate philosophy questions.
- Kant's project is logical.
 - Taking logic as the laws of thought
 - Reason can determine an object (structure it).
 - Reason can make it actual (pure thought).
 - Some cognition is pure, reason acting on itself.

Kant's Copernican Revolution

- Aristoteleans believed that the sun, stars, and other celestial bodies circled the earth.
- Astronomical discoveries made the cycles of those bodies highly complicated.
- Copernicus and others found that the mathematics became tractable if he posited a moving earth.
 - “Having found it difficult to make progress there when he assumed that the entire host of stars revolved around the spectator, he tried to find out whether he might not be more successful if he had the spectator revolve and the stars remain at rest” (Bxvi, AW 720a).
- Hume and Berkeley found it impossible to justify knowledge of the material world by assuming that our cognition has to conform to objects.
 - We are stuck, either with Berkeley, as idealists, or with Hume, as skeptics.
- But, if the objects have to conform to our cognition, then we might have *a priori* knowledge of those objects.
 - Idealism



Kant On Locke and Hume

Locke left the door wide open for *fanaticism*; for once reason has gained possession of such rights, it can no longer be kept within limits by indefinite exhortations to moderations. Hume, believing that he had uncovered so universal a delusion - regarded as reason - of our cognitive faculty, surrendered entirely to *skepticism*. We are now about to try to find out whether we cannot provide for human reason safe passage between these two cliffs, assign to it determinate bounds, and yet keep open for it the entire realm of its appropriate activity (B128, AW 745b)

Subjective Idealism

- One way in which objects conform to our cognition is in imagination, when we fantasize.
- If all of the world were merely one person's fancy, then the objects of that world would necessarily conform to that person's cognition.
- Such a view of the world would be an unacceptable, subjective idealism.
 - ▶ Is Berkeley a subjective idealist?

Transcendental Idealism

- In Kant's transcendental idealism, the world conforms to our cognition because we can only cognize in certain ways.
 - The world of things-in-themselves remains, as it did for Hume, inaccessible, completely out of range of our cognition.
 - The noumenal world is beyond the limits of possible experience.
- But any possible experience has to conform to our cognitive capacities.
 - The phenomenal world, the world of possible experience, is necessarily structured according to those capacities.
- A proper understanding of that phenomenal world must include a full examination of those structuring capacities.

Our Cognitive Capacities

intuition and understanding

- Intuition (sensibility) is our mental faculty for having something presented to us.
- Understanding, which is structured according to certain basic concepts, is our mental faculty for determining, or thinking, about objects.
- All objects have to be presented in intuition and determined by concepts in order to be thought.
- Thus, all of experience necessarily conforms to our cognition.
- Logic, as the laws of thought, will help us understand our faculty of cognizing, and will thus help us understand the phenomenal world.

Kant Against Rationalists

- We should distinguish between the realm of objects of possible experience and the world of transcendent objects.
- God, for example, is outside the range of possible experience and thus can not be an object of knowledge.
 - ▶ “In order to reach God, freedom, and immortality, speculative reason must use principles that in fact extend merely to objects of possible experience; and when these principles are nonetheless applied to something that cannot be an object of experience, they actually do always transform it into an appearance, and thus they declare *all practical extension* of reason to be impossible. I therefore had to deny *knowledge* in order to make room for *faith*” (Bxxx, AW724a-b)
- Other topics outside the range of our possible experience
 - ▶ freedom
 - ▶ immortality
 - ▶ Infinitude of space and time
 - ▶ Ultimate constituents of the world (monads or atoms)
- We can not have any knowledge of such topics.

Kant's Central Claim

- Proper metaphysics, within the bounds of reason, is possible; it consists of synthetic *a priori* judgments.
- Two distinctions
 - ▶ Analytic vs synthetic claims
 - ▶ *A priori* vs empirical, or *a posteriori*, claims

Analyticity

- A linguistic property of propositions or statements.
 - Contrast with syntheticity
- For Kant, analyticity and syntheticity are characterizations of judgments.
 - Mental acts
 - Contemporary Philosophy applies them to sentences or propositions.
- Judgments, for Kant following Aristotle, are all of subject-predicate form.
 - Problem: 'I give a rose to Emily'.
 - We'll not worry about it now.
- A judgment is analytic if the concept of the predicate is contained in the concept of the subject.
 - 'Bachelors are unmarried' is analytic.
- A judgment is synthetic if the concept of the predicate adds to the concept of the subject.
 - 'Bachelors are unhappy' is synthetic.
- Other analytic judgments
 - If you're running then you're moving.
 - All neurologists are doctors.

Concepts

- Concepts may be taken either as mental objects (thoughts) or as abstract objects.
- If we take concepts to be thoughts, then different people can not share concepts.
 - My thoughts are not your thoughts, even though we can think about the same judgment/proposition.
- It's preferable to take concepts as abstract objects, and to take our thoughts to be about concepts.
- When I think of a concept, like the concept of a bachelor, I perform a mental act which we can call grasping the concept.
- These concepts are structured, so that they can contain, or not contain, other concepts.



Conceptual Containment

two different notions

How a plant grows from a seed



- Kant uses what Frege (in the late nineteenth century) calls beams-in-the-house analyticity.
 - ▶ When we look at a house, if we want to see if it contains a certain structure, we merely peel back the walls.
 - ▶ We literally see the beams.
- In contrast, Frege defends a plant-in-the-seeds analyticity.
 - ▶ A statement can be analytic as long as it follows from basic axioms according to analyticity-preserving rules of inference.
 - ▶ Frege can handle statements that are not in subject-predicate form.
 - 'I give a rose to Emily'
 - 'Astrid walks with those with whom she strolls'
 - 'If it is snowing, then it is cold'
 - ▶ The latter sentence is analytic, true in virtue of the conceptual containments of its parts.

An Epistemological Distinction

A Priori vs Empirical (*a posteriori*)

- Analyticity and syntheticity concern concepts, whatever we take them to be.
 - This distinction is linguistic or conceptual (or even psychological).
- The distinction between *a priori* justifications and empirical (or *a posteriori*) ones is epistemological.
 - The two distinctions are independent.
- ‘Snow is white’ is empirical.
 - We need to see particular snow in order to know that snow is white.
- ‘ $2 + 3 = 5$ ’ is *a priori*.
 - We need experiences with no particular objects in order to know that $2+3=5$.
 - No empirical experiences will undermine that claim.
 - 2 cups of water plus 3 cups of salt
 - Two chickens added to three foxes



A Metaphysical Distinction

the necessary/contingent distinction

- Some claims hold necessarily.
 - mathematical claims
- Other claims are merely contingent.
 - snow is white
- Many philosophers typically, and traditionally, consider claims to be necessary only if they are believed *a priori*.
 - Kant makes that claim explicitly.
 - As Hume argued, one can not arrive at a necessary truth from contingent experiences.
- One might also think that all *a priori* claims must be analytic.
 - One reasons to the truth of an analytic claim without appeal to experience.
- Similarly, one might align contingency with empirical justification and syntheticity.
 - A claim is contingent when it is justified by appeal to sense experience and it brings together concepts that are not necessarily related.
- Put aside the necessary/contingent distinction, since Hume and Kant agree on it.

Hume's Alignment

epistemology and semantics

- Relations of ideas are justified *a priori* and analytic.
 - and thus necessary
- Matters of fact are justified empirically (by tracing ideas back to initial impressions) and synthetic.
 - and thus contingent

	<i>A priori</i>	Empirical
Analytic	Relations of Ideas	--
Synthetic	--	Matters of Fact

Kant's Big Claim

	<i>A priori</i>	Empirical
Analytic	Logic/ Beams in the House	--
Synthetic	Most Mathematics, Metaphysics, and Some Physics	Empirical Judgments

- Metaphysics is possible, and it consists of synthetic *a priori* judgments.
- “Experiential judgments, as such, are one and all synthetic” (A7/B11, AW 725a).
 - ▶ Hume
- There are also synthetic claims that are not experiential.
 - ▶ Kant's innovation

The Synthetic *A Priori* In Mathematics

Mathematical propositions, properly so called, are always *a priori* judgments rather than empirical ones; for they carry with them necessity, which we could never glean from experience...It is true that one might at first think that the proposition $7 + 5 = 12$ is a merely analytic one that follows, by the principle of contradiction, from the concept of a sum of 7 and 5. Yet if we look more closely, we find that the concept of the sum of 7 and 5 contains nothing more than the union of the two numbers into one; but in [thinking] that union we are not thinking in any way at all what that single number is that unites the two. In thinking merely that union of 7 and 5, I have by no means already thought the concept of 12; and no matter how long I dissect my concept of such a possible sum, still I shall never find in it that 12. We must go beyond these concepts and avail ourselves of the intuition corresponding to one of the two... (B14-5, AW 726a).

The Synthetic *A Priori* In Metaphysics

- For example: Every effect has a cause.
- The universality of the statement entails that it is not an empirical judgment.
- But Kant claims that it is not an analytic judgment.
- “In the concept of something that happens I do indeed think an existence preceded by a time, etc., and from this one can obtain analytic judgments. But the concept of a cause lies quite outside that earlier concept and indicates something different from what happens...” (A9/B13, AW 725b).

The Synthetic *A Priori* In Physics

- “*Natural science contains synthetic a priori judgments as principles.* Let me cite as examples just a few propositions: e.g., the propositions that in all changes in the corporeal world the quantity of matter remains unchanged; or the proposition that in all communication of motion, action and reaction must always be equal to each other” (B17-18, AW 726b).
 - i.e. Newton’s Laws of Motion
- Such laws hold necessarily, and so can not be learned from experience.
- Kant’s conception of physics is closer to that of Galileo and Descartes than it is to contemporary physicists.
- While some contemporary physics is highly speculative, it is generally held that a mark of a good theory is whether it is testable, or refutable, or otherwise confirmed or contravened by experimental results.
 - String theory
- Kant agrees that some portions of physics must be empirically testable.
- He also believes that certain physical principles are synthetic *a priori*.
- “Experience would provide neither strict universality nor apodeictic certainty...” (A31/B47, AW 733b).

Innate Ideas and Kantian Psychology

- Kant does not argue that innate ideas are built into our minds.
- He argues that there are certain cognitive structures that impose an order to our possible experience.
- The mind has templates for judgments, which are imposed and can be known *a priori*.
- Against those who defend innate ideas, it does not contain judgments themselves.
- If we look at our cognitive structures, turning our reason on itself, we can find the necessary structure of our reasoning, and grounds for synthetic *a priori* claims.
- That process, which Kant calls transcendental reasoning, is the essence of Kant's Copernican revolution.
- Kant's transcendental arguments lead to a description of our subjective conceptual framework, which nevertheless holds necessarily for all possible experience.

Review

Toward the Transcendental Aesthetic

- To make room for metaphysics, Kant argues that there are synthetic *a priori* judgments.
 - mathematics
 - physics
- Since these judgments are synthetic, they do not follow simply from conceptual analysis.
- Since these judgments are *a priori*, they can not be learned from experience.
- Hume's claim that we can not learn them from experience led him to skepticism.
- Kant starts with the claim that we know them, and works backwards, or transcendently, to the conditions that must obtain in order for us to have such knowledge.
- Such conditions will be the necessary structures of our logic, or reasoning.

The Transcendental Aesthetic and the Transcendental Analytic

- These two parts of the Critique correspond to two distinct functions of our psychology.
- The transcendental aesthetic
 - How objects, and the world, are given to us
- The transcendental analytic
 - How our minds determine and understand that which is given.
- We are presented, in sensibility, with a world having certain properties.
- We cognize that world, using understanding, according to certain concepts.
- By examining the properties that form the foundations of all our experiences, we will find the necessary properties of our experience.
- By examining the concepts that determine all our understanding, we will find the necessary properties of our thought.

The Transcendental Aesthetic

“Psychology shall once more be recognized as the queen of the sciences, for whose service and equipment the other sciences exist. For psychology is once more the path to the fundamental problems”
(Nietzsche, *Beyond Good and Evil* §23).

Intuition

- “The effect of an object on our capacity for representation, insofar as we are affected by the object, is *sensation*. Intuition that refers to the object through sensation is called *empirical* intuition. The undetermined object of an empirical intuition is called *appearance*” (A19-20/B34, AW 729b).
- Not all intuitions are empirical.
- But in empirical intuitions we can divide the matter from the form.
 - ▶ The matter is what corresponds to sensation in the strictest sense possible.
 - ▶ If I am holding a pen and looking at it, I am given some appearance in intuition.
 - ▶ Additionally, this appearance has certain abstract properties, a form, the particulars of which are unique to my experience of the pen, but which, in general, are properties of all such experiences.
- All experiences take place in space and in time.

Pure Intuitions

- Some intuitions have no empirical matter.
- “If from the representation of a body I separate what the understanding thinks in it, such as substance, force, divisibility, etc., and if I similarly separate from it what belongs to sensation in it, such as impenetrability, hardness, color, etc., I am still left with something from this empirical intuition, namely, extension and shape. These belong to pure intuition, which, even if there is no actual object of the senses or of sensation, has its place in the mind *a priori*, as a mere form of sensibility” (A20-1/B15, AW 730a).

Getting to Pure Intuitions

- We can consider pure intuitions by performing what might be thought of as Lockean abstraction.
 - The kind of abstraction that Berkeley did not disallow
 - The consideration of some properties of an idea, rather than others.
- Or, we can consider pure intuitions by thinking about intuitions without any matter.
- But however we arrive at our consideration of pure forms of intuition, Kant does not claim that our knowledge of space and time are derived from abstraction.
- We are discovering that knowledge of space and time is necessarily presupposed in any empirical intuition.
- The psychological process of abstraction is different from the transcendental argument.

Outer Sense

- There are two underlying forms of all intuitions: space and time.
- We represent objects as outside of us using our outer sense.
- All objects outside of us are represented as extended in space.
 - Space is the form of outer sense.
- “The representation of space must already be presupposed in order for certain sensations to be referred to something outside me (i.e. referred to something in a location of space other than the location in which I am)...We can never have a representation of there being no space, even though we are quite able to think of there being no objects encountered in it. Hence space must be regarded as the condition for the possibility of appearances...” (A23-4/B38-9, AW 730b-731a).

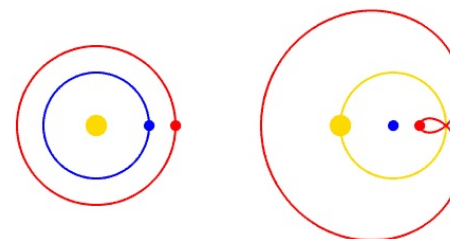
Inner Sense

- Similarly, time must be presupposed for all experiences.
- We represent objects according to our inner sense as in time.
 - Time is the form of inner sense.
- “Simultaneity or succession would not even enter our perception if the representation of time did not underlie them *a priori*”(A30/B46, AW 733a).



The Copernican Revolution

Intuition Installment



- Kant's argument for the presupposition of space and time recalls Plato's argument for the doctrine of recollection, or *anamnesis*.
 - ▶ In *Phaedo*, Plato argues that our knowledge of equality can not come from looking at equal things.
 - ▶ All things are unequal in some way.
 - ▶ Even if we were to find some perfectly equal things, like atoms, our concept of equality could not come from our experiences with them.
 - ▶ We must presuppose an idea of the equal in our claims that two objects are equal, and can not learn that concept from unequal objects.
- Kant: our experiences with objects presuppose that they are given in space and time.
- The idea of a possible experience occurring outside of space or time is nonsense.
- Instead of despairing of learning of space and time from experiences which presuppose it, Kant inverts his account to make space and time subjective forms of intuition.
- They are ways in which we structure the world of things in themselves, not ways in which the world exists in itself.

Hume's Influence

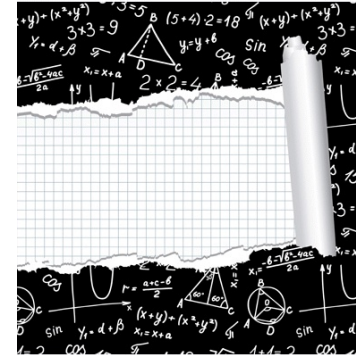
- Taking space and time to be forms of intuition, Kant extends Hume's claims about causation.
- Hume reinterpreted 'cause' as a mental phenomenon.
- Kant takes space and time to be forms of our intuition, rather than things in themselves.
- Consequently, Kant is able to take objects in space and time to be empirically real.
- "Our exposition teaches that space is *real* (i.e. objectively valid) in regard to everything that we can encounter externally as object, but teaches at the same time that space is *ideal* in regard to things when reason considers them in themselves, i.e., without taking into account the character of our sensibility. Hence we assert that space is *empirically real* (as regards all possible outer experience), despite asserting that space is *transcendentally ideal*, i.e., that it is nothing as soon as we omit [that space is] the condition of the possibility of all experience and suppose space to be something underlying things in themselves" (A28/B44, AW 732b).

Kant's Twin Doctrines

Empirical Realism and Transcendental Idealism

- We can say nothing of the noumenal world of things in themselves.
 - not even that they are in space and time
- Berkeley's empirical (or material) idealism made the mistake of denying an outer, material world on the basis of the transcendence of the noumenal world.
- The rationalists, as transcendental realists, made the mistake of asserting knowledge of things in themselves.
- Kant's claim is that we can have significant knowledge of an external world (of appearances) without claiming any knowledge of the noumenal world.
- Space and time are properties of our representations of the world, and not the world as it is in itself.
- Space and time are real properties of empirical objects.

Geometry, Mechanics, and the Pure Forms of Sensibility



- Kant's transcendental exposition of space and time explains how we can have certainty of both geometry and pure mechanics.
- Geometry is the study of the form of outer sense, of pure, *a priori* intuitions of space.
- Pure mechanics is the study of the form of inner sense, time.
 - ▶ "Only in time can both of two contradictorily opposed determinations be met with in one thing: namely, *successively*. Hence our concept of time explains the possibility of all that synthetic *a priori* cognition which is set forth by the - quite fertile - general theory of motion" (A32/B48-9, AW 734a).
- Arithmetic, too, depends essentially on construing addition as successions in time.
- But, constructing numbers in intuition requires the synthetic unity of apperception behind the categories of the understanding.

From Intuition to Understanding

- Kant separates two faculties of cognition.
 - sensibility (the faculty of intuition)
 - understanding
- The faculty of intuition gives us appearances.
 - Appearances are the raw data, the content, of experience.
 - Our intuitions are passive.
- The raw data of intuition is processed in the understanding by the imposition of concepts.
 - “All our intuitions, as sensible, rest on our being affected; concepts, on the other hand, rest on functions. By *function* I mean the unity of the act of arranging various representations under one common representation” (A68/B93, AW 738b).
- This act of arranging what is given in intuition is what Kant calls synthesis of the manifold.
- This synthesis is then cognized by the structured application of concepts in the understanding.
- If the synthesis is empirical, then we have an ordinary empirical cognition.

Pure Synthesis

- If the synthesis is pure, then we can arrive at pure concepts of the understanding, which are nevertheless the conditions of possible experience.
- Intuition and understanding thus work together to produce experience.
- “Thoughts without content are empty; intuitions without concepts are blind” (A51/B76, AW 737b).
- The transcendental aesthetic consisted of Kant’s explications of the pure intuitions of space and time.
- The transcendental analytic is the much longer explication of the categories of the understanding, how we impose our conceptual apparatus on what is given in intuition.

Un-Cognized Appearances

- What is given in intuition is not necessarily structured by the understanding.
- We are given appearances in space and time, but without any conceptual structure.
- “Appearances might possibly be of such a character that the understanding would not find them to conform at all to the conditions of its unity. Everything might then be so confused that, e.g., the sequence of appearances would offer us nothing providing us with a rule of synthesis and thus corresponding to the concept of cause and effect, so that this concept would then be quite empty, null, and without signification. But appearances would nonetheless offer objects to our intuition; for intuition in no way requires the functions of thought” (A90-1/B 123, AW 744a).



Our Conceptual Apparatus

both subjective and objective

- In order to think about those appearances, we have to cognize them.
- We cognize using whatever conceptual apparatus we have.
- That conceptual apparatus is subjective, in that it belongs to us individually.
- But it is also objective, because the world of objects is precisely the world of appearances, what is given in intuition.

