

Ben Bova - Slowboat To The Stars On to the stars! Since 1905, when Einstein pointed out that nothing in the Universe can move faster than light, physicists and science-fiction writers have been racking their brains trying to figure out a way get around the lightspeed limit. The way has been found. Not by the physicists. Not even by the science-fiction writers. By the biologists. Don't raise the bridge, lower the river If you can't get up to warp speed, take the slow boat. To paraphrase Star Trek's Mr. Spock, "Live long and forget about FTL." The search for a way to go faster than light has been based on the fact that the stars are so damnably far apart. Even if you could fly at light speed (186,000 miles per second), it would take more than four years just to get to nearby Alpha Centauri, a thousand years to reach Polaris, and 30,000 years to journey to the center of the Milky Way galaxy. Far too long for our pitifully short human lifespans, obviously. Until now. In the past few years, breakthroughs in biological research have shown promise that human lifespans may be extended to hundreds or even thousands of years. Physical immortality may well be within sight. The old idea that human lifetimes are limited to roughly "three score years and ten" is about to be demolished. The first immortal humans are probably living among us today. You might be one of them. And you won't age. You won't grow progressively more decrepit as the years slip by. In fact, aging itself may be reversible'a happy thought for those in the latter stages of their youth, as I am. There are samples of human cells in laboratories that have lived much beyond their normal lifespans. Some biologists believe that it will soon be possible to allow people to live to 200 or 300 years. By the time you're 250, of course, so much more will have been learned that your lifespan might well be extended indefinitely. Physical immortality. It won't be an unmixed blessing, of course. Our ideas about Social Security and pensions in general will have to be drastically overhauled. Marriage, law, social customs of all sorts will change radically. Population pressure will inexorably mount when the death rate goes down close to zero, unless we learn how to bring the birth rate down equally far. But immortality puts the stars within reach. You can cruise out to the ends of the Universe within Einstein's speed limit because you will be able to live as long as you please and remain youthful as long as you live. Long Lives That "three score and ten" line comes from the Ninetieth Psalm, a prayer that the Bible attributes to Moses: The days of our years are threescore years and ten; and if by reason of strength they be fourscore years, yet is their strength labor and sorrow; for it is soon cut off, and we fly away. Thus the concept that a human being's "natural" lifespan is at best somewhere between seventy and eighty years has been with us for a long time. Yet Moses himself, according to the Bible, lived to be 120. Modern scholars do not accept that figure, but vastly elongated lifespans dot the Old Testament. Methuselah's age is given as 969 years; Noah's, 950. The chances are that those numbers actually refer to months, not years. That would make Methuselah almost 81, Noah slightly more than 79. Still, in an age when most people did not live to see 30, those were remarkable lifespans. The oldest human being whose age is reliably recorded was Jeanne Louise Calment of Arles, France, who was born 21 February 1875 (14 years before the Eiffel Tower was opened) and died 4 August 1997 at the age of 122 years, five months, and 14 days. She remembered selling pencils to a struggling young artist named Vincent Van Gogh. Is there a natural limit to human lifespan' Is there something built into our bodies, into our genes, that prevents us from living indefinitely' If there is, can modern science find ways to break through this natural limit' The answers seem to be: Yes, yes'and yes. The End



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