

University Senate President's Reflection March 2022

Polarization

Octavian C. Ioachimescu, MD, PhD

I was reading the other day about electric cars and functioning principles of their batteries. The fundamental concept is that of the *electrical dipole*, defined as a system in which positive and negative electric charges are located at two different ends, separated by a small distance. In this example of a dipole, electrons flow between a cathode to an anode. The system is characterized by its *dipole moment*, its magnitude being equal to the *strength of the electric charge* multiplied by the *distance of separation*. Similarly, a bar magnet owes its magnetic properties to the intrinsic dipole moment of the moving electrons between its poles, which are generally labeled 'north' and 'south'. The text I was reading continued: "There are no known monopoles (not monopoly!) in nature; while many examples of dipoles can be found, monopoles cannot exist."

While the **main meaning** of *polarization* stems from physics and is generally related to light, radiation or magnetism, it is present in all living cells and organisms, and its central tenet is represented by an electrical dipole. The **second meaning** of polarization is described in physics by a condition in which light waves travel in parallel paths along one plane, and all the oscillations in other planes are filtered out, such as the example of looking through polarized lenses.

The reason I bring up the issue of polarization is due to the *socio-economic and political translation of the concept*. Outside physical sciences, polarization usually refers to how people think, especially when different views emerge that drive people apart, being at opposite poles. But interestingly, opposite sides are supposed to be attracting each other!

The same as in science, which states that monopoles cannot exist, one single principle, voice, opinion, reality, system of values cannot exist in the social realm either, while having two poles (positive and negative, Yin and Yan, light and dark, etc) is almost a requirement in both physical and non-physical world.

So, first, we need differently charged poles. I don't think we lack this in our institution and in the society at large. In our communities, we are blessed with a variety of views, experiences, levels of expertise, opinions, approaches, theories, etc. What may be *the invisible hand of adverse polarization* is represented by the more discrete planes of how our minds select the information, how we curate the veridicity of data, how we shape our perception about the reality in the media, on internet, in the social media or cable channels, etc. Take the extreme example of vaccines.

As I mentioned earlier, besides the different charges, the dipole moment is related to the distance between the poles. Here *we have another problem*: the distance between opposite sides has grown too much. So much that the exchange of matter, electrons, ideas, theories, hypotheses,

paradigms, has been almost completely stopped by an invisible wall. The distance is sometimes so large that there is no more attraction to the opposite pole, there is no more respect for the other, there is almost absent desire to listen to the other side. A few years ago, I attended a conference given by a retired US Senator, who was reflecting on the dynamics of politics in this country, before and after his retirement. He described an interesting finding: if one aligned all US Senators and Representatives of the two leading parties, ideologically from left to right (one look through a polarized set of glasses, right?) - in 1990, two thirds of them would be in the overlap area; in 2015, the overlap area of the two distributions had no member, there was in fact no more ideological overlap, the entire ideological spectrum of one party was to the left of the entire spectrum of the other party. And this is not specific to the US at all. In other countries, governments often consist of coalitions of parties who have no ideological overlap whatsoever. Can they govern together? Hardly. Is it a good thing that we succeeded in separating so much plus from minus, left from right, ignoring that they are in fact part of a more continuous spectrum? Or is it deleterious that those who are governed find themselves dealing with the simple task of choosing from just two extreme options or set of values? Doesn't cancel culture stem from this division?

How did we get here? How do we move back the poles towards renewed flow of electrons?

While I don't claim to have the magic potion, as a physician and after making a diagnosis, I will confess that I have the tendency to employ a therapeutic approach. So, my (unproven) proposed recipe would be as follows:

First, we recognize the causes of polarization, the sites of data inaccuracy, the inputs that may have led us towards cognitive dissonance and admit with honesty (towards ourselves and the outside world) when such phenomena set in in our belief system.

Second, after a judicious evidence-based analysis, we prune the thinking tree of its dead branches, of the clearly false data.

Third, we adjudicate together the evidence for the data that is vague, unclear or unproven.

Fourth, we identify ways to bring the electrodes or the poles together, move them closer, make them exchange information, ideas, attract each other, engage them in collaborative efforts or solution-finding time together. Information is after all, a collection of data points; let's curate it and integrate it together in a revised set of rules, principles and values.

Fifth, re-assess; measure the electricity or magnetism generated.

Then engage in a quest to make the electric current or the magnetic field stronger.

Last, find the new Voltas among ourselves, who can take us to the next horizon.

Thank you.