

Phil 270 - Midterm 1 Study Guide

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Renee Descartes - Meditations

Foundationalism:

Foundationalism is the view that there are two components to a justified belief system: basic beliefs and non-basic beliefs. Non-basic beliefs are beliefs that are inferred from (or justified by) other beliefs. In contrast, a basic belief is a belief that is *not* inferred from (or justified by) other beliefs.



The Regress Argument for Basic Beliefs:

1. Suppose B_1 is justified.
 2. Then, either B_1 is basic or non-basic. [Law of Excluded Middle]
 3. If B_1 is non-basic, then there must be another set of beliefs, B_2 , which justify B_1 . [By Definition]
 4. Either B_2 is justified or it is not. [Law of Excluded Middle]
 5. If B_2 is not justified, then B_1 is not justified.
 6. B_2 is justified. [From 1 & 5 MT]
 7. If B_2 is justified, then there must be another set of beliefs, B_3 , which justify B_2 .
 8. Either my beliefs are justified by an infinite regress of beliefs, or they terminate in a basic belief.
 9. An infinite regress of beliefs is impossible.
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- ∴ If B_1 is justified, then it must terminate in a basic belief. [From 8 & 9 DS]

Non-Doxastic Sources of Evidence:

A Non-Doxastic source of evidence is a source that provides justification for a belief without relying on another pre-existing belief. Examples include:

1. Sensory Experience.
2. Memory
3. The Natural Light of Reason

Descartes thinks that neither sensory experience nor memory are strong enough sources of evidence to *guarantee* the truth of the beliefs they purport to give evidence for. But if that is correct, and if knowledge requires certainty, then beliefs

justified through the senses/memory are not going to count as knowledge.

In the First Meditation, Descartes presents a series of arguments designed to show that none of the beliefs we have which are based solely on our senses and memory give us knowledge. Thus, we cannot be certain that the things we perceive through our senses have the qualities we perceive them as having (the argument from illusion), we cannot be certain that what we perceive through our senses exists at the time we are perceiving them (the dream argument), and we cannot even be certain the things we perceive through our senses exist *at all* (the evil deceiver argument). So, for Descartes, sensory perception and memory are non-doxastic sources of evidence, but none of the beliefs that are based on the senses or memory alone are going to give us knowledge.

The Natural Light of Reason:

The way Descartes tries to establish (or perhaps just illustrate) the existence of this non-doxastic source of evidence is with the “cogito” argument.

1. Whoever is conscious of themselves and other things exists.
2. We are conscious of ourselves and other things.

∴ Therefore, we exist.

[From 1 & 2].

In this passage Descartes denies that the cogito is justified by means of a deductive inference. Instead, what Descartes says is that the cogito is established through a “simple intuition of the mind,” that it is something “self-evident” (ibid). By “simple intuition” Descartes means something that can be seen in a single act of thought [cf. AT: 10:407 & 5:136-138].

For Descartes, the truth of the cogito is something justified through a kind of **immediate rational insight**, it is a kind of self-evident truth guaranteed through this rational insight. That is, I know “If I am thinking, then I must exist” by virtue of a kind of rational insight which enables me to just “see” the proposition is true as soon as I understand what it means. Descartes calls this insight the “natural light of reason.” For Descartes, the “natural light of reason” is supposed to be a non-doxastic source of evidence. And, unlike the senses or memory, anything justified through the natural light of reason must guarantee the truth of the belief in question.

Descartes’ Truth Criterion:

One standard objection that many have raised at this point is that it is entirely unclear how the cogito can be used as the *foundation* for all our knowledge. Thus far we seem to have a pretty paltry result: namely, if I am thinking, then I exist. But how on earth can we use this principle to infer and justify our beliefs in all the other things we think we know? Is the cogito just a dead-end?

Descartes suggests that what makes him certain he is a thinking thing is that he perceives this fact “clearly and distinctly.” From this, Descartes suggests we can generalize and infer that *anything* which is perceived with the *same* clarity and distinctness as the cogito is absolutely certain. So, whatever can be clearly and distinctly perceived must be absolutely certain and true. Here is the basic argument:

1. If my clear and distinct perceptions could be false,
then the cogito would not be certain.
2. The cogito is certain.

∴ My clear and distinct perceptions could not be false [From 1 & 2, MT]
(i.e., whatever I perceive clearly and distinctly is true).

The basic idea is that if the truth-criterion is false, then it would follow that some belief could be perceived as clearly and distinctly as the cogito, and yet be false. But then it would follow that the cogito *could* also be false, since our only justification for it is that it is clearly and distinctly perceived. But the cogito could never be false, since it is absolutely certain and impossible to doubt. Therefore, it follows that *whatever* is clearly and distinctly perceived must be true.

Deduction as a Source of Justification:

Non-basic beliefs must be inferred from those that are basic by means of deductively valid inferences. If we think about certain inference patterns, such as those studied in formal logic, what is revealed by the natural light of reason is that any argument which exemplifies one of those patterns *must* have a true conclusion if the premises of the argument are also true. The mark of a deductively valid argument is that there is no way for the premises to be true and the conclusion false. For example, any argument that is of the following form is necessarily valid: If P, then Q, P, therefore Q, etc. Now, if the premises of such an argument are basic beliefs which are necessarily true (because they are justified by the natural light), and we infer the conclusion by means of a deductively valid argument, then the non-basic beliefs will also have to be necessarily true. So, anything inferred from a basic belief that is certain by means of a deductively valid inference will also be certain.

Putting all this together, what Descartes is proposing is the following. In order to know any proposition, P, P must be justified. If P is justified, then the evidence for P must be so strong that it guarantees P is true. In order to be so justified, P must either be a basic belief justified by the natural light of reason, or, P must be a non-basic belief that is justified by having been validly inferred from justified basic beliefs in a finite number of steps.

For Descartes, rational intuition works along with deduction in order to give us a system of beliefs that are all certain. If we start with certain basic beliefs that are justified through the natural light of reason, and if every other belief we have is then inferred from these initial beliefs by means of deductively valid inferences, then every belief we have will be absolutely certain. And only those beliefs will count as knowledge.

Space & Time - Newton, Leibniz, & Clarke

Relative vs. Absolute Motion:

Isaac Newton published the *Principia Mathematica* in 1687 and the effect was tremendous: it effectively laid the foundations for modern science. Among the most significant theories that Newton developed in that book were his theories of absolute space, time and motion. These theories were attacked by Leibniz in his correspondence with one of Newton's collaborators, Samuel Clarke. The Clarke-Leibniz correspondence was a *causes célèbres* in Europe, and it had a very important impact on Kant's thinking. One of Newton's primary motivations for devising his theory of space and time was to explain and justify the distinction between what he called Relative and Absolute Motion.



1. **Relative Motion:** The movement of an object with respect to some chosen reference frame. For instance, a chess piece may be at rest relative to the chessboard but in motion relative to the room if the board is moving.
2. **Absolute Motion:** Motion that is independent of any specific reference frame, existing in an absolute sense. If such motion exists, it would imply a universal frame of reference in which objects can be said to be truly at rest or in motion.

The Newtonian Theory of Space & Time:

The Newtonian theory of space and time is characterized by four major theses, which concern the ontological status of space and time, the nature of spatial relations, the identity of spatial parts, and the immovability of space.

1. **Space and Time as Self-Subsistent Entities**
Space and time exist independently of the material bodies and events that occupy them. According to Newton, they are containers that persist regardless of their occupants. Each material body and the region of space it occupies are numerically *distinct*: the extension of a body coincides with the extension of a corresponding region of space, but these extensions belong to different entities. While the extension of a body is a property of that body, the extension of space is a property of space itself. Furthermore, space is conceived as an infinite entity distinct from the material objects it contains. Additionally, space is ontologically prior to material bodies: while space exists independently of its occupants, material bodies cannot exist unless they occupy some region of space.
2. **Spatial Relations Obtain Primarily Between Parts of Space**
Spatial relations, such as distance, obtain first and foremost between regions of space and only derivatively between material bodies. For instance, if two bodies, A and B, are three feet apart, this is because they occupy two regions of space,

R1 and R2, that are themselves three feet apart. Since space is ontologically prior to the objects within it, spatial relations hold primarily between the parts of absolute space, and only secondarily between material bodies.

3. The Identity of Spatial Parts is Defined by Their Location

Each part of space is identified solely in terms of its position relative to other parts of space. Since all parts of space are qualitatively identical, the only distinguishing factor between them is their location. Newton argues that the identity of any given part of space, s_1 , consists in its being precisely where it is. If s_1 were located elsewhere, it would not be s_1 but a different part of space. Thus, spatial identity is entirely defined by relative position.

4. The Parts of Space are Fixed and Immovable

Because the identity of each part of space is defined by its location, it follows that spatial parts cannot move. Movement requires a change in location, but since a part of space is identical to its location, if s_1 were to move, it would cease to be s_1 . This would imply a contradiction, as it would require s_1 to both move and remain itself. Consequently, the parts of space must be fixed and immovable.

Unfortunately, there are some very serious problems with this view. One major problem is that we never have any direct perceptual acquaintance with either time or space themselves. Although Newton insists that absolute space exists independently of the material bodies that occupy it, he acknowledged that the existence of this entity could not be established *directly* through perceptual experience. Nor, for that matter, can we ever determine through perceptual experience whether an object is (or is not) at absolute rest from one moment to the next. Through perceptual experience, we are only ever acquainted with the relative locations of objects, never space itself, or the parts of space.

There were two reasons given by Newtonians as to why absolute space cannot be perceived. The first reason, noted in the passage just cited, is that the parts of space are qualitatively indiscernible. What this implies is that there is no way of detecting whether or not, at any given moment, an object's location remains fixed with respect to the parts of absolute space. The second reason, also hinted at in this passage, is a consequence of Newton's claim that the parts of space are fixed and immovable. From the fact that the parts of space are immovable, the Newtonians inferred that space itself must be causally inefficacious: since one thing can only causally affect another through impact, the parts of space must be causally inert if they are immovable. If space is causally inert, the parts of space cannot be directly perceived through the senses since they cannot affect our sense organs.

Relationalism:

The most common alternative view, defended by Leibniz, Huygens, Berkeley (and others), is that space and time are merely a system of relations. Spatial relations do not obtain between bodies and a distinct entity which they occupy, since there is no independently existing container which contains material objects. And, since space and time are merely the relations that obtain between bodies, their existence is ontologically dependent upon the material bodies that stand in those relations: for, if there were no bodies, or relata, there would also be no spatial relations, and hence, no space.



In his correspondence with Clarke, Leibniz presents a series of arguments against the Newtonian theory of absolute space and time. These arguments provide indirect support for relationalism, insofar as they purport to show that the alternative view is incoherent.

The Argument From The Principle of Sufficient Reason:

1. Suppose absolute space exists.	
2. Absolute space is homogeneous, meaning no region differs qualitatively from any other.	[By Definition]
3. If absolute space exists, then God must have had a sufficient reason for placing the universe in one region rather than another.	[Principle of Sufficient Reason]
4. There can be no sufficient reason for this placement, since all regions of space are qualitatively identical.	[From 2]
5. If absolute space exists, then the PSR is false.	[From 3 & 4]
6. The Principle of Sufficient Reason is true.	[Leibniz's Axiom]
∴ Absolute space does not exist.	[From 5 & 6 MT]

The Argument From Identity of Indiscernibles:

1. Suppose absolute space exists.	
2. If absolute space exists, then the universe could be shifted in space or time without any qualitative change.	[By Definition]
3. If the universe is shifted in space or time without qualitative change, the pre-shift and post-shift states are indiscernible.	[Identity of Indiscernibles]
4. If two states are indiscernible, they are identical.	[Identity of Indiscernibles]
5. If absolute space exists, then distinct states of the universe would be identical, which is absurd.	[From 2, 3, & 4]
6. The Identity of Indiscernibles is true.	[Leibniz's Axiom]
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∴ Absolute space does not exist.	[From 1, 5, & 6 RAA]

Statis Shift & Static Reversal:

1. Suppose absolute space exists and is occupied by a finite material universe.	
2. If absolute space exists, then the universe could be shifted to a different region of space while preserving all internal spatial relations.	[By Definition of Absolute Space]
3. Let W_1 be a world identical to the actual world W_2 , except shifted five feet to the left in absolute space.	[Static Shift]
4. W_1 and W_2 are indiscernible, as they differ only in their position in absolute space, not in their internal relations.	[From 2 & 3]
5. If two worlds are indiscernible, they are identical.	[Identity of Indiscernibles]
6. W_1 and W_2 are identical, but this contradicts the assumption that W_1 is distinct from W_2 .	[From 4 & 5]
7. The Identity of Indiscernibles is true.	[Leibniz's Axiom]
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∴ Absolute space does not exist.	[From 1, 6, & 7 RAA]

Another version of this argument asks us to imagine a world in which the matter in the universe is distributed in space “in reverse” to the way it is in the actual world. Commentators have noted that there are at least two possible ways to have a reversal. One possibility is that we imagine a possible world in which the material universe is reversed by rotating it 180 degrees while keeping all the internal spatial relations between bodies exactly the same. A second possibility is that the kind of reversal

Leibniz has in mind is something like a mirror image. That is, we are asked to imagine a material universe in another possible world which is exactly like our own except for the fact that it is a mirror image of our world (i.e., everything is reversed left to right).

Either way, one can then formulate Leibniz's argument as follows. Assume, for reductio, that absolute space exists in W_1 and that the material universe which occupies space is either finite or infinite. There is a possible world W_1 , numerically distinct from W_2 , in which the exact same material universe occupies a numerically distinct region of space which is the "reverse" of W_2 . W_1 and W_2 are completely indiscernible with respect to their properties. If W_1 and W_2 are indiscernible, then they are identical. But this contradicts our assumption that it is possible for W_1 to be numerically distinct from W_2 . Therefore, it is false that absolute space exists in W_2 and that the material universe which occupies space is either finite or infinite.

Kinematic Shift:

1. Suppose absolute space exists and the material universe is either finite or infinite.	
2. If absolute space exists, then the entire material universe could be moved at a constant speed in a straight line without altering the internal relations between bodies.	[By Definition of Absolute Space]
3. Let W_1 be a world where the material universe is moving at a constant speed in a straight line, and W_2 be the actual world where the material universe is at rest.	[Kinematic Shift]
4. W_1 and W_2 are indiscernible, as they differ only in their state of motion in absolute space, not in their internal relations.	[From 2 & 3]
5. If two worlds are indiscernible, they are identical.	[Identity of Indiscernibles]
6. W_1 and W_2 are identical, but this contradicts the assumption that W_1 is distinct from W_2 .	[From 4 & 5]
7. The Identity of Indiscernibles is true.	[Leibniz's Axiom]
\therefore Absolute space does not exist.	[From 1, 6, & 7 RAA]

Verificationist Argument:

1. Suppose absolute space exists and is occupied by a finite amount of matter in some region of space.
 2. We can conceive of a possible world W_1 that is identical to the actual world W_2 in all respects, except that the matter in W_1 occupies a region of space numerically different from the one it occupies in W_2 (e.g., shifted five feet to the left). [Static Shift]
 3. W_1 and W_2 are indiscernible, as their internal spatial relations are identical, and no detectable difference exists between them. [From 2]
 4. If two states of affairs are indiscernible, then there is no meaningful difference between them. [Verificationist Principle]
 5. Claims about differences that are in principle undetectable are meaningless. [From 4]
 6. Absolute space implies differences (e.g., shifts in position) that are in principle undetectable. [From 2 & 3]
 7. Therefore, claims about absolute space are meaningless. [From 5 & 6]
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- ∴ Absolute space does not exist. [From 1, 7 RAA]

The Leibnizian Account of Space & Time:

I. Space and Time as Relational

- a. Space is defined as the **order of coexistences**—the spatial relations that bodies have to one another at a given moment. (e.g., distance, angles, and orientation)
- b. Time is defined as the **order of successions**—the temporal relations that events have to one another. (e.g., before, after, simultaneity)
- c. Space and time are not independent containers or substances but are **merely relative**, grounded in the relations between bodies and events.

II. Formation of the Concept of Space

- a. The mind constructs the concept of space in three steps:
 - i. **Observation of Coexistent Bodies:** The mind perceives multiple bodies existing simultaneously and observes their spatial relations (e.g., distance, angles, and orientation). These relations are acquired through sensory experience, primarily vision and touch.
 - ii. **Concept of Place:** By observing changes in the relations of bodies (e.g., one body moving relative to others), the mind forms the concept of *place*. A body's place is defined by its relations to other bodies. If two bodies occupy the same set of relations to a fixed reference frame at different times, they are said to occupy the *same place*.

- iii. **Concept of Space:** Space is the collection of all possible places. It is formed by abstracting and combining the relations of all coexistent bodies into a unified concept.

III. Abstract vs. Concrete Space

- a. **Concrete Space:** The actual spatial relations between coexistent bodies.
- b. **Abstract Space:** The order of spatial relations considered in abstraction from the bodies themselves. Leibniz argues that abstract space is a mental construct and does not exist independently of the bodies that stand in these relations.

IV. Critique of Newtonian Substantivalism

- a. Leibniz criticizes Newton's view that space is an independent, absolute entity (a "container") that exists apart from bodies.
- b. The Newtonian concept of space arises from **hypostatization**—mistakenly treating an abstract idea (the order of relations) as a concrete, independent entity.
- c. For Leibniz:
 - i. Space is not a substance but a system of relations.
 - ii. The idea of space as an independent entity is a mental abstraction, not a real thing.

V. Time as Relational

- a. Time is not an independent flow but the order of successive events.
- b. Just as space is the order of coexisting bodies, time is the order of events in relation to one another.

VI. Space and Time as Ideal

- a. Space and time, when considered in abstraction from bodies and events, are **ideal**—they exist only as mental constructs.
- b. They are not real entities but tools for understanding the relations between things.

VII. Key Takeaways

- 1. Space and time are relational, not substantive.
- 2. They arise from the relations between bodies and events.
- 3. The mind constructs concepts of space and time through observation, abstraction, and reasoning.
- 4. Newton's absolute space and time are rejected as hypostatizations of abstract ideas.
- 5. Space and time, in their abstract forms, are ideal and exist only in the mind.

Christian Wolff - Preliminary Discourse

Wolff On The Most General Types of Knowledge:



1. **Historical Knowledge:** the awareness of things that occur in the world around us. Obtained via:

i. **Outer senses:**

“By means of the senses we know things which are and occur in the material world” [PD 1.1].

ii. **Inner senses (introspection):**

“The mind is conscious of the changes which occur within itself” [PD 1.1].

Historical knowledge, therefore, consists of “Knowledge of those things which are and occur either in the material world or in immaterial substances” [PD 1.1].

2. **Philosophical Knowledge:** the awareness “of the reason of things which are or occur” [PD 1.6]. This type of knowledge involves understanding the grounds or explanations for things. Examples illustrating the distinction between historical and philosophical knowledge:

i. Historical knowledge allows us to observe that “animals, vegetables, and minerals exist,” whereas philosophical knowledge defines these categories.

ii. Historical knowledge tells us that “the sun rises in the morning and sets in the evening,” but philosophical knowledge explains *why* the sun rises and sets [PD 1.3].

Philosophical knowledge consists in identifying definitions or explanations that provide the reasons behind occurrences.

Wolff On The Faculties of Cognition

- **Representation:** A mental state with intentional content.

- **Cognition:** When the mind has a representation and is aware of what it represents

- **Faculty of Sense:** The capacity the mind has to form representations when it is affected by external objects

- **Faculty of Imagination:** The capacity the mind has to form representations off something which is not present, but which it formerly sensed, like the image of a color, or the memory of a previously experienced pain.

- **Faculty of Intellect:** The capacity the mind has to form general concepts (viz., representations of what particular things share in common with one another), as well as become aware of each of the various marks that define a concept.

Wolff's Psychological Analysis of Representations:

Wolff argues that historical knowledge arises from observing the world around us. All cognition begins with sensation, as the senses enable perception. However, the senses alone do not provide cognition; rather, they present an undifferentiated “manifold” of sensible qualities. Cognition requires the mind to identify and distinguish these qualities.

The intellect processes sensory input through reflection, comparison, and abstraction:

- **Reflection:** Recognizing features of perceived objects.
- **Comparison:** Determining similarities and differences.
- **Abstraction:** Isolating shared characteristics to form concepts.

By analyzing sensory data, the mind forms distinct representations of objects and their attributes.

Cognition progresses through stages:

1. Identifying individual sensible qualities (e.g., a red patch in a visual field).
2. Recognizing collections of qualities that consistently appear together, forming representations of objects.
3. Abstracting shared characteristics from objects to form general concepts (e.g., whiteness from snow, chalk, and paper).
4. Constructing higher-level abstractions by omitting specific features (e.g., forming the concept of “animal” from different species).

Beyond objects, the mind observes changes in objects over time. By analyzing these changes, it identifies necessary and sufficient conditions for their occurrence. Recognizing patterns in these conditions leads to the discovery of causal relationships and general laws governing change.

Sensibility vs. Understanding & Historical vs. Philosophical knowledge

Wolff's distinction between historical and philosophical knowledge is effectively drawn in parallel to the distinction he draws between the faculties of sense and understanding. The senses are the source of historical knowledge:

through the senses we acquire representations of the world around us.

The intellect is the source of philosophical knowledge, through the intellect:

we analyze the world around us so as to discover *definitions* and *explanations* of the beings and phenomena we observe around us.

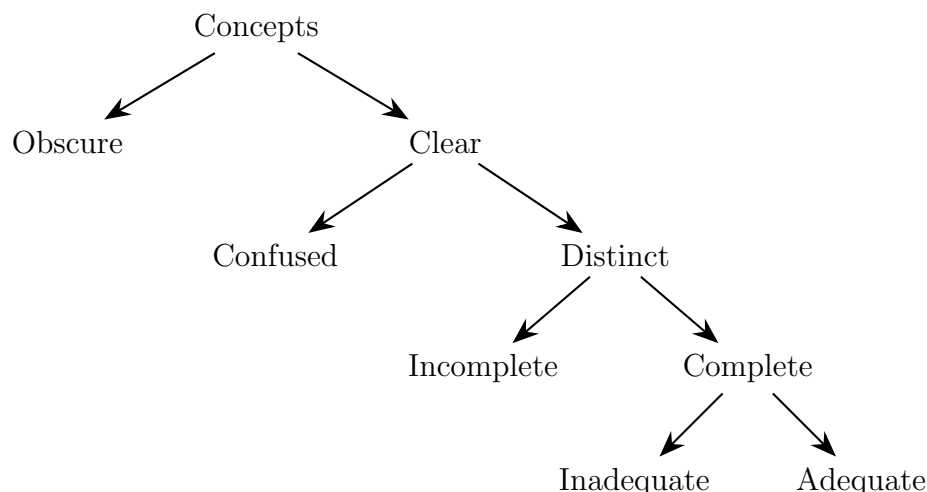
So, starting with the representations given to us by affection, we have sensory experiences of the world around us. The intellect then analyzes these representations, and in doing so, it discovers particulars qualities and objects, and then forms general concepts of these particular qualities and classes of objects, and then discovers the general laws or principles which govern the changes they undergo.

For Wolff, philosophical knowledge is acquired by a constant progression from observation to generalizations and then back to observations. We start by analyzing the particular objects we observe through our senses so as to cognize them distinctly, and

to form general concepts of what they share in common with one another; and we also analyze the phenomena originally observed through the senses to discover the general principles which govern them. Once we have obtained these general concepts and principles, we can then apply them to other phenomena so as to infer other beliefs.

Wolff's Logical Analysis of Representations:

For Wolff, all concepts are either clear or obscure, confused or distinct, complete or incomplete, adequate or inadequate (as well as intuitive and symbolic, though I ignore that here). Here is a way to map it all out:



There are two things that need to be noted right away here.

1. these properties do not pertain to concepts *simpliciter*, but only in relation to the minds that have these concepts. That is, a concept has these properties according to how well it is understood by some individual mind, i.e., one and the same type of concept might be distinct for one person and confused for another, e.g., your concept of triangle might be distinct, whereas mine is only clear.
2. Each of the properties Wolff lists come in pairs; one member of each pair is simply the negation of the other, and each pair of properties builds upon the conditions contained in the earlier stages by adding further requirements to those earlier pairs, so that they form a kind of hierarchy.

A concept is **clear** when its possessor has the ability to always correctly distinguish the objects which fall under that concept from those which do not. My concept of triangle is clear if I can always distinguish objects which are triangles from those that are not-triangles. Concepts that are not clear are **obscure**, and this obscurity may come in degrees, depending on how accurate one is in their ability to correctly recognize the objects that fall under that concept.

Clear concepts are, in turn, either confused or distinct. A clear concept is **distinct** when one can enumerate the various marks one uses to distinguish one thing from another, either explicitly through language or privately in thought. One has, for example, a distinct concept of triangularity if one can say that it is something with

three-sides, three-angles, that its interior angles equal 180 degrees, etc. A concept that is not distinct is **confused**, and this again can come in degrees, depending on *how many* marks can be enumerated by the possessor of that concept.

Distinct concepts are either complete or incomplete. A distinct concept is **complete** when its possessor can give enumerate all the marks that are both necessary and sufficient for any object to fall under that concept. Otherwise, the concept is **incomplete**. A complete concept is, in effect, an intensional definition of a concept (more below). One has, for example, a complete concept of triangularity if one can enumerate the marks that are both necessary and sufficient for something to be a triangle, e.g., a triangle is a “space contained under three straight lines” [DL. 1.27] or, a three-sided polygon.

Finally, complete concepts are either adequate or inadequate. In order for a complete concept to be **adequate**, not only must we be able to enumerate all the marks it contains, we must also have distinct concepts of each of the marks that are involved in the enumeration of that initial concept. That is, we must be able to resolve, by analysis, the other concepts contained in it into their own constituent marks. Otherwise, the concept is **inadequate**. For example, in order to have a complete concept of triangularity, one must be able to enumerate all and only those marks which are necessary and sufficient for something to be a triangle; but the marks contained in the concept triangle include the concepts of polygon and three-sided, and these concepts can be either obscure or clear, distinct or confused, complete or incomplete, depending on how well one understands the various component marks of each of these concepts. In order to have an adequate concept of triangularity, not only must the possessor of that concept be able to enumerate all the marks it contains, they must also have distinct concepts of each of the marks that are involved in the enumeration of that initial concept. One must be able, in other words, to give the marks which belong to the concept polygon, three-sidedness, etc., so that one’s possession of those concepts is also clear and distinct.

Wolff on Definition:

Wolff’s classification of concepts is closely linked to his theory of definition, following Leibniz. He distinguishes between two types of definitions:

Nominal Definition: Corresponds to the complete concept of a thing, enumerating necessary and sufficient marks for an object to fall under a concept.

Real Definition: Demonstrates that the defined concept is possible.

A nominal definition does not necessarily correspond to a possible object. For instance, the concept of “most rapid motion” can be nominally defined but is impossible due to self-contradiction. A real definition requires proving the possibility of the defined concept.

Wolff emphasizes connotative definitions by *genus* and *difference* (per genus et per differentiam). This method involves:

Identifying a **genus**, a class of entities sharing common features.

Specifying a **differentia**, a characteristic distinguishing subclasses within the genus.

Philosophy as Science:

Famously, Wolff defines philosophy as “the science of the possibles insofar as they can be” [PD 2.29]. By way of explanation, Wolff tells us that by “science” he means “the habit of demonstrating propositions... [i.e.,] of inferring conclusions by legitimate sequence from certain and immutable principles” [PD 2.30]. Elsewhere, “science” is defined as the capacity “whereby, in a manner not to be refuted, we establish our assertions on irrefragable grounds or principles.” In essence, a science is an ordered set of propositions which are capable of being established with absolute certainty. As Wolff goes on to explain, in order for any proposition to be established, or known, with absolute certainty, that proposition must either be an incontrovertible first principle, or, can be inferred from such principles by means of deductively valid arguments. In effect, a science is a set of propositions that is organized as a deductive system. This requires, first, that the terms which appear in philosophical propositions are all rigorously defined; second, that the basic principles are all certain; and third, that every proposition admitted into is ultimately derivable from basic principles by means of deductively valid inferences. The reason “philosophy” is defined as a science is because, for Wolff, all genuine knowledge requires absolute certainty; and, since absolute certainty is only possible if the propositions of philosophy are organized as a deductive system, it follows that philosophy must be a science if genuine philosophical knowledge is to be possible.

Wolff’s Ontology:

In defining philosophy as the “science of the possibles,” what Wolff thus envisions is all the various branches of human knowledge organized as a nested hierarchy of disciplines. And ontology, as the science that defines and demonstrates the concepts and principles assumed in every other branch of philosophy, is the queen of the sciences. Without ontology, absolute certainty, and hence genuine knowledge, are all impossible. And thus, for Wolff, if philosophy is to ever truly become a science, and live up to this ideal, what is needed above all else is a system of ontology whose cognitions are all absolutely necessary and certain.

In both the *Deutsche Metaphysik* and the *Ontologia*, the first principle of ontology which Wolff identifies, which he regards as the most fundamental principle of being and cognition in general, is the Law of Non-Contradiction.

Law of Non-Contradiction: It cannot occur that one and the same thing simultaneously is and is not, or, what likewise follows, if A is B, it is false, that the same A is not B, whether A is designated a being that is considered absolute, or a being that is seen to arise under a certain given condition.

Wolff begins by assuming that this principle is either true or it is not-true. That is, either nothing exists without a sufficient reason or something can exist without a

sufficient reason. Suppose we assume that something can exist without a sufficient reason, call it A. Then it follows that A exists from nothing (or, as Wolff puts it, that nothing is posited as that from which A exists). But Wolff claims this is absurd, since this is tantamount to saying "nothing exists," or, "nothing is the ground of A." But nothing cannot exist, and nothing cannot be a ground. Nothing is nothing. Since the second disjunct of our initial assumption implies a contradiction, Wolff infers by disjunctive syllogism that the first disjunct must be true. So, nothing exists without a sufficient reason. Here is another way to reconstruct Wolff's argument, substituting "sufficient reason" for "cause" (*note*: for Wolff, a "cause" is a particular type of ground). The Principle of Sufficient Reason is then the Principle of Universal Causation, or, the principle everything that begins to exist has a cause. Suppose, for reductio, that it is false that everything that begins to exist has a cause. Then there is something that begins to exist without a cause. But if something begins to exist without a cause, then nothing is the cause of this thing. But nothing cannot be a cause, since nothing cannot be anything at all. That would be a contradiction: we would then be asserting that nothing both is and isn't something. Therefore, everything that begins to exist has a cause.

1. Suppose, for reductio,
that A begins to exist without a cause.
 2. If A begins to exist without a cause, then
nothing is the cause of A. [From 1]
 3. Nothing cannot be a cause.
 4. Therefore, it is false
that A begins to exist without a cause. [From 2 & 3, MT]
 5. Therefore, everything that begins to exist
must have a cause. [From 1 & 4, Reductio]
-
- ∴ Everything that begins to exist
must have a cause. [From 1–5, Reductio]

Having identified the most fundamental principles of being and cognition, Wolff then attempts to identify and define what he thinks are the most fundamental concepts of being and cognition. For Wolff, the most fundamental concept of being is the concept of possibility. Wolff defines this concept through the PNC. Something is possible just in case it is not self-contradictory. In turn, something is impossible just in case it is self-contradictory, e.g., a round square. The reason Wolff thinks that possibility is the most fundamental concept of being and thought is because it defines the widest sphere of being. Any being must be something that is at least possible; every being is a possible being. So, possibility is the most general and fundamental characteristic common to every being. Having defined possibility, Wolff then defines the concept of a thing in terms of the concept of possibility: a thing is something possible.

Having defined a 'being' or 'thing' in terms of 'possibility', Wolff then provides a more

elaborate classification of the kinds of beings there are. Wolff endorses a substance-property ontology: every being is either an object (or substance), or it is something that characterizes an object (Wolff's preferred term for property is 'determination'). If we reflect upon every being, we will discover that they are either an object or a property of some object. Wolff wants to determine the general structure of all objects in general and all properties in general (what all objects share in common qua object, what all properties share in common qua property).

Briefly, for Wolff, a thing, or substance, is an enduring concrete particular which is the bearer of properties (or determinations). Wolff says that among the properties that belong to objects, we can distinguish between those that are essential, those that are attributes, and those that are modes. An essential property of a substance is the property (or set of properties) that a substance must have in order to be the kind of thing it is; these are the properties the substance cannot lose without ceasing to exist. For example, the essence of body is extension, for nothing can be a body unless it is extended in length, width and breadth. Other properties are derived from (or grounded in) the essential properties. Wolff calls these 'attributes. For example, every body has shape and size, as well as the capacity to undergo motion. These are all attributes of body. These attributes are not identical to the essence, since shape and size are grounded in extension, but not vice versa. The reason bodies can have shape is because they are extended in length, width and breadth; and the reason they can undergo motion, is because they are extended in space. In other words, shape, size and motion are ways of being extended. Like an 'essence, the attribute of a substance is something it cannot ever lose; this is because the attributes are all grounded in the essence, and so, if it lost the attributes, it would also have to lose its essence. Finally, the third class of properties are those a substance can lose without ceasing to be what it is. These are called 'modes. Think here of particular shapes, sizes, motions, etc.

Analysis vs. Synthesis:

Wolff asserts that philosophical inquiry originates from historical knowledge and progresses from sensory observations to general principles. However, he insists that for philosophy to be a science, knowledge must be structured as a deductive system, proceeding from general principles to particular observations.

During the early-modern period, two primary methods of inquiry were distinguished:

1. **Analytic Method:** This method begins with particular truths and works backward to uncover underlying general principles. It corresponds to the *method of discovery*.
2. **Synthetic Method:** This method starts with general principles and derives particular consequences. It aligns with the *method of proof*.

Despite their differences, both methods should yield identical results. Analysis, beginning with sensory perception, discovers general principles inductively. However, for certainty, these principles must be traced back to indubitable foundations. Wolff argues that once analysis identifies universal and necessary principles, knowledge must

be reconstructed synthetically to ensure certainty. Science, according to Wolff, is achieved when beliefs are systematically arranged in a deductive framework, akin to Descartes' approach.

Although analysis initially relies on sensory experience, Wolff maintains that fundamental concepts and principles are recognized through the *natural light of reason*, providing universal and necessary truths.

The Existence of God & Immortality of the Soul:

Wolff also gives arguments for the immortality of the soul and the existence of God from the fundamental principles of reason.

In regards to the immortality of the soul, Wolff begins by noting that the only way something can naturally go out of existence is through decomposition. Decomposition consists in the dissolution of the parts that make something up. But then it follows that the only things that can naturally go out of existence are things that are made up of parts, or, composite beings. Now, either the soul is a composite being or it is not a composite being. But, as Descartes showed, the soul is not a composite being since it is not extended. Since the soul is not a composite being, it must be simple. So, Wolff concludes that the soul is naturally immortal. If something can only go out of existence naturally through decomposition, and decomposition consists in the dissolution of the parts that make something up, then the soul cannot go out of existence naturally through decomposition, since it has no parts. The soul is thus naturally immortal.

In regards to the existence of God, Wolff gives a version of a famous argument which turns on the Principle of Sufficient reason. Wolff begins by noting that everyone will agree that at least some things exist: at the very least, the cogito demonstrates that I exist, even if nothing else exists. So, there must be at least one thing that exists, namely me. By the PSR, everything that exists must have a sufficient reason why it exists. So, there must be a sufficient reason why I exist. If there is a sufficient reason for my existence, then that reason must either be internal to me or it must be contained in something outside me. If the sufficient reason for my existence is internal to me, then existence must be a part of my essence: that is, part of what it is to be me is to exist, in the same way that part of what it is to be a triangle is to be a three-sided plane figure. But if existence is part of my essence, then I am a necessary being. However, I know I am not a necessary being, for I can easily conceive of myself existing without contradiction. So, the sufficient reason for my existence must be contained in some other being that exists outside me. But if the sufficient reason for my existence is contained in something outside me, then either this other thing must have a sufficient reason for its existence, or it must be a necessary being. We now face an infinite regress: either the sufficient reason for this being has a sufficient reason in something outside it or it is a necessary being. But according to Wolff, there cannot be an infinite regress of sufficient reasons, or, an infinite series of contingent beings. So, there must be at least one being whose existence is necessary. So, a necessary being exists...

Having gotten this far, Wolff then proceeds to argue that this being must be God. He infers this over the course of 600 **painstakingly** argued pages in his *Theologiae Naturalis*. He basically begins by asking what must the characteristics of a being be like if that being is necessary. He infers that it must be

1. eternal (since existence is part of its essence, and this being exists, it must have always existed and always will exist);
2. Is not identical to the world: since we can conceive of the world not-existing, the world is a contingent being; hence not a necessary being;
3. It is an omniscient being (...the necessary being is the being that grounds the existence of the actual world; there, however, are an infinite number of possible worlds; there must be some reason why this world exists, and not one of the other ones; if there is a reason why this world exists, and not one of the others, then there must be some set of features this world has which distinguishes it from every other possible world, and, which explain why this world is exists; if so, the necessary being must have something like an awareness of these features; so, it must be something like a conscious being; and, if there is some reason this world is actual and not the others, then the necessary being must also have something like an awareness of the features that all the other possible worlds have, and also, something like the ability to compare the features of these worlds with the features of the actual world; and so on...);
4. It is an omnipotent being (...since the necessary being actualizes this world, it must be a powerful being... etc.,). And so on.

Immanuel Kant - Inaugural Dissertation

The Argument from Incongruent Counterparts:

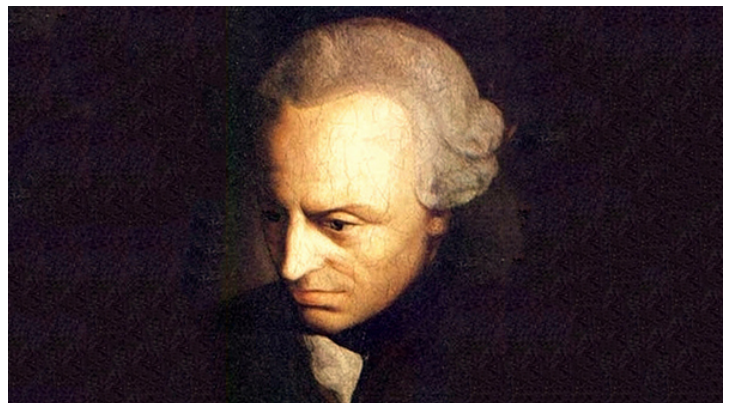
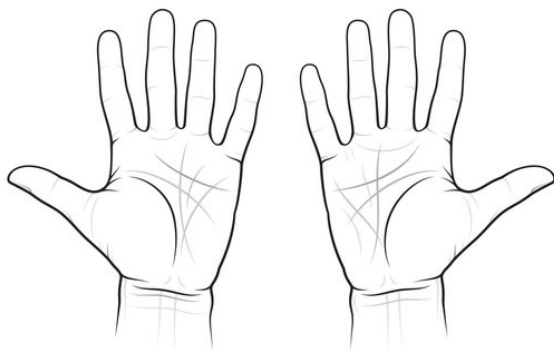
1. There is a real difference between pairs of incongruent counterparts (e.g., left and right hands).
2. If relationalism is true, then the difference between a pair of incongruent counterparts is either explained by:
 - i. the different internal relations between their parts
or
 - ii. the different external relations these bodies have to other material objects.
3. The difference between a pair of incongruent counterparts cannot be explained by the internal relations of their parts, since these may be identical:

“The right hand is similar and equal to the left, and if we look at one of them alone by itself, at the proportions and positions of its parts relatively to one another and at the magnitude of the whole, a complete description of it must also hold for the other in every respect.”
4. The difference between a pair of incongruent counterparts cannot be explained by their external relations to other material objects, since a solitary hand would still be either left or right:

“... if we conceive the first created thing to be a human hand, it is necessarily either a right or a left.”
5. The difference between incongruent counterparts cannot be explained by relationalism. [From 2—4]
6. If the difference between a pair of incongruent counterparts can be explained by the different relations they bear to absolute space, then absolute space exists.
7. The difference between a pair of incongruent counterparts can be explained by the different relations they bear to absolute space.

∴ Absolute space exists.

[From 6 & 7]



Earman's Objection:

"differences in direction are *primitive differences of bodies*."

At the very least, Earman claims that Kant has not given any reason to assume that his own position is any more plausible than this one.

Earman begins by arguing that Kant does not give an adequate explanation as to why the difference between incongruent counterparts can *only* be explained by appealing to the existence of absolute space. According to Earman, what Kant appears to be proposing is that differences in direction are grounded in some feature that belongs to the spaces occupied by a left or right hand. In other words, what makes a hand right or left is the way the parts of that hand are related to the parts of absolute space: what makes one hand left and the other right is the different configuration, or arrangement, of the parts of space each hand resides in.

According to Earman, if Kant is assuming the handedness of the parts of space occupied by a right hand is different from the handedness of the region of space occupied by the left, and that this property of space is what explains why a hand is left or right, then Kant needs some explanation as to what it is that makes these parts of space have one of these properties rather than another.

If we are willing to allow that the handedness of the parts of space is a primitive feature, then why couldn't we just make it a primitive property for left and right hands? If our hands exemplify these primitive properties of handedness, then there is no need to appeal to absolute space to explain the difference in handedness. If there is some feature of a region of space, its handedness, which determines whether an object coincident with that region of space is right or left-handed, then why can't the same feature belong to objects themselves? And if it can, then there is no need to posit the existence of absolute space to explain this feature. All we need are spatially related bodies.

Nerlich's Reformulation:

Graham Nerlich's article, *Incongruent Counterparts and the Reality of Space*, addresses the objection to the claim that the distinction between incongruent counterparts necessitates absolute space. He critiques Earman's view that handedness is a primitive relation of body, arguing instead that handedness depends on the topological properties of space.

Nerlich demonstrates that if space were four-dimensional or non-orientable, left and right hands could be transformed into one another through rigid motion without altering their internal relations. This contradicts the idea that handedness is an intrinsic property of a body. Since intrinsic properties cannot change via continuous, rigid motion, handedness must be determined by external spatial properties.

To clarify the argument, Nerlich reformulates Kant's discussion in terms of two categories:

1. **Enantiomorphic Objects:** Objects that could have an incongruent counterpart within their given space.
2. **Homomorphic Objects:** Objects that do not have an incongruent counterpart within their given space.

Whether an object is enantiomorphic or homomorphic depends on the properties of the space in which it exists. To illustrate, Nerlich presents an example of L-shaped objects, or "knees":



In a two-dimensional plane, these knees are incongruent counterparts. However, in three-dimensional space, they can be superimposed through rigid motion, making them homomorphic.

Applying this reasoning to three-dimensional objects, Nerlich argues that in an orientable three-dimensional space, a left hand cannot be transformed into a right hand via rigid motion. However, in a four-dimensional or non-orientable space, such a transformation is possible. Thus, whether a hand is enantiomorphic or homomorphic is determined by the global topology of the space it inhabits.

Nerlich then refines Kant's argument: if a solitary hand exists, it must be either enantiomorphic or homomorphic. Since its internal structure remains unchanged regardless of space, and since there are no other objects to define its handedness relationally, its property of being enantiomorphic or homomorphic must derive from the surrounding space itself. This implies that space must have independent existence.

Thus, objects possess the properties of enantiomorphy or homomorphy due to their relation to space. Since such a relation presupposes the existence of space, space itself must be absolute. Nerlich concludes that Kant was correct: the distinction between incongruent counterparts can only be explained if absolute space exists.

Securing a Method For Metaphysics:

In his *Inaugural Dissertation*, Kant seeks to establish a proper method for metaphysics. He identifies two principal methods of inquiry:

1. **Analytic Method:** This method begins with particular truths and reasons backward to uncover the general principles that ground those truths. It is often associated with empirical investigations that start from sensory experience and proceed inductively.
2. **Synthetic Method:** This method starts from general principles and deduces specific consequences. It is commonly linked to rationalist approaches that assume fundamental concepts and principles are given by the intellect and that metaphysical systems should be structured as deductive frameworks.

While these methods were traditionally considered to yield the same results when applied correctly, Kant observes that in metaphysics, the results diverge depending on whether one proceeds analytically from sensory experience or synthetically from intellectual principles. This discrepancy, he argues, highlights a fundamental conflict between sensory intuition and intellectual cognition, which must be resolved to secure metaphysics as a science.

Metaphysical Paradoxes & Their Remedies:

Kant's Terminology:

Kant generally uses "representation" as a broad term for any mental state with intentional content. "Representation" is the genus encompassing more specific mental states. In the *Critique*, Kant provides a division of the concept of representation:

The genus is **representation** in general (*repraesentatio*). Under it stands the representation with consciousness (*perceptio*). A **perception** that refers to the subject as a modification of its state is a **sensation** (*sensatio*); an objective perception is a **cognition** (*cognitio*). The latter is either an **intuition** or a **concept** (*intuitus vel conceptus*). [A319-320/B376-377]

A **representation with consciousness** is a **perception**. Perceptions are classified as subjective or objective, depending on whether their content pertains to the subject's state or to an external object. **Sensations** are subjective perceptions, encompassing feelings like pleasure and pain, as well as sensory qualities like warmth and bitterness. **Objective representations**, or **cognitions**, include **intuitions** and **concepts**.

Kant distinguishes between intuitions and concepts based on two criteria:

1. **Immediacy and singularity:** An **intuition** refers directly to a singular object.
2. **Mediacy and generality:** A **concept** represents features common to multiple objects.

Intuitions are **given immediately**, whereas concepts are **mediate representations**, related to objects through marks. In the *Critique*, Kant maintains that intuitions and concepts are mutually exclusive, but in the *Inaugural Dissertation*, he treats singular concepts as coextensive with intuitions.

Cognitions include not only singular and general concepts but also judgments and inferences:

1. A **judgment** combines two concepts (e.g., "Cats are mammals").
2. An **inference** combines judgments to form a reasoning sequence (e.g., "If cats are mammals, then they are mortal; cats are mammals; therefore, cats are mortal").

In his mature works, Kant introduces a distinction between **sensibility** and **understanding**, which he sees as differing in kind rather than degree. This opposes

Wolff's view that sensory cognition is merely confused cognition that becomes distinct through analysis.

Kant introduces this distinction in the *Inaugural Dissertation*:

Sensibility is the *receptivity* of a subject, by which its representative state is affected by objects. *Intelligence* (rationality) is the *faculty* by which a subject represents things not given through the senses. The object of sensibility is the *sensible*; the object of intelligence is the *intelligible*. In the schools of the ancients, the former was called a *phenomenon* and the latter a *noumenon*. Cognition, insofar as it follows the laws of sensibility, is *sensitive*; cognition following the laws of intelligence is *intellectual* or rational. [Ak 2:392]

Whereas Wolff saw cognition as a continuum from confused to distinct representations, Kant argues that sensibility and understanding differ fundamentally. Understanding represents objects independently of sensory input, a claim that will be examined further.

Sensory Cognition:

Kant distinguishes between matter and form in sensory representation. Matter consists of sensations, which are subjective states caused by external objects affecting the senses. Form refers to the way these sensations are structured by the mind according to an innate law.

Kant differentiates between intuitions (mental representations with intentional content) and appearances (the objects perceived through those representations). Both intuitions and appearances have matter and form. The matter of intuition is sensation, while its form is the innate structure that organizes sensations in space and time. The matter of appearances consists of the sensory qualities of objects, and their form consists of their spatiotemporal arrangement.

Crucially, Kant argues that space and time are not given through sensory experience but are actively generated by the mind. Sensations, initially existing as non-spatial and non-temporal states in the mind, are later structured into spatial and temporal representations. This means that the mind plays an essential role in shaping how we experience reality. However, this view raises a puzzle about how non-spatial sensations can be transformed into spatial representations—a problem Kant addresses later in his work.

Intellectual Cognition:

Kant outlines his theory of intellectual cognition in §5-§8, distinguishing between the two uses of the understanding: the *real* use, where concepts of things or relations are given, and the *logical* use, where concepts are subordinated and compared according to the principle of contradiction [AK 2:393].

Logical Use of the Understanding: The logical use consists of analyzing cognitions through reflection, comparison, and abstraction. These processes allow the mind to:

1. Discern features of representations through reflection.
2. Compare representations to determine similarities and differences.
3. Abstract shared characteristics to form general concepts.

This enables the mind to create increasingly general concepts by progressively abstracting from specific features.

Kant's logical use of understanding aligns with Wolff's intellect. Sensory input provides an undifferentiated manifold, which the understanding organizes into particular and general concepts. For example, the concept of "white" arises from noticing commonalities among snow, chalk, and paper while abstracting away other characteristics.

Once basic concepts are formed, further abstraction yields higher-order concepts:

1. *Man* is abstracted from individual men (e.g., Peter, James, John).
2. *Animal* is abstracted from *man* by omitting rationality.
3. *Living being* is abstracted from *animal* by omitting sentience.

At each stage, the same acts of reflection, comparison, and abstraction apply.

Real Use of the Understanding: Kant diverges from Wolff by arguing that ontology's fundamental concepts (e.g., possibility, existence, necessity, substance, cause) cannot be derived through abstraction from sensory input [?]. Instead, they originate from the *real* use of the understanding, independent of sensory cognition.

Kant argues that many fundamental concepts cannot arise from sensory experience:

1. **Substance:** Sensation provides only properties, not the substratum that underlies them. Descartes' wax example illustrates this point: though its properties change, the wax remains the same, suggesting that substance is not a sensory concept.
2. **Causation:** Hume's insights reveal that sensory experience only shows succession, not necessary connection, which is required for the concept of cause.
3. **Number:** Berkeley and Leibniz argue that number is imposed by the mind, not inherent in sensory objects, as the same object can be considered one, three, or thirty-six, depending on the context.

Since these concepts do not derive from sense, they must originate from the mind itself.

Kant asserts that while logical use analyzes given representations, real use generates fundamental ontological concepts. The logical use aligns with Wolff's intellect, but Kant introduces the real use to account for concepts that cannot be abstracted from sensory experience.

Two Notions of 'To Abstract':

In §6, Kant highlights the ambiguity of the expression "to abstract" and emphasizes the necessity of distinguishing its different uses to avoid confusion in the study of the understanding [Ak 2:394]. The key distinction lies between two notions of abstraction:

1. **To abstract from some things:** This implies disregarding certain connected elements within a concept while maintaining the concept itself. This form of abstraction is necessary for understanding pure concepts, as they "abstract from everything sensitive" but are not "abstracted from what is sensitive" [ibid]. Although concepts of understanding can be applied to sensory representations, they do not originate from them. To grasp their intrinsic content, one must abstract from sensory connections in this manner.
2. **To abstract something:** This involves forming a concept by selectively attending to one element of a whole, such as isolating the color white from a piece of snow. However, the pure concepts of the understanding cannot be abstracted in this way, as they are not derived from sensory representations [Ak 2:395].

Kant warns that failing to distinguish these senses of abstraction can lead to misconceptions about the nature of pure concepts. Though applicable to sensory experience, they contain no sensory content. To clarify this, Kant suggests referring to concepts of the understanding as "pure ideas" and empirically given concepts as "abstract concepts" [Ak 2:394].

Kant's Fundemental Critisim of Wolff:

Kant distinguishes between the real and logical use of the understanding to clarify the faculties of sensibility and understanding. In doing so, he opposes the account of Wolff and his followers, who argue that the understanding merely analyzes sensory representations to form distinct concepts. For Wolff, all concepts originate in sense perception and are made distinct through acts of reflection, comparison, and abstraction.

Kant challenges this view, insisting that sensory and intellectual cognitions should not be distinguished by their clarity or distinctness, but by their origins. He states:

"...it is of the greatest importance here to have noticed that cognitions must always be treated as sensitive cognitions, no matter how extensive the logical use of the understanding may have been in relation to them. For they are called sensitive on account of their genesis and not on account of their comparison in respect of identity or opposition" [Ak 2:393].

This position is reiterated in §7, where Kant asserts that the distinction between sensory and intellectual cognition does not depend on whether a representation is confused or distinct, but on its source. Sensory cognitions remain so regardless of their level of analysis, while intellectual cognitions belong to the understanding even if they are confused [Ak 2:395].

Kant's principal objection to Wolff's theory concerns the acquisition of metaphysical concepts. If all concepts derive from sensory experience and are refined through logical analysis, then ontology's fundamental concepts must also be obtained in this way. Wolff suggests that these concepts arise through progressively greater abstraction from sensory data. However, Kant rejects this, arguing that since these concepts lack sensory content, they cannot emerge from abstraction alone. As one abstracts further from sensible objects, one merely isolates sensory qualities rather than generating non-sensory concepts.

To illustrate, Kant considers the concept of substance. While one may represent a piece of wax as a substance, its sensory qualities (color, shape, smell) do not contain the concept of substance itself. One cannot form the concept of substance by abstracting these qualities away, as this would yield a concept of nothing rather than a concept of an enduring entity. Instead, the concept of substance arises through the real use of the understanding, which represents distinct sensory qualities as properties of a single object. The same applies to other fundamental concepts such as causation and number.

Kant concludes that the Wolffian framework cannot account for the pure concepts of ontology. If the intellect only analyzes sensory representations, then it cannot generate concepts devoid of sensory content. However, since such concepts do exist, Kant argues that there must be a real use of the understanding, distinct from mere logical analysis, which spontaneously generates these pure concepts.

Sensibility vs Intellect:

Kant distinguishes between the faculties of sensibility and intellect, though determining the precise basis for this distinction is complex. He introduces multiple criteria, some of which seem inconsistent with others. One primary distinction is between receptivity and spontaneity.

Receptivity vs. Spontaneity? Kant defines:

1. **Sensibility** as the mind's receptive capacity to be affected by external objects, making it a passive faculty.
2. **Intellect (or rationality)** as the faculty to represent objects that cannot be sensed, making it an active faculty.

The distinction suggests that different origins of mental representations necessitate two faculties: one passive (sensibility) and one active (intellect).

Matter and Form in Sensory Representation Sensory representation consists of:

1. **Matter:** The sensation received from an external object, evidencing the object's presence.
2. **Form:** The internal structuring law by which the mind organizes sensations.

Sensory matter attests to an external object's existence, while sensory form attests to a relational structure imposed by the mind.

The Problem of Space and Time Kant argues that space and time:

1. Are not passively received through sense.
2. Originate from the mind's spontaneous coordination of sensory input.
3. Serve as fundamental forms of sensory cognition, not concepts of the understanding.

This presents a problem: If the criterion for distinguishing sensibility from understanding is based on activity vs. passivity, then space and time should be classified as intellectual. However, Kant insists they belong to sensibility, implying that receptivity vs. spontaneity alone does not fully account for the distinction between these faculties.

Singularity vs. Generality? Kant's distinction between sensibility and intellect is not merely about their mode of production but rather about fundamental differences in the nature of their representations. Initially, one might assume that this distinction is based on whether representations are singular or general. However, Kant argues that generality alone does not make a representation intellectual.

Kant refutes the Wolffian claim that generality defines intellectual representations. He asserts that empirical concepts remain sensory even when abstracted to higher levels of generality. Logical analysis can make sensory representations more general, but it does not transform them into intellectual representations.

Abstract vs. Concrete Intentional Content: A more promising distinction lies in the nature of intentional content:

Intellectual concepts are *abstract*.

Sensory representations are *concrete*.

Kant illustrates this distinction by showing that while the intellect represents composition abstractly, sensibility represents it concretely through intuition.

Kant argues that representations of time and space are concrete rather than abstract. Unlike pure intellectual concepts, time and space possess features that can only be grasped through acquaintance. For example:

The properties of space (e.g., three dimensions, straight lines between points) cannot be derived from universal concepts but must be apprehended through singular intuition.

The mereological structure of time and space differs from that of intellectual concepts: time is not composed of discrete moments, nor is space composed of simple points.

These arguments show that time and space are fundamentally different from pure concepts of the intellect.

Kant ultimately bases the distinction between sense and intellect on whether the intentional content of a representation is abstract or concrete. This distinction resolves prior difficulties: a representation may be general or actively generated (e.g., time and space) and still be sensory if its content is necessarily concrete. Thus, the divide

between sensibility and intellect is rooted in an irreducible difference in intentional content rather than in generality, singularity, or mode of generation.

The Non-Empirical Origin of the Representation of Time:

Kant, in §14.1 of the *Inaugural Dissertation*, explicitly denies that our representation of time is derived from sensory experience. He argues that the idea of time is presupposed by the senses, enabling the representation of simultaneity and succession. Any attempt to derive time from experience results in circularity, as the very ability to represent succession and simultaneity already assumes an understanding of time.

Kant's terminology varies: he refers to both the *idea* (*idea*) and *concept* (*conceptus*) of time. In the *Critique*, he further introduces the term *representation* (*Vorstellung*), alongside *concept* (*Begriff*). To clarify, the *concept* of time refers to time considered abstractly, independent of events, akin to Leibniz's "abstract time." The *representation* of time, by contrast, refers to concrete temporal relations between things, akin to "concrete time."

Kant opposes the Leibnizian view that time is an empirical concept formed by analyzing sensory representations. According to this view, the mind abstracts the concept of time by recognizing relations of succession and simultaneity in experience. However, Kant argues that merely experiencing a sequence of representations does not generate the concept of succession. A succession of representations is distinct from a *representation of succession*, since without memory and synthesis, one would not recognize a sequence as such.

To represent succession, the mind must actively *reproduce* past representations while recognizing them as distinct from the present. Additionally, the mind must *localize* these representations at different moments in time. Recognizing an event as occurring "after" another requires an antecedent grasp of distinct temporal locations. Since this act of localization presupposes the concept of time, the latter cannot be derived from experience but must already be present in the mind.

Thus, the representation of time is not empirical. It is neither directly sensed nor abstracted from sensory experience. While sensory experience provides the occasion for representing time, it does not constitute its origin. Instead, time must stem from the inherent cognitive structure of the mind, which actively organizes sensations temporally rather than passively receiving them.

The Non-Empirical Origin of the Representation of Space:

In §15.A, Kant argues that the concept of space is not derived from experience but is instead a necessary precondition for perceiving objects as external. He states:

The concept of space is not abstracted from outer sensations. For I may only conceive of something as placed outside me by representing it as in a place which is different from the place in which I am myself; and I may

only conceive of things outside one another by locating them in different places in space. The possibility, therefore, of outer perceptions as such presupposes the concept of space; it does not create it. Likewise, too, things which are in space affect the senses, but space itself cannot be derived from the senses. [Ak 2:402]

Kant's argument suggests that if space were an empirical concept, it would have to be acquired through experience of external objects. However, such representation presupposes the prior concept of space, making it impossible for space itself to be derived from experience.

This argument is primarily directed against the Leibnizian account, which posits that the mind forms a concept of space through experience. Kant, by contrast, claims that external representation is only possible if the concept of space is already in place.

The Role of Sensation and the Forms of Intuition

Kant holds that the mind actively organizes sensory input according to innate spatial and temporal structures. Sensations themselves, before coordination, are non-spatial; they exist merely as subjective mental states. When combined with the forms of intuition, these sensations are projected outward, becoming spatially and temporally structured representations of appearances.

However, Kant does not explicitly argue for the claim that sensations are originally non-spatial, an assumption that has faced significant criticism. Kemp Smith, for instance, argues that Kant presupposes this without justification:

The proof that the representation of space is non-empirical may therefore be explicitly stated as follows. As sensations are non-spatial and differ only qualitatively, the representation of space must have been added to them. And not being supplied by the given sensations, it must, as the only alternative, have been contributed by the mind....

Critics argue that this assumption weakens Kant's position, as it remains plausible that spatial representation originates from sensory experience itself, as suggested by the Leibnizians.

Historical Context and Malebranche's Influence

Kant was not alone in assuming that sensations are non-spatial; predecessors such as Malebranche also supported this view. Malebranche provides arguments for core theses that align with Kant's empirical cognition framework. Although Kant's theory differs significantly from Malebranche's, their shared assumptions help contextualize his stance on the non-empirical origin of space.

The Non-Spatiality of Sensation:

Malebranche adopts a Cartesian dualist framework, distinguishing between mind and body as distinct substances. The body is characterized by extension (length, width,

and breadth), while the mind is defined by thought and its various modes (e.g., doubting, willing, imagining, etc.). Sensory perceptions, as mental states, cannot possess physical attributes like shape or size.

Sensations and their Occasions: Sensations, including colors, smells, and tastes, are modifications of the mind and cannot be identified with material modes. However, they correlate with bodily motions triggered by external stimuli. The body's particles, upon interaction with sense organs, induce motions that lead to sensations. These correlations are dictated by a *natural correlation* between physical stimuli and mental states.

Physiological Basis of Sensation

Malebranche follows Descartes in describing sensation physiology: sensory stimuli disturb nerve endings, causing vibrations that travel to the brain. These vibrations ultimately lead to sensory experiences in the mind.

Four Components of Sensation: Malebranche distinguishes four elements in sensation:

1. The action of an external body on our own.
2. The agitation of nerves transmitting signals to the brain.
3. The sensation itself, existing in the mind.
4. The natural judgment by which the mind projects the sensation onto an external object or body part.

Natural judgments thus play a crucial role in giving sensations an external reference.

Role of Natural Judgments in Spatial Perception Natural judgments modify retinal images to construct accurate visual representations. The mind, through *natural geometry*, corrects defects in retinal images to perceive objects as they are. For example, perceived size and shape are adjusted based on distance cues and retinal disparities.

Sensory Qualities and Their Projection Malebranche follows the distinction between primary (e.g., extension, motion) and secondary qualities (e.g., color, taste). Secondary qualities do not inhere in objects but are sensations projected outward by natural judgments. This projection explains why we perceive colors and temperatures as existing in external objects, despite their being modifications of the mind.

Non-Spatial Nature of Sensations Malebranche argues that sensations, considered independently, lack spatial attributes. He supports this claim with two arguments:

1. The metaphysical argument: Since sensations are modes of an immaterial mind, they cannot possess extension or shape.
2. The introspective argument: Careful reflection reveals that sensations (e.g., pain, pleasure) do not exhibit spatial characteristics.

Cases of phantom limb pain illustrate how sensations appear in space despite not being located there, further supporting their non-spatial nature.

Malebranche maintains that natural judgments are responsible for localizing sensations in space and attributing them to external objects. Without these judgments, sensations would remain purely mental states without spatial reference. This account reconciles Cartesian dualism with perceptual experience by distinguishing between sensation as a mode of thought and the judgment that projects it onto the external world.

Kant's Account of Localization:

Kant argues that the representation of space does not originate empirically from outer sensations. Instead, it is a necessary precondition for the possibility of perceiving objects as external to oneself and to one another.

The Concept of Space is Not Abstracted from Sensation

Kant states:

The concept of space is not abstracted from outer sensations. For I may only conceive of something as placed outside me by representing it as in a place which is different from the place in which I am myself; and I may only conceive of things outside one another by locating them in different places in space. The possibility, therefore, of outer perceptions as such presupposes the concept of space; it does not create it. Likewise, too, things which are in space affect the senses, but space itself cannot be derived from the senses. [Ak 2:402]

This implies that one cannot derive space from representations of external objects since these very representations presuppose a prior representation of space.

Dreams of a Spirit-Seer Kant further elaborates on space perception:

...in using our outer senses, what we find is that, in addition to the clarity with which the objects are represented, we include the place of these objects in our sensations. ... This being the case, it is highly probable that our soul, in its representation, transposes the object of sensation, locating it at the point at which the various lines, which are caused by the object and which indicate the direction of the impression, converge, when they are extended. [Ak 2:345]

Kant suggests that the mind determines an object's spatial location by projecting sensory impressions outward along their originating paths.

The Act of Localization as Necessary for Outer Perception

Kant argues that outer perception is made possible through an act of localization:

1. Sensations alone are not spatial; they are localized through an innate act of the mind.
2. The mind projects sensations outward, correlating them with their external sources.

3. This process applies not only to vision but also to hearing, touch, taste, and smell.

Kant maintains that space is presupposed in all outer sensation since one can only conceive of things outside oneself by representing them in distinct locations.

The Innate Representation of Space Kant describes how the mind constructs spatial representation:

1. Sensory impressions travel through nerves to the brain, where the mind localizes them by tracing their paths backward.
2. In vision, light rays striking the retina provide the mind with directional cues, allowing it to represent the object's spatial position.
3. Similarly, auditory sensations are localized by extending the direction of sound vibrations.
4. In touch, taste, and smell, sensations are projected onto their respective organs, forming a spatial representation of the body itself.

This process explains how the mind represents objects as extended in space, even though raw sensory data is originally non-spatial.

Kant's Argument for the Non-Empirical Origin of Space Kant contrasts his view with Leibnizian empiricism:

1. Leibnizians claim that space is abstracted from sensory experiences of external objects.
2. Kant argues that sensations, as they are first given, are non-spatial and require mental coordination to appear in space.
3. Since spatial representation is required for perceiving objects as external, space itself cannot be derived from experience.

Thus, Kant concludes that the representation of space arises from the mind's innate constitution rather than from sensory abstraction.

Kant's argument establishes that space is not an empirical concept but a necessary condition for experience. The mind's innate faculty projects sensations into spatial locations, making outer perception possible. Without this capacity, the mind could not represent objects as external or as distinct from one another.

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