

Notes for a Basic Ontology Toolkit (January 2017 version)

1. **Ontology** is the study of what kinds of things there are. “Onto-” comes from “ousia,” the Greek word for Being. “Ousia” is often translated as “**substance**.”
2. We typically ask: what **kinds** of things (beings) are there, and what **relations** are there between these things?
3. We can distinguish between kinds of things (**types**) and particular individual things (**tokens**). In the notes that follow, I will use “particular” and “token” as synonyms. Also, I will use upper case **A, B, C...** for types and lower case **a, b, c...** for tokens.
4. **Tokens** are often described in several ways. One distinction includes:
 - **Object or state.** If we can describe a thing statically (if we do not need to refer to its activity over time) we tend to describe it as an object or as a state or property.
 - **Event.** If a thing must happen in time (that is, if a proper description requires that one refer to change or a process that happens over time), we describe it as an event or process.
5. Tokens can also be described in terms of:
 - Their **particular parts** (if any) and the causal relations of these parts, or **properties**.
 - The **functional role** that the token plays.

We can also claim that a thing *is* its functional role. In that case, a functional description is not only possible but it is the correct fundamental ontological description.

Whether a functional role description can always be replaced with some causal description is controversial. Those who hold that a functional description (of x) can be replaced by an object and causal description (of x) will typically then hold that functional role descriptions are merely convenient (that is, they are not describing the actual fundamental nature of the thing).
6. Usually, we assume that types are a class or collection of tokens that share some properties that make them of that type. These properties are sometimes called the **essential properties** of the type. An essential property is a property that a kind must have in order to be that kind. Note that functionalists claim that for some kinds of things their essential properties are functional roles. A property that is not essential used to be called an “**accident**”.

Thus, presumably, it is an essential property of a square that it has four sides, but an accidental property that it be one meter on a side (it could still be a square were it bigger or smaller). It is an essential property of a dog that it is an animal, and an accidental property that this dog is black. Descartes argued that it is *not* an essential property of a mind to have a body, and therefore concluded the mind is not the same thing as the body.

7. **Relations** between tokens or between types can be described in many ways.
 - a. **Identity.** **A=B.**

Identity is often taken as a primitive, but one possible definition of identity for tokens is given by Leibniz’s Law: $\forall x \forall y (x=y \leftrightarrow \forall F (Fx \leftrightarrow Fy))$. (Read this as saying, x and y are the same thing if and only if they have all and only the same properties.)

It is not easy to see what would constitute a similar identity condition for kinds. Here’s one attempt: $\forall F \forall G (F=G \leftrightarrow \Box \forall x (Fx \leftrightarrow Gx))$. (Read this as saying, F and G are of the same type if and only if necessarily all and only the Fs are Gs.) That perhaps doesn’t capture how we usually argue that two types are the same; typically we argue the properties have the same properties. Perhaps then we need properties of properties; let a variable for these be Φ . Then we have: $\forall F \forall G (F=G \leftrightarrow \Box \forall \Phi (\Phi F \leftrightarrow \Phi G))$.
 - b. **Necessity.** **(P→Q).** Q is necessary for P.
 - c. **Sufficiency.** **(P→Q).** P is sufficient for Q.
 - d. **Independence.** If A can exist without B, and B can exist without A, then they are independent. (This is how Descartes distinguishes substances.)

- e. **Supervenience.** **A** supervenes on **B** if and only if there can be no change in **A** unless there is a change in **B**. (But the definition allows there could be a change in **B** without there being a change in **A**.)
- f. **Constitution.** **A** is made out of **B**.
8. A minimal notion of a **theory** is that it is a collection of sentences used to describe or predict a kind of phenomenon. The sentences are chosen for their generality and are meant to be as few and compact as possible. The strongest standard is that a theory allows for the prediction of a kind of phenomenon. Theory **T** predicts event kind **A**, when for **T** and some description **D**, $((T \ \& \ D) \rightarrow A)$. In such a case some philosophers will also say that “theory **T** entails event **A**” (although in fact only $(T \ \& \ D)$ together entail **A**).
9. The term “**reduction**” gets used in various ways. The most common is that type **A** is reduced to type **B**, if **A** is of type **B**. (Unfortunately, some people also sometimes call the following relations “reduction”: supervenience, constitution, and entailment.)
10. We can make a distinction between the items referred to in a theory (sometimes called the “ontology of the theory”), and the mathematics or logic of the theory. Because of this, we can distinguish two ways in which theories can change. You can **add to their ontology** by adding new kinds of things; or you can **add new mathematics** (such as new descriptions of things already recognized by the theory).
11. “**Physicalism** (about x)” is the word used now for what was once called “materialism (about x).” It is the view that everything (of type x) is physical. It is very difficult to define “physical,” so it is hard to make physicalism a rigorous theory. Nonetheless, most of the theories we will review are physicalist theories about mind. Note that one can be a physicalist about some things but not about others. For example, one could be a physicalist about memory formation, but deny physicalism about consciousness.
12. **Non-reductive physicalism** (about x) is the view that phenomena (of type x) are physical, but that we cannot reduce them to any other physical tokens or types. Philosophers have done a poor job of explaining how this can be, but I believe that there are at least two coherent possibilities:
- Some **new kind of things** must be added to our theories, but these things are physical. Imagine we discovered a new particle: then we would add descriptions of that kind of particle to our physical theories, but we would not say that we added something non-physical to our theories.
 - We need not add any new objects or kinds to our theory, but we must add **additional theory** or mathematics in order to explain the phenomenon.
13. Some philosophers distinguish between type reduction and **token reduction**. Typically, to say that token **a** is reducible to token **b** would mean that $a=b$. This difference is really only of interest for the theory of anomalous monism.
- Anomalous monism** is the view held by Donald Davidson. Suppose that **A** are mental events, and **B** are brain events, and **a** is a particular mental event of type **A**, and **b** is a particular brain event of type **B**. Davidson holds that every particular mental event is a particular brain event, but that no mental event kind is a brain event kind. So for each particular mental event **a**, there is a particular physical event **b** such that $a=b$; but it is not the case that there is a kind of mental event **A** and a kind of physical event **B** such that $A=B$. This is widely cited as a non-reductive physicalist theory, but since I do not consider it a coherent theory I have not listed it as an interpretation for non-reductive physicalism (in 12 above).
14. One radical possibility is that we are very wrong about a phenomenon. We might describe a phenomenon in some way that already supposes some implicit theory about what is happening. In such a case, it is possible that the right answer to the question, “What kind of thing is this?” is that there is no such thing. This position is called **eliminativism**.
- An example (used by the philosopher Richard Rorty) is possession. There is a phenomenon of mental illness, but some people used to describe it as demon possession. In such a case, it is best not to try to explain demon possession, but rather to say, there is no such thing as demon possession. This is eliminativism with respect to demon possession.