Phil. 169: Nozick's *Philosophical Explanations*
Feb. 28, 2019

Meeting 4: Chapter 2 (Nozick on Why There Is Something Rather than Nothing)

I. The Question

Our focus: "Why is there something rather than nothing?"

Why this question appears impossible to answer:

> "Any factor introduced to explain why there is something will itself be part of the something to be explained, so it (or anything utilizing it) could not explain all of the something—it could not explain why there is *anything* at all" (p. 115).

Nozick sketches several possible answers, not because he believes any of them with confidence, but rather in order to loosen our sense that answering the question is impossible.

He grants that all of his proposals are strange, but he thinks this is to be expected: the question "cuts so deep" that "any approach that stands a chance of yielding an answer will look extremely weird" (p. 116).

> (There was a recent kerfuffle over this question in the Sunday Book Review section of *The New York Times*. Physicist Lawrence Krauss claimed in his book *A Universe from Nothing* that relativistic quantum field theory explains why there is something rather than nothing. In his review of the book, philosopher David Albert accused Krauss of being dead wrong, because relativistic quantum field theory cannot explain why there are relativistic quantum fields in the first place.)

Nozick sees the question "Why is there something rather than nothing?" as closely aligned with the question "Is it possible for everything to be explained?" and some of his answers to the former question are more directly answers to the latter.

> But on the surface the exact relation between these two questions is not transparent.
>
> The first seems to be asking for an explanation of the truth "There is something" (in contrast to the falsehood "There is nothing"), whereas the second seems to be asking whether it is possible to explain all truths, including that one.
>
> Nevertheless, both questions seem deep and worth asking.

Let E be the relation *correctly explains*, or *is a (or the) correct explanation of*.

Some assumptions Nozick makes about E:

- Sometimes its relata are *truths* or *facts* (i.e. items in the world), and sometimes its relata are *true sentences* (i.e. pieces of language).

  > I think it is better to take its relata to be facts. I will use '[p]' as shorthand for 'the fact that p'.

- He (at least initially) takes E to be a *strict partial ordering*, so that the following all hold:

  > *irreflexivity*: There is no [p] such that [p] explains [p].
  >
  > *asymmetry*: There are no [p] and [q] such that: [p] explains [q], and [q] explains [p].
  >
  > *transitivity*: For all [p], [q], and [r], if [p] explains [q], and [q] explains [r], then [p] explains [r].

- Nozick assumes E to be a *one–one relation*, so that we always have a single fact explaining a given fact.

  > I think it is better to take E to be a *many–one relation*, so that sometimes several facts together explain a given fact. (For example, [p] and [q] together presumably explain [p & q].)

- Nozick takes Hempel's deductive-nomological (DN) and inductive-statistical (IS) models of explanation to provide "necessary but not sufficient conditions for two types of explanation" (p. 116).

  According to the DN model, we have a good explanation of [G*a*] when it can be deduced from the following premises: [F*a*] and a law according to which everything which is F is G.

  A standard counterexample to the DN model: it allows [The flagpole is 10 feet tall] to be explained by [The flagpole's shadow is 10 feet long], [The sun's angle is 45°], and laws about the rectilinear propagation of light.

  According to the IS model, we have a good explanation of [G*a*] when it follows from [F*a*] and a law that [G*a*] is very probable.

Given Nozick's assumption that E is a strict partial ordering, there are two main possibilities for how the set of truths is structured (a third possibility: sometimes we have one of these structures and sometimes the other):

- *explanatory infinitism*: There are infinite, non-repeating explanatory chains.
- *explanatory foundationalism*: There are some truths that no further truth stands in E to.

  variant #1: Such unexplained truths are necessarily true.

  variant #2: Such unexplained truths are brute facts (and hence seemingly arbitrary).

  I found this way of dividing up the unexplained truths confusing. First, some necessary truths can be explained in terms of other necessary truths, and the unexplained necessary truths seem just as brute as the unexplained contingent truths. Second, we need to keep separate the issue of what (if anything) explains [*p*] from the issue of what (if anything) explains [Necessarily, *p*].

II. First Possible Answer: Self-Subsumption

Nozick's first proposal for how everything might be explained involves giving up E's irreflexivity (and hence its asymmetry as well, since asymmetry entails irreflexivity).

It is easiest to see how this proposal works if we assume that the DN model provides both necessary and sufficient conditions for a type of explanation.

Then explanations of that sort will always appeal, in part, to a law.

Some of these laws will be more fundamental than others.

Now suppose there is a law that presents sufficient conditions for a fundamental law holding true.

Let "*p*" be a statement of this law, and let [*p*] be the law itself.

"*p*" = "For all statements '*s*', if '*s*' is a lawlike statement having characteristics C, then '*s*' is true."

Suppose "*p*" itself also has characteristics C. Then the following deduction holds:

p:	For all statements "*s*", if "*s*" is a lawlike statement having characteristics C, then "*s*" is true.
q:	"*p*" is a lawlike statement with characteristics C.
r:	"*p*" is true.

If we assume that ["*p*" is true] and [*p*] are the same fact, then it follows on the DN model that [*p*] is explained by [*p*] and [*q*] together.

(If you don't like that assumption, you can replace "then '*s*' is true" with "then *s*" in the formulation of "*p*" above, and alter the conclusion of the deduction accordingly.)

Nozick calls this sort of self-explanation *explanatory self-subsumption*: [*p*] is a law that applies to itself, and hence explains its own truth.

Nozick thinks self-subsumption reduces the arbitrariness and brute-fact quality of the endmost laws somewhat, but it doesn't reduce that quality altogether.

> *a worry*: On the above proposal, [*p*] is explained by [*p*] and [*q*] together. But what explains [*q*]?
>
> *an alternative*: Instead of *self*-subsumption, we could also have *mutual* subsumption: maybe law L_1 falls under and hence is explained by law L_2, while L_2 falls under and hence is explained by L_1.

III. Second Possible Answer: The Nothingness Force

In general, an *inegalitarian theory* partitions states of some type into two classes (p. 121):

i. a class of N states that are natural/privileged and not in need of explanation;

ii. a class of states that are to be explained as deviations from N, resulting from the action of forces F that cause (or, more generally, bring about) movement from the natural state.

Nozick's second proposal: a *fundamental inegalitarian theory of everything* on which nothingness is the natural state.

> Nozick thinks our very question almost seems to presuppose a fundamental theory of this sort:
>
> > "To ask 'why is there something rather than nothing?' assumes that nothing(ness) is the natural state that does not need to be explained, while deviations or divergences from nothingness have to be explained by the introduction of special causal factors" (p. 122).
>
> But I'm not sure I agree that our question makes such an assumption. If I ask, "Why did the emitted particle go through the right slit rather than the left one?" I don't see why it's being presupposed that the contrasting outcome would be any less in need of explanation if instead it had occurred.

Here are the more specific details of Nozick's proposal:

a. nothingness is the natural state N;

b. the forces F are contained in N (since otherwise that there are any forces F at all would have to be explained, in part, by the action of those very forces);

c. the nothingness force usually pulls things toward nonexistence when it acts on them;

d. but when the nothingness force acts on itself, it sucks nothingness into nothingness and produces something.

Some worries Nozick has about this proposal:

- It leaves [N is the natural state] and [Forces F are what produces deviations from N] unexplained.

  > But I don't see why this is necessarily so. Since [Nothingness is the natural state] is not itself part of or contained in nothingness, why can't we claim that this fact is explained by a deviation from N via F?

- It is difficult to explain how the nothingness force works without making arbitrary assumptions. (Why a given curve, or a given starting place, or a given scale for the axes, in the graph in Figure 2.1?)

- It is unclear why nothing rather than something is the natural state. (Here Nozick cites an argument due to his twelve-year-old daughter that I confess to having trouble understanding; see p. 125.)

- It is unclear why the correct fundamental theory needs to have an inegalitarian structure.

Another natural worry:

- Any features that we might attribute to nothingness (that it contains a nothingness force, that this force can be exerted to different degrees, that there might be different amounts of nothingness remaining, etc.) all seem incompatible with this really being a state of *nothingness*.

IV. Third Possible Answer: The Principle of Indifference

Nozick's third proposal attempts to offer an *egalitarian* answer to our question by appealing to *the principle of indifference* in probability theory:

- Let w_1, w_2, . . . be all the possible ways for there to be something, and let w_0 be the possibility that there is nothing.
- Since we have no reason to think one of these possibilities is more probable than any other, we apply the principle of indifference and conclude that each has the same probability of obtaining.
- Let n be the number of possibilities in which there is something.
- Then the probability that there is something is $n/(n+1)$ if n is finite and 1 if n is infinite.
- So, given Hempel's IS model, we have explained why there is something rather than nothing.

Nozick's first worry: What if the proper way of partitioning alternatives into (what will be treated as equiprobable) states is a two-member partition $\{w_0, \sim w_0\}$? Then the probability that there is something is 0.5.

> His reply involves assigning probabilities for each first-order partition, probabilities for each of those second-order partitions, and so on, which he argues results in the probability of w_0 not obtaining tending toward 1 as we continue to go up levels (see n. 9 on pp. 669-670).
>
> I don't understand, though, the notion of probability being used when he says, for example, that according to the worst-case second-order partition, the possibility that w_0 and $\sim w_0$ each have a probability 0.5 itself has a probability 0.5.

Nozick's second worry: This model is not truly egalitarian, for it assumes "that the natural state for a possibility is nonrealization, and that a possibility's being realized has to be explained by special factors" (p. 128).

V. Fourth Possible Answer: Fecundity

Nozick's fourth proposal is a thoroughgoing egalitarian theory according to which the following holds:

> *the fecundity assumption*: Every possibility—including the possibility that there is nothing—exists in its own independent noninteracting realm.

So, on this proposal, the question "Why is there something rather than nothing?" contains a false presupposition, since both something and nothing obtain in their own independent realms.

- *a natural worry*: Isn't the fecundity assumption itself a possibility to be explained, so that we can now ask, "Why does nothing as well as each possible way of there being something obtain, rather than nothing being the only possibility that obtains?"

  Nozick's reply: Let X be the situation (possibility?) in which every possibility obtains, and let Z be a situation in which all but two of those possibilities obtain and the remaining two do not obtain.

  X exists in realm R_1, and Z exists in non-interacting realm R_2.

  Let $R_1 \cup R_2$ contain whatever is in either. (Whatever possibility? Whatever fact? And why is $R_1 \cup R_2$ itself a realm?) Then $R_1 \cup R_2 = R_1 \neq R_2$. In particular, Z does not obtain in $R_1 \cup R_2$.

  > But what exactly does this show? And why can't we now ask, "Why is something a possibility in our realm?"

- *Nozick's other worry* (p. 132): According to the fecundity assumption, there exists a world with 4,234 independent explanatory factors and laws, so it is just an accident that we inhabit a world with a high degree of explanatory unity.

  This leads Nozick to consider ways of restricting the range of noninteracting possibilities that all obtain. But to do so is to move from an egalitarian to an inegalitarian theory.