The Ship of Theseus (adapted from Marc Cohen)

Heraclitus' and Parmenides' writings raise the question of under what conditions an object persists through time as one and the same object. In ancient times, this problem came to be associated with the Ship of Theseus. One version of the problem goes like this: suppose Theseus replaces every plank of his ship on the voyage to and from Crete. (He carries a complete supply of new parts on board as his cargo.) Question: Does Theseus arrive on the same ship as he left on? Let $A =$ ship he started on and $B =$ ship he finished on. Does $A = B$? If not, why not? Suppose he had left one original part in. Is that enough to make $A =$ to $B$? If not, suppose he had left two, etc. Where do you draw the line?

In addition, Theseus was followed by another ship, Scavenger, who picks up every plank he leaves and completely rebuilds his ship with them. When Scavenger arrives in Athens, his ship is composed of precisely the parts that composed the ship Theseus started out in. Now $C =$ the ship the Scavenger finished his voyage on. Question: Is $A = C$?

On one interpretation, the Component Parts Identity theory (CPI), the identity of an object depends on the identity of its component parts. This view asserts that sameness of parts is a necessary condition of identity. If we want to allow that an object can persist through time in spite of a change in some of its components, we must deny CPI. An object $x$, existing at time $t_1$, can be numerically identical to an object $y$, existing at time $t_2$, even though $x$ and $y$ are not composed of exactly the same parts. This seems reasonable, but once you deny CPI, where do you draw the line?

CTI tells us $A = C$. The ship on which Theseus started, $A$, is identical to the ship on which the Scavenger finished, $C$. So we have two ships: $(A/C)$ sailed out by Theseus and sailed in by the Scavenger, and $(B)$ created sailed in by Theseus.

The alternative is to abandon CTI and hold that $A = B$. On this account, we still have two ships: one ship $(A)$ was sailed out by Theseus and $(B)$ sailed in by Theseus, and another one $(C)$ was created (out of used parts) during the voyage and sailed into port by the Scavenger.
The problem with (1) is that it requires Theseus to have changed ships during the voyage. He was on just one ship during the whole process, but (1) requires that he was on (at least!) two different ships. The problem with (2) is that it must hold $A \neq C$. Yet every part of $A$ is a part of $C$, and every part of $C$ is a part of $A$! So $A$ and $C$ are two different ships even though their parts are the same; and $A$ and $B$, though they have no parts in common, are the same ship. These results seem almost as paradoxical as the view that there are no persisting objects.

CPI seems too strong. It denies identity to objects that we think of as persisting through time. But what do we replace it with? Spatio-temporal continuity, the intuition behind our (2), is promising. A persisting object must trace a continuous path through space-time. And this is compatible with a change of parts, so long as the change is gradual and the form or shape of the object is preserved through the changes of its component materials. So it appears that we can replace CTI with the Spatio-Temporal Continuity (STC) theory of identity.

But STC is also problematic. Consider that an object can be disassembled and then reassembled. (E.g. a bicycle is taken apart. The parts are then placed in a number of separate boxes, which are then shipped, separately, across country. The boxes are then unpacked and the bicycle is reassembled.) How do we account for its identity? STC breaks down in this case, for there is no continuously existing bicycle-shaped object tracing a smooth path through space-time. But CTI gives us the right result: the reassembled bicycle is made of exactly the same parts as the one that was taken apart, and so is numerically the same bicycle. If neither CTI nor STC provides a satisfactory account of identity over time, how should we understand it? We are still struggling with Heraclitus's puzzle.

Which theory do you think best accounts for identity over time? Or do you propose a different theory? What are your reasons for supporting one view or the other? How might you apply this problem to the question of personal identity over time?