UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

WEEK 5 ANSWER TO QUESTION 4

STEP 5.10 ASK MARK

The fourth and final question for this week goes like this. "It's been 200,000 years since the last major evolutionary step for the human species. Since our scientific and technological advances may well have upset the natural-selection handcart, what do you see as the most likely next step in human evolution?"

Now I must first disclaim any prophetic ambitions. I'm not a prophet. I'm not a futurologist. I haven't really much to say about what the next step in the evolution of our species is likely to be, but I do think I can make some remarks which are pertinent to the premises of this question.

It's certainly true what the questioner is saying, that the scientific and technological advances of our species in recent years have radically changed the landscape as regards the major forces that drive evolution, that is to say survival to reproduce.

Think about medical technology, and it's obvious that we now are able to artificially preserve life and prolong life in ways that were undreamt of in the past. And so there are members of our species who are surviving that would otherwise have been weeded out by natural selection, and they're surviving to reproduce.

What's more, it's possible to artificially enhance reproductive capacity in all sorts of ways, so that many members of the species who may not previously not only have survived, but even if they had survived, they may not have reproduced. They now do reproduce. And so yes, indeed, we have upset the evolutionary handcart in that way.

Why are we able to do that? Because of our famous prefrontal lobes. We are able to think in these advanced, abstract, forward-thinking ways, unimaginable in a species without this particular enhancement of cerebral capacity.

But here's the main point. Let's not forget that the development of prefrontal lobes was itself an evolutionarily forged development. The reason that we have these big prefrontal lobes is because they bestowed on us a natural advantage. They bestowed on us humans a greater capacity to survive in order to reproduce, because it gave us this greater flexibility, this incredible capacity to be able to formulate creative choices beyond the stereotyped instinctual tools at our disposal.

This greater flexibility enables us to survive in environmental niches that we never would have been able to in the past. And the scientific and technological advances that the questioner refers to are just of the same kind. These are excrescences of our prefrontal lobes. They all manifestations of our greater capacity to think ahead, to plan, to abstract, and subjugate nature to our needs.

So if you think about it, the fact that we now have the technology that enables us to preserve life, where previously we would've been at the mercy of disease, genetic or otherwise. And the fact that we now have the capacity to enhance reproductive abilities, are, in fact, ultimately driven also by those very same forces that the questioner says have we not now sort of out-stripped these forces. Have we not sort of somehow transcended the limitations of natural selection?

I think in a manner of speaking, in a very, very real manner of speaking. In fact, what we've done is developed tools, these scientific and technological tools, in order to further enhance our capacity to survive and to reproduce.

So what does that mean? What it means is we have greater genetic diversity, that we have longer lives, that we have greater reproductive capacity. All of this is good for our species. And remember, it's a sorry old fact that the species are all in competition with each other. And we have really done very well out of that game.

What will the implications be for the next evolutionary step? I don't know, except I hope it's clear from what I've said that I think that that next evolutionary step will still be constrained by the imperative to survive in order to reproduce.

Thanks very much. See you next week, for the last time.