UNNATURAL SELECTION OR ARTIFICIAL SELECTION
OR SELECTIVE BREEDING
Z. Nicholas Zakov
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Disclaimer: This paper is neither a political statement nor a regression to a so called "social Darwinism" but simply a statement of facts that I have gathered. The principles are clearly Darwinian. One has to be very careful not to equate genes with human traits since most human behavior and traits are usually multifactorial genetic and environmental in nature, but gene frequency in a population in the final analysis is important.

Natural selection is the gradual process by which biological traits become either more or less common in a population as a function of the effect of inherited traits on the differential reproductive success of organisms interacting with their environment. It is a key mechanism of evolution. The term "natural selection" was popularized by Charles Darwin who intended it to be compared with artificial selection, which is now called selective breeding.

Natural selection can be contrasted with artificial selection, in which humans intentionally choose specific traits (although they may not always get what they want). In natural selection there is not intentional choice. In other words, artificial selection is teleological and natural selection is not teleological.

In this paper we contend that the forces that drove natural selection in the animal world for over 3 billion years of life on Earth no longer operates exclusively on today's humans in much of the world.

Natural variation occurs among the individuals of any population of organisms. Many of these differences do not affect survival, but some differences may improve the chances of survival of a particular individual. A rabbit that runs faster than others may be more likely to escape from predators, and algae that are more efficient at extracting energy from sunlight will grow faster. Something that increases an animal's chances of survival will often also include its reproductive rate; however, sometimes there is a trade-off between survival and current reproduction. Ultimately, what matters is a total lifetime reproduction of the animal.

If the traits that give these individuals a reproductive advantage are also heritable, that is, passed from parent to child, and then there will be a slightly higher proportion of fast rabbits or efficient algae in the next generation. This is known as *differential reproduction.* Even if the reproductive advantage is very slight, over many generations any heritable advantage will become dominant in the population. In this way the natural environment of an organism "selects" for traits that confer a reproductive advantage, causing gradual changes or evolution of life.

Fitness

The concept of fitness is central to natural selection. In broad terms, individuals that are more "fit" have better potential for survival, as in the well-known phrase "survival of the fittest". However, as with natural selection above, the precise meaning of the term is much more subtle. Modern evolutionary theory defines fitness not by how long an organism lives, but by how successful it is at reproducing. If an organism lives half as long as others of its species, but has twice as many offspring surviving to adulthood, its genes will become more common in the adult population of the next generation. Natural selection can be summarized as SURVIVE and REPRODUCE!

REPRODUCTIVE SUCCESS

Reproductive success is defined as the passing of genes into the next generation in a way that they too can pass on these genes.

Organisms compete for food, water, space, and territory, sexual mates, (sexual selection) e.g. peacocks vs horned animals. They also compete in their resistance to diseases and immunological fitness and other features. This has been also the way for humans for millennia and still is true for a proportion of the human population particularly living in some third world countries – the tropics, etc.

The classic Four Horsemen of the Apocalypse in history and religion were conquest (death, slavery, loss of territory), war (the same), famine (lack of food and water), and death (genocide i.e. loss of the genes a population has). Another interpretative name of the Four Horsemen was also Pestilence (plague) as one of the Horsemen and obviously death is often a consequence. These Horsemen were humanity's changes throughout recent history up to the recent past. Anytime an individual dies before its full reproductive life for any reason or is removed from the genetic pool by any means this obviously affects the genetic make-up of any future population and generation.

Differential survival of humans currently often has nothing to do with these factors of evolution that were present for billions of years. Currently with our "cultural" evolution where certain behavior and beliefs have vastly influenced reproductive survival. This has happened more and more frequently now.

We shall present multiple examples of human behavior which have produced profound changes in differential survival.

1. Wars – These have been going on forever. Chimps kill males of other unrelated groups and recently the remains of many humans were found from a war (?genocide) from 10 thousand years ago in Kenya. War often kills the youngest (before they are able to reproduce) or wholesale group of people (e.g. Hiroshima and Nagasaki) the bombing of Dresden and Tokyo - carpet bombing of cities and obviously all those individuals of reproductive and pre-reproductive age were forever genetically silenced. This is true of any and all wars.

2. Genocide – by definition this is the "killing of the genes" of the population killed. This includes hundreds of examples – Mao's rule with 60 million Chinese dead, the Holocaust of Jews, Gypsies, Poles, etc., the millions of Ukrainians killed in the 30's famine engineered by Stalin, the Armenian genocide, the genocides in Cambodia, Rwanda, and the Moslems in Bosnia. This also includes the genocide of Native Americans in North and South America including complete annihilation of such groups as the Terra Fuegans and all Tasmanians in Australia, slaves within Africa, on transport ships and in transplanted lands with no or limited reproduction.

3. Diseases – The Black Death (plague) killed a third to a half of Europe's population in successive waves. Introduced diseases to populations without resistance i.e. Native Americans, Pacific Islanders, etc., and visa-versa the spread of syphilis in Europe from the New to the Old World, newly transported diseases in the era of global inter-communications (Ebola, Zika, etc.) are other examples.

    The flip side of the coin is that if certain Western societies and cultures had NOT produced and keep producing certain antibiotics, vaccines, pesticides, etc., millions of people in certain underdeveloped countries would certainly die.

4. "Genetic Suicide" – Certain personal decisions or lifestyles lead to voluntary elimination from the gene pool:
   a. Celibacy for religious or other reasons.
   b. Homosexuality with a few exceptions.
   c. Culture of the "me-me" generation i.e. DINK – "double income no kids".
   d. Early death from drug use.
   e. Women in the workplace and the biological clock.
   f. Birth control.
   g. Incarceration and others.

Recently a book was published called "Unnatural Selection – Why the Geeks will Inherit the Earth" by Mark Roeder. The book examines the rise of the "techno-centric being" or geek – who personifies a distinct new phase of human evolution. It is debatable whether they will have, however, better reproductive success for a variety of reasons.

5. Absence of birth control leading to more offspring:
   a. Certain religions and groups: Catholics, until recently, Amish, Mormons, Gypsies, Moslems, Orthodox Jews, etc.
   b. Welfare programs encouraging more children for more subsidies.

Plain irresponsible behavior abetted by a welfare system encourages this. Recently a case in Kentucky made the news where a male to be incarcerated for an offense admitted having 31 children from 13 different women (yes, some of these women had more than one child with him) and he is providing zero financial support for them with all of the mothers and children on welfare and no laws on the books to curtail this type of behavior for the man.

   c. Certain polygamous societies where certain males have more children where others have few or none. (Hand out to be distributed).
      For instance, historically this was true for Sultans, Harems, Kings, etc.

6. Other Factors:
   a. Abortions and abortions on the basis of sex.
   b. One child policy in China.
   c. Age of marriage especially for women.
   d. Decreased reproductive rates in East and West Europe – economic reasons, taxes, social policies. This could lead to a possible extinction of Hungarians, Russians, Italians, Spanish, etc. in a few generations.
   e. The "Darwin Awards" – "there is no cure for stupidity".

Another example how behavior and ideas in the developed world can affect survival is the story of DDT. "Silent Spring" became the Bible of the environmental movement and certain issues it raised regarding bird eggs etc. with indiscriminate DDT spraying were valid but not allowing low dose DDT use in Africa, etc. around dwellings promoted millions of children deaths from malarial mosquitoes.

An obvious question is whether real natural selection in the classic sense has operated on humans in the last 250,000 years since our species came about. The answer is that it did and still does, but will be the subject of another talk.

The bottom line is that for today's humanity, especially in the so-called developed countries but not exclusively so, the survival of the fittest on the basis of the classic competition for food, shelter, mates, etc. does no longer apply.

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