

EX LABORATORIO

Thoughts & Opinion

How neoteny shapes human society: Can we escape our formative years, and fight the wrong kind of populism?

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Abstract

This article describes aspects of our biological nature that have contributed to the dangerous current state of societal, ecological and climatological affairs. Next, it deals with stratagems to take these aspects into account, so as to allow us better choices. I will concentrate on the concepts of evolved group mechanisms and “neoteny” and explain why they direct our responses throughout our lives. The connection between our biological make-up and our vulnerability to the current rise of certain kinds of irrational, undemocratic, populism is also laid bare. I will end by listing some simple, but possibly controversial, proposals that might have value in combating these societal tendencies and help decision making in a reality-based, more scientific, manner.

KEYWORDS

democracy, discrimination, government, neoteny, populism, religion

INTRODUCTION

It has been somewhat of a struggle to get these reflections published. At first sight this is surprising, because the following biological observations regarding the nature of that special animal, *Homo sapiens*, are so basic as to be unassailable. Listing the consequences of these aspects for our societal functioning seems just as straightforward. However, spelling out these consequences turns out to be unpalatable for many, maybe even most, of us. I would just ask the reader to temporarily suppress instinctive urges towards outright dismissal. We can at least agree that we are experiencing a period of great upheaval, in which sound, fact-based policies are going to be crucial. The central focus of this article: recognizing how aspects of our biology have contributed to the current state of affairs and how we should deal with them to allow better choices. I will briefly introduce the concepts of evolved group mechanisms and “neoteny,” discuss how they steer our responses throughout our lives, mix in some of the experiences that shaped my own thinking, and explain how this biological make-up makes us vulnerable to the current rise of a certain kind of irrational, undemocratic,

populism. I will end by formulating some simple ideas that might help to face the current and future challenges in a reality-based manner.

GROUP MECHANISMS AND IMPLICATIONS OF NEOTENY

It is becoming clear that certain deeply ingrained human tendencies to instinctively classify people are evolutionary linked to our hunter/gatherer past, though much of the reconstruction of ancient lifestyles from present-day remnants of such societies is fraught with difficulties. For instance, the effective size and layering of group structures is under debate. However, there are good indications that “us versus them” mechanisms (helped by superficial race characteristics) are strengthened by, or originate from, coalitional alliances of hunter/gatherer groups.^[1] This, in turn, could be building on an inherent preference for a “similarity to self.”^[2] More importantly, all such tendencies should probably be seen in the context of an even more profound human biological characteristic, that of neoteny. What is neoteny

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and how is it connected to our pressing societal, climatological, and environmental crises? As an admirer and avid consumer of the books of the late Stephen Jay Gould I first encountered the concept reading him.^[3] It refers to the observation that humanity evolved retaining juvenile characteristics over a longer part of our lifetimes than other species, some characteristics even remaining juvenile our complete lifespan. The most important instance of this: our large brains can be seen as a product of a prolonged period of rapid foetal growth rates. This, together with the fact that further gestation in the womb would make child birth even more of a physiological challenge than it already is, means we arrive as highly fragile, helpless, organisms. Not only are we not able to fend for ourselves, but we need a tremendous amount of time to grow up (and one might wonder if some of us ever do). This vulnerable state of things has led to unimaginable heartbreak for many parents. Nature has coevolved protection: we will soak up as much information about our surroundings as possible in the first period of life, and start out blindly following our elders, with the first decade probably being the most influential. The drawbacks? (1) Bad mental habits (such as the “us versus them” automatism or rigid ideological and societal frameworks) can be imprinted for life. (2) We become relatively inefficient in adapting to rapid, large scale changes. Let me elaborate, starting with some personal observations.

HOW FORMATIVE EXPERIENCES INFLUENCE DEEPLY

Recently, one of the heroes of my youth died. Vladimir Bukovsky’s “To build a Castle” was among the many books by Russian dissidents that I read almost as soon as they appeared. People like him risked everything to defend principled positions, standing up to a monolithic absolute dictatorship. Reading these dissident works, one can learn a vital lesson: how important, valuable, and (alas!) rare, real freedom of expression is. Such authors can inoculate you against the current tendencies to get rid of essential democratic safeguards, at the moment provided by a minority of modern states. However, after leaving the Soviet Union, Bukovsky^[4] advised Reagan and Thatcher, two politicians who have helped economic libertarianism, which can be seen as a right-wing version of anarchy, attain its present destructive status. And, considering the whole Brexit furore: he also was not a fan of the European Union. Leaving out nuances, we might say that the Soviet state gave him no personal experience of a useful government and made him suspicious of centralized power, especially where WW-II enemy Germany was involved. It also made him susceptible to a worldview that conflates economic and political freedom. As a resident of the Netherlands, growing up in the late sixties, with a government (mostly) working for the large majority of its citizens, I of course came to have very different opinions. Thus, we become telling examples of the fact that it is difficult to escape our early “formative” experiences.

A dangerous aspect of the dominance of our formative years is “shifting baseline syndrome,” in which every new generation essentially lowers ecological standards by accepting the world they grow up in as normal.^[5] The examples so far have all been of the effects of

“soaking up the environment” during youth. How about the side effects of “blindly having to trust (parental) authority”? These seem to me even more pernicious. As an example: the single major determinant of your religion is the religion of your parents. Darwin explains this eloquently: “How so many absurd rules of conduct, as well as so many absurd religious beliefs, have originated, we do not know....but it is worthy of remark that a belief constantly inculcated during the early years of life, while the brain is impressionable, appears to acquire almost the nature of an instinct; and the very essence of an instinct is that it is followed independently of reason.”^[6]

DARWIN VERSUS WALLACE VERSUS GOULD

As so often, Darwin did not flinch when he had to accept a difficult truth dictated by reason, and we know from his letters that he did not exempt his own religious upbringing from the argument presented here. I have great admiration for the co-discoverer of evolution by ways of natural selection, Alfred Russel Wallace, especially considering he came from a far less privileged background than Darwin. However, not only the depth and breadth of Darwin’s contributions, but also his daring conclusions put him in a league of his own. In Chapter 5 (“A matter of degree”) of “Ever since Darwin,”^[7] Stephen Jay Gould points out that while Wallace could not accept the human brain to be only a product of evolution, and became involved in spiritism, Darwin considered differences between primate brains just matters of degree. As a side note, Darwin’s reluctance to stress these aspects of his thinking shows him to be fully aware of the impossibility to separate science and religion as Gould tries to do in one of his rare less-convincing books, “Rock of Ages.”^[8] That introduction of two strict “non-overlapping magisteria”, with science only describing how things are and religion prescribing how things should be, can never work. Ironically, in this respect, religious opponents of Darwin take him more seriously than Gould does. Admitting the obvious truth that scientific insights strongly contribute to one’s overall philosophy, a more honest position would be that scientists fully support freedom of thought and expression (and thus of religion), though not often based on content. The modern tendency not to “rock the boat” when it comes to unwelcome scientific conclusions, in the name of retaining absolute scientific objectivity and credibility, has spectacularly backfired (see below).

THE ABSURD STATE(S) WE ARE IN

Due to the side effects of neoteny discussed, we continue to accept forms of government going against all reason. Staying close to home, in the UK and the Netherlands we almost “instinctively” accept an absurdity such as the head of state coming from hereditary “royalty,” while the UK is burdened with baseless societal inequalities such as a “ruling class”. Looking at England over the last decades, might I be forgiven for defining the ruling class as the group characterized by a level of competence inversely related to their level of certitude and sense of entitlement? Pankaj Mishra, of “The Romantics” fame, also analyses current

cultures in a more journalistic fashion. Recently, he turned his penetrating gaze on the toxic mix of nationalism, racism, empire, class, and the elections in England.^[9] I urge the reader to read the article as well as his novel. He describes the myriads of indelible marks left by our personal histories much better than I ever could.

Why am I writing about these aspects of our societies in a scientific journal? And are my remarks not “too political”? Above, I referred to a time of “great upheaval”. To just indicate but a few of the current problems that threaten us: pandemics, ecological collapse, ongoing population growth, extreme (and growing) inequality, the widespread assault on democracy and human rights, and maybe the most pressing, urgent one: *accelerating* climate change. A further problem is that this factual statement regarding the state of our civilization and its (interlinked) problems is dismissed by many as “not accurate,” though mostly in much stronger terms (“lies and manipulations”). Objectively speaking, I think the scientific community would also agree that things are especially perilous, because at this precise moment in time, “populist” leaders dominate the political landscape, even in the more democratic countries, as never before. Adapting to the current challenging large-scale changes will be even more of an uphill battle because of them.

THE BIOLOGICAL NATURE OF POPULISM

How come populism has been on the rise and why is it especially dangerous now? Here our biological analysis, focusing on the side effects of neoteny, turns out to be highly illuminating. But, let us first be clear what is meant by “populism”. Though many commentators have tried to muddy the waters, it is not just expounding political ideas that are broadly popular (“tax the rich”; universal health care) and getting a large following while doing so^[10]; though this might have been its original usage. Nowadays, “populists” refers to those who state that they represent the “real people”. This implies that all opposition to them is illegitimate, and those opposing them are enemies of the only people that count, the real ones (whatever that might mean). As such they are the living embodiment of the “us versus them” automatism, described above. But if opposition is illegitimate, democracy by definition ends.

Not surprisingly, thinking back to our description of human infants as a kind of information sponges, such autocratic politicians pose as the true defenders of the faiths of our youth, while (implicitly) excluding other faiths and ethnicities. Ironically, in this larger scheme of things the specific religion, though so crucial to their followers, seems almost irrelevant (compare e.g. Erdogan, Modi, and Trump). As the “us” needs a “them”, a highly depressing, lethal aspect is ever present. Populists always sow and exploit divisions, with groups exhibiting differences from the majority (whether religious, ethnic or sexual) being targeted. Such groups, though fundamentally powerless, are described as sources of great danger, invoking the world as the dangerous, unpredictable, place we were born into as helpless infants. Other constants in the populist arsenal, such as the discrimination of women and nostalgia for all the other ancient social hierarchies people grew up with, can also be easily understood as expressions of continuous rigid ideological frameworks that were internalized during the formative years. Last,

but not least, the explicit authoritarianism of such leaders intersects with our fundamental need for reliable sources of (parental) trustworthy guidance.

Paradoxically, what present-day populists understood is that in combining the highly modern large-scale dissemination of messages with content that would strongly resonate with our old biological predispositions and prejudices, a winning combination presented itself. Of course, other forces played a role, such as harmful vested interests and long-standing scorched earth tactics by certain political parties in the west, in effect delegitimizing other parties. The fact that many of the new internet possibilities were implemented without any considerations of possible misuse (a recurring theme in human history: unthinking rapid technological advances) also contributed. The frightening difficulty is that populism seems *only* interested in winning and retaining power. It has already demonstrated almost universal gross incompetence when in government. How could it be otherwise? As we know, many of our scientific insights (e.g. regarding climate change, pandemics, health, and inequality) are in direct opposition to the cherished positions of populists, which makes them advocates of science denial. This constitutes what we might call the “pernicious paradox of populism”: its appeal is based on simplification and denial of reality, making it inherently incapable of effective government, which can be defined as dealing with a highly complicated reality in a fact-based manner.

WHAT SHOULD WE DO: SCIENCE EDUCATION AS PART OF THE ANSWER

Let me end with some extra observations and conclusions regarding the way forward. First of all, scientists have to stop being afraid to enter political debates. The extreme care to never let personal preferences and ideas sully an ideal of absolute non-partisanship, so that trust in science would not be eroded, has not prevented that science came under attack from populists anyway. It might even have backfired as urgent findings did not come across as such, because scientists were afraid to be seen as fearmongering partisans. Science and scientists don't operate in a vacuum and as long as we communicate clearly where facts end and interpretations begin, we can use our expertise to help meet the current challenges. Secondly, climate change and pandemics show the deadly limitations of the “us versus them” paradigm. At present there is only “us”: we really are all in this together. This certainly does not mean that those who are poor and/or belong to powerless minorities are not hit much harder by their effects: they clearly already are. Covid-19 *does* discriminate! But, it does mean that we cannot close our eyes to the injustice that some of us will bear the heaviest brunt of the current developments and that for *all* of us the quality of life will deteriorate sharply if we do not overcome our old habits. Coming to terms with the fact that *we really are specific products of biological evolution* needing help to make rational, informed, decisions, will help scientists to be more effective in influencing societal debate, and combating misinformation. Thus, by not only being right, but also focusing on being perceived to be right, we can win back power from populism and give humanity the chance of a brighter future.

So far, I focused on more, and more effective, contributions to societal discussions by scientists being aware of the deep prejudices stemming from our biological nature. But that part only discusses how we should communicate, and not how people will react. Can we not also change the audience? I discussed our predicaments, almost arrogantly, as if scientists and people are different, and people should listen to scientists, while in reality we all should just listen open-mindedly to each other. So, what does science have to contribute? The answer is in the “open-minded” part. In principle, a “scientific mind-set” tries to shield us from assumptions and allow the facts to speak for themselves (one could almost say it functions as an antidote to the side-effects of neoteny). Thus, we should incorporate this outlook as quickly as possible in our formative experiences. I know that this is considered to be controversial, again stressing that scientists have to rock the boat and cannot follow Gould’s stance: science education from a young age is a *necessity*. The resulting science literacy will not only help us to be more resistant to the wrong kind of populism. It will also contribute to transforming the pseudo-critical stance leading to the internet explosion of conspiracy thinking into a mature critical outlook debunking it. Then, not only is there access to “all” information, but we will be better equipped to handle it. Will a world in which more people understand complexity, limits to insight, and the nature of expertise be “populism-proof”? At minimum, it stands a better chance. The struggle against irrationality and deformed populism will not be easy, but there is no other option. At least we are starting to understand more clearly what we are up against.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

CONFLICT OF INTEREST

The author has no potential conflict of interest to disclose.

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