

THE SEARCH

*Without knowing what I am and why I am here, life is impossible.*

• Leo Tolstoy, *Anna Karenina* •

If we don't find life literally impossible without answering that question, at least its difficulties increase. It is very reasonable for humans to want to understand something of our context in a broader universe, awesome and vast. It is also reasonable for us to want to understand something about ourselves. Since we have powerful unconscious processes, this means that there are parts of our selves that are hidden from us. And this two-pronged investigation into the nature of the world and the nature of our selves is, to a very major degree, I believe, what the human enterprise is about.

Our success as a species is surely due to our intelligence, not primarily to our emotions, because many, many different species of animals surely have emotions. Many, many different species of animals also have varying degrees of intelligence. But it is our intelligence—our interest in figuring things out, our ability to do so, coupled with our manipulative abilities, our engineering talents—that is responsible for our success. Because surely we are not faster than all other species, or better camouflaged, or

better diggers or swimmers or fliers. We are only smarter. And, at least until the invention of weapons of mass destruction, this intelligence has led to the steady—in fact exponential—increase in our numbers. And in the last few thousand years, our numbers on this planet have increased by much more than a factor of a hundred. There are human outposts not just everywhere on the planet, including Antarctica, but in the ocean depths and in near-Earth orbit. And it is clear that if we do not destroy ourselves, we will continue this progressive, outward movement until there will be human settlements on neighboring worlds.

It seems to me also clear that historians of a thousand years from now, if there are any, will look back on our time as being absolutely critical, a turning point, a branch point in human history. Because if we survive, then this time will be remembered as the time when we could have destroyed ourselves and came to our senses and did not. It will also be the time in which the planet was bound up. And it will also be remembered as the time when, slowly, tentatively, haltingly, we first sent our robot emissaries and then ourselves to neighboring worlds.

Now, all of these are extraordinary and unprecedented activities. Never before have we had the capability of destroying ourselves, and therefore never before have we had the ethical and moral responsibility not to do so. A way of looking at the time we happen to inhabit is as follows: We started hundreds of thousands to millions of years ago as itinerant tribespersons, in which the fundamental loyalty was to a very small group, by contemporary standards. Typical hunter-gatherer groups are maybe a hundred people, so the typical person on the planet had an allegiance to a group of no more than a hundred or a few hundred people.

The names that many of these tribes give to themselves are

touching in their narrowness. All over the world, people call themselves “the people,” “the men,” “the humans.” And all those other tribes, they aren’t people, they aren’t men, they aren’t humans. They are something else. Now, that doesn’t mean that a state of constant warfare existed among these tribes, as Thomas Hobbes, for example, imagined. A significant fraction of those early groups, there is reason to think, were benign, calm, peace-loving, not interested in systematic, bureaucratized aggression, which is the function of states at a later time.

As time passed, groups have merged, sometimes voluntarily, sometimes involuntarily, and the unit to which personal identification and loyalties are due has grown. The sequence is known to all of those who take courses in the history of civilization at universities, in which we pass through allegiances to larger groups, to city-states, to settled nations, to empires. Today the typical person on the Earth is obviously a patchwork quilt of political, economic, ethnic, and religious identifications, owing allegiance to a group or groups consisting of a hundred million people or more. It’s clear that there is a steady trend, if the trend continues, there will be a time, probably not so far in the future, when the average person’s typical identification is with the human species, with everyone on Earth.

The more we view the Earth from the outside, the more we come to see it as an exquisite, tiny world, everyone dependent upon everyone else, the sooner that general perception will come into being. Despite all the faults of international organizations, it is nevertheless striking in our time, in this century and the last few, but especially in this century, that organizations of global purview, involving essentially every nation on Earth, have grown up, have persisted, and we would, of course, not expect them to be perfect. Their imperfections are a function of

the newness of the organization and the fact that human beings are imperfect. But it is a trend, a token, of the direction in which we are headed, provided we do not destroy ourselves.

One way to think of our time is as a race between these conflicting tendencies: one to bind up the planet, preserving, it may be, some of its ethnic and cultural diversity, and the contrary trend to destroy the planet, not in the geophysical sense but the planet in the sense of the world that we know. It is by no means clear which of these two conflicting tendencies will win out, in the lifetime of you who are among the first to be hearing these words.

Now, another way of looking at this is as a conflict within the human heart, as a conflict between the bureaucratic, hierarchical, aggressive parts of our nature, which in a neurophysiological sense we share with our reptilian ancestors, and the other parts of our nature, the generalized capacity for love, for compassion, for identification with others who may superficially not look or talk or act or dress exactly like us, the ability to figure the world out that is focused and concentrated in our cerebral cortex. Our survival is (how could we have imagined it to be anything else?) a reflection of our own nature and how we manage these contending tendencies within the human heart and mind.

Since the times are so extraordinary, since they are unprecedented, it is in no way clear that ancient prescriptions retain perfect validity today. That means that we must have a willingness to consider a wide variety of new alternatives, some of which have never been thought of before, others of which have, but have been summarily rejected by one culture or another. We run the danger of fighting to the death on ideological pretexts.

We kill each other, or threaten to kill each other, in part, I think, because we are afraid we might not ourselves know the truth, that someone else with a different doctrine might have a

closer approximation to the truth. Our history is in part a battle to the death of inadequate myths. If I can't convince you, I must kill you. That will change your mind. You are a threat to my version of the truth, especially the truth about who I am and what my nature is. The thought that I may have dedicated my life to a lie, that I might have accepted a conventional wisdom that no longer, if it ever did, corresponds to the external reality, that is a very painful realization. I will tend to resist it to the last. I will go to almost any lengths to prevent myself from seeing that the worldview that I have dedicated my life to is inadequate. I'm putting this in personal terms so that I don't say "you," so that I'm not accusing anyone of an attitude, but you understand that this is not a mea culpa; I'm trying to describe a psychological dynamic that I think exists, and it's important and worrisome.

Instead of this, what we need is a honing of the skills of explication, of dialogue, of what used to be called logic and rhetoric and what used to be essential to every college education, a honing of the skills of compassion, which, just like intellectual abilities, need practice to be perfected. If we are to understand another's belief, then we must also understand the deficiencies and inadequacies of our own. And those deficiencies and inadequacies are very major. This is true whichever political or ideological or ethnic or cultural tradition we come from. In a complex universe, in a society undergoing unprecedented change, how can we find the truth if we are not willing to question everything and to give a fair hearing to everything? There is a worldwide closed-mindedness that imperils the species. It was always with us, but the risks weren't as grave, because weapons of mass destruction were not then available.

We have Ten Commandments in the West. Why is there no commandment exhorting us to learn? "Thou shalt understand

the world. Figure things out." There's nothing like that. And very few religions urge us to enhance our understanding of the natural world. I think it is striking how poorly religions, by and large, have accommodated to the astonishing truths that have emerged in the last few centuries.

Let's think together for a moment about the prevailing scientific wisdom on where we come from. The idea that nearly 15,000 million years ago the universe, or at least its present incarnation, was formed in the big bang; that for some 5,000 million years thereafter even the Milky Way Galaxy was not formed; that for some 5,000 million years after that, the Sun and the planets and the Earth were not formed; that 5,000 million years ago, on an Earth not identical by any means to the one we know today, a large-scale production of complex organic molecules occurred that led to a molecular system capable of self-replication, and therefore began the long, tortuous, and exquisitely beautiful evolutionary sequence that led from those first organisms, barely able to make vague copies of themselves, to the magnificent diversity and subtlety of life that graces our small planet today.

And we have grown up on this planet, trapped, in a certain sense, on it, not knowing of the existence of anything else beyond our immediate surroundings, having to figure the world out for ourselves. What a courageous and difficult enterprise, building, generation after generation, on what has been learned in the past; questioning the conventional wisdom; being willing, sometimes at great personal risk, to challenge the prevailing wisdom and gradually, slowly emerging from this torment, a well-based, in many senses predictive, quantitative understanding of the nature of the world around us. Not, by any means, understanding every aspect of that world but gradually, through successive approximations, understanding more and more. We face

a difficult and uncertain future, and it seems to me it requires all of those talents that have been honed by our evolution and our history, if we are to survive.

One thing that seems especially striking in contemporary culture is how few benign visions of the immediate future are offered up. The mass media show all sorts of apocalyptic scenarios, ghastly futures. And there tends to be a kind of self-fulfilling prophecy to these prognostications. How rarely is it that we see a projection twenty or fifty or a hundred years into the future into a world in which we have come to our senses, in which we have figured things out? We can do that. There's nothing that says that we will inevitably fail to meet these challenges. We have solved more difficult problems, and many times. For example, there was once a doctrine called the divine right of kings. It held that God gave kings and queens the right to rule their people. And at that time it really meant rule. "Rule" was not so very different from "own." And eminent clergymen argued that this was clearly written in the Bible. It was the will of God. Eminent secular theologians, Thomas Hobbes, for example, argued just the same thing. And yet there was a stirring sequence of worldwide revolutions—the American, the French, the Russian, and a number of others—that have now produced a planet in which no one, except an occasional atavistic emperor of a short-lived, small country, no one believes in the divine right of kings. It's now a kind of embarrassment. It's something that our ancestors believed but we in this more enlightened time do not.

Or consider chattel slavery, which Aristotle argued was intended, it was in the natural order of things, the gods required it, that any movement to free the slaves was against divine intention. And slaveholders throughout history have pointed to passages in the Bible to justify the holding of slaves. Yet today,

in another stirring sequence of events worldwide, legal chattel slavery has been essentially eliminated. And again it is something from our past that we are embarrassed about, that we surely should still think of as an important insight into a dark side of human nature that should be resisted. Surely the deprivations visited on peoples who were once enslaved have not been balanced, but we have made remarkable progress.

Or look at the status of women, about which finally the planet is coming to its senses in our own time. Or even things like smallpox and other disfiguring and fatal diseases, diseases of children, that were once thought to be an inevitable, God-given part of life. The clergy argued, and some still do, that those diseases were sent by God as a scourge for mankind. Now there are no more cases of smallpox on the planet. For a few tens of millions of dollars and the efforts of physicians from a hundred countries, coordinated by the World Health Organization, smallpox has been removed from the planet Earth.

The vested interests in favor of the divine right of kings, or slavery, were very large. Kings had a vested interest in the divine right of kings. Slaveholders had a vested interest in the continuation of the institution of slavery. Who has a vested interest in the prospects of nuclear war? It's a very different situation. Everyone is vulnerable today. And therefore I think it's important to remember that we have dealt with and solved much more difficult problems than this.

The only problem is that the threat of nuclear war has to be dealt with swiftly, because the stakes are too high. The clock is ticking. We cannot permit a leisurely pace.

Suppose you are a linguist. You are interested in the nature and evolution of language. But unfortunately you know only one language. No matter how clever you are, no matter how complete your dictionary of whatever the language is—say,

Nahuatl—you will be fundamentally limited in your ability to generate a broad, interdisciplinary, predictive theory of language. How could you be expected to do very well if you knew only one language? If Newton were restricted, in working through the theory of gravitation, to apples and forbidden to look at the motion of the Moon or the Earth, it is clear he would not have made much progress. It is precisely being able to look at the effects down here, look at the effects up there, comparing the two, which permits, encourages, the development of a broad and general theory. If we are stuck on one planet, if we know only this planet, then we are extremely limited in our understanding even of this planet. If we know only one kind of life, we are extremely limited in our understanding even of that kind of life. If we know only one kind of intelligence, we are extremely limited in knowing even that kind of intelligence. But seeking out our counterparts elsewhere, broadening our perspective, even if we do not find what we are looking for, gives us a framework in which to understand ourselves far better.

I think if we ever reach the point where we think we thoroughly understand who we are and where we came from, we will have failed. I think this search does not lead to a complacent satisfaction that we know the answer, not an arrogant sense that the answer is before us and we need do only one more experiment to find it out. It goes with a courageous intent to greet the universe as it really is, not to foist our emotional predispositions on it but to courageously accept what our explorations tell us.