I. **PRELIMINARIES**

1. **QUESTIONS OF IDENTITY**

   i. Under what conditions is one thing identical to another? To itself?
   
   ii. In virtue of what is one thing identical to another? In virtue of what is one thing identical to itself?

2. **KINDS OF IDENTITY**

   i. *Numerical identity*: X is numerically identical to Y just in case x is one and the same thing as Y.
   
   ii. *Qualitative identity*: X is qualitatively identical to Y just in case x is perfectly similar to Y (or just in case X and Y are exactly alike).

   See Jim Pryor’s helpful discussion [here](#). He also there discusses how a certain understanding of identity helps to generate questions involving objects that have changed.

3. In a certain way, how we answer questions of identity will depend on what kind of thing we’re considering. Here, we will focus on **composite objects**, that is, objects composed of parts. It might be helpful, in fact, to begin by considering **artefacts**, that is, composite objects that are the products of deliberate human design (e.g., tables, chairs, ships).

4. We begin with a certain understanding of, or with certain natural assumptions about, things like artefacts and other composite objects: “Just as we find it perfectly natural to say that one and the same thing can change its qualities over time, we find it perfectly natural to say that one and the same thing can change its *parts* over time” (p. 24). Yet we also find that it is “relatively easy to construct certain puzzle cases which seem to threaten the intelligibility of our ordinary ways of talking about [these] matters” (p. 25).
II. THE PUZZLE OF THE SHIP OF THESEUS

1. PART I: “According to legend, when the hero Theseus died, his famous ship was preserved in the harbour at Athens for many years. In the course of time, parts of it began to decay and these were replaced by new parts of the same form and materials as the originals. Eventually, none of the original parts remained, posing the question of whether the ship in the harbour was still the same ship as the ship that Theseus had sailed in—that is, whether it was numerically identical with the original ship of Theseus” (p. 25).

   i. Maybe we should say in response that a composite object, in this case the ship of Theseus, can survive a change in – the removal or replacement of – only a certain percentage of its parts. PROBLEM: Any percentage we choose will seem arbitrary and will at some point, if even small changes continue to be made, violate the transitivity of identity, according to which if X is identical to Y and Y is identical to Z, then X is identical to Z. Suppose, for example, that we stipulate that up to 5% of a ship’s parts, but no more, can be replaced without the ship’s losing its identity. We could then replace 4% of ship X₁’s parts in such a way that the resulting ship, X₂, will be identical to X₁. Moreover, we can then replace 4% of X₂’s parts in such a way that the resulting ship, X₃, will be identical to X₂. Thus, given the transitivity of identity, X₁ is identical to X₃. But this now violates our stipulation that a ship loses its identity if we replace more that 5% of its parts.

2. PART II: “Suppose that, as the original parts of Theseus’ ship are gradually replaced by new ones, those original parts are carefully removed to a warehouse and stored there, until the warehouse eventually contains all of the original parts, while all the replacement parts belong to the ship in the harbour (the renovated ship, as we have decided to call it). And then suppose that someone puts all of the original parts together again to form a ship which is exactly like the original ship of Theseus: call this ship the reconstructed ship. ... Our problem, then, is this. In the case in which both renovation and reconstruction occur, we have, at a later time, two ships, the renovated ship in the harbour and the reconstructed ship in the warehouse, both of which seem to have a good claim to be identical with the original ship of Theseus” (pp. 26-7).
III. **SOLUTIONS TO THE PUZZLE**

1. Both the reconstructed ship and the renovated ship are (numerically identical to) the ship of Theseus

   i. **PROBLEM:** This runs afoul of the transitivity of identity, which says that if X is identical to Y and Y is identical to Z, then X is identical to Z. Applied to this solution, the transitivity of identity says this: if the renovated ship is identical to the ship of Theseus and the ship of Theseus is identical to the reconstructed ship, then the renovated ship is identical to the reconstructed ship. Yet this is clearly false, for the renovated ship is *not* identical to the reconstructed ship. For one thing, those ships exist in different places, one in the harbor, the other in the warehouse.

   ii. **PROBLEM:** This violates the common sense principle which says that if X is numerically identical to Y, then X and Y cannot be in two different places at once.

   iii. Maybe we needn’t say, however, that there was in the beginning *only one* ship of Theseus, which then became two during the process of renovation and reconstruction. Maybe we can say that there were *two* ships of Theseus *all along*, and hence even in the beginning. Gradually, as renovation and reconstruction occurred, these two ships, which coincided in the beginning, were separated. **PROBLEM:** This violates the common sense principle which says that if X is numerically distinct from Y, then X and Y cannot occupy the same space at the same time (i.e., X and Y cannot coincide).


2. Neither the reconstructed ship nor the renovated ship is (numerically identical to) the ship of Theseus, perhaps because *any change whatsoever in a thing’s parts* constitutes a loss of identity.

   i. **PROBLEM:** This violates the common sense principle according to which an object can remain (numerically) identical to itself *even after it undergoes certain changes* (e.g., removal or replacement of some of its parts, or even disassembly and reassembly). For example, my car after its steering wheel has been replaced is one and the same car as
– i.e., is numerically identical to – my car before its steering wheel was replaced.


3. The *renovated* ship, but not the reconstructed ship, is the ship of Theseus

i. Lowe gives an argument for this solution (see pp. 30-33). The argument proceeds as follows:

1. At time $t_0$, each and every part of the ship in the harbor is a part of SoT.
2. Suppose that at time $t_1$ we remove a part of the ship in the harbor. (We then replace the removed part with a new part. Call the resulting ship $\text{REN}$.)
3. The removed part either is or is not a part of SoT. (If it isn’t, then it’s either a part of no ship at all or a part of some other ship.)
4. If the removed part is a part of SoT, then some part of SoT—namely, the next board to be removed—is a part both of $\text{REN}$ and of SoT, which will be at some point be scattered between the harbor and the warehouse.
5. It seems, however, that $\text{REN}$ and SoT cannot, at the same time, share half of their parts.
6. Thus, the removed parts are not still parts of SoT, but are rather parts of no ship at all (at least while they’re lying in the warehouse).
7. SoT still exists.
8. Thus, $\text{REN}$ is identical to SoT. $\text{RECON}$ is simply a brand new ship built out of stuff that belongs to no ship at all.

ii. **Problem:** If we adopt this solution, it seems that we’re forced to say that whether $\text{RECON}$ is identical to SoT concerns not only those two ships but also $\text{REN}$.

1. We do not renovate the ship in the harbor
   a. We slowly disassemble the ship in the harbor *without* replacing the removed parts with new parts.
b. Then, once we’ve removed each of the parts and transported it to the warehouse, we there reassemble the ship.

c. It seems that this is identical to SoT.

2. We do renovate the ship in the harbor

   a. According to Lowe, when renovation occurs, the reconstructed ship is not identical to SoT.

   Thus, whether the reconstructed ship is identical to SoT depends on the existence of a renovated ship—if there is a renovated ship, then the reconstructed ship is not identical to the ship of Theseus; if there is no renovated ship, then the reconstructed ship is identical to the ship of Theseus. Yet this seems to violate the common sense notion according to which whether x is identical to y concerns only x and y (and no other thing, z).

4. The reconstructed ship, but not the renovated ship, is the ship of Theseus

   i. Problem: This seems to run afoul of two commonsense notions, (a) that the ship in the harbor retains its identity (as the ship of Theseus) even after the replacement of (some of) its parts, and (b) that the ship in the harbor and the ship of Theseus cannot, at the same time, share half of their parts.

   IV. Fission

1. Suppose a drop of water splits into two drops. Should we say that the original drop of water ceases to exist and, upon splitting, gives rise to two new, distinct objects; or should we say that the original drop of water is identical to one of the new drops of water? According to Lowe, we should say that the original drop of water ceases to exist and gives rise to two new drops of water. Why? If we don’t say this, we’ll need to determine which of the two new drops is identical to the original drop. Yet it is impossible to make this determination in a non-arbitrary way.

2. Why not say that “one of the fission products is indeed identical with the original object, but that it is simply indeterminate which of the fission products this is” (p. 36)? Because there is “a quite compelling argument that identity cannot be vague or indeterminate” (p. 36). Here’s the argument: According to Leibniz’s Law, if something is true of an object a but not of an
object $b$, then $a \neq b$. Suppose, though, that it is indeterminate whether $a$ is identical to $b$. Given this, it seems to follow that it is true of $a$ that it is indeterminate whether it is identical to $b$. However, it is not true of $b$ that it is indeterminate whether it is identical to $b$. Thus, since something is true of $a$ but not of $b$, $a \neq b$. This means that we have determined whether $a$ is identical to $b$ (it isn’t); and this follows from the supposition that it is indeterminate whether $a$ is identical to $b$. We are therefore left with a contradiction, which means that our original supposition must be mistaken—identity cannot be vague or indeterminate.