

University Senate President's Reflection February 2022

The Big De-Afferentation

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This month's editorial is called The Big De-Afferentation and is centered on a concept from biology – afferents and efferents.

The concept comes from the simple characterization of nervous cells or neurons as:

- **Afferent** – these neurons transmit through their long axons signals that typically come from the outside world and tell the brain what they are sensing. The afferent neurons are essentially inputs, as they bring stimuli to the brain, where the signal is integrated and processed. The most important ones are sensorial inputs such as visual, auditory, vibratory, olfactory, tactile or painful, but there are many others, for example, cognitive, emotional, behavioral, artistic, etc.
- **Efferent** – these cells carry signals away from the central nervous system via dedicated pathways, or outputs to the entire organism, as the brain coordinates a response via efferent signals back to the rest of the body.

My contention here is that the COVID pandemic created a surprising and **big de-afferentation** for many of us. As in an odd experiment of sectioning or blocking nearly all nerve afferents or inputs to the brain, the pandemic created two extreme phenomena: (1) acute lockdowns, and (2) a virtualization of our worlds.

1. The **lockdown** - this created a sudden confinement to a physical space that lacked the diversity or richness of our usual sensorial and/or cognitive processes or inputs. It reminded me of a situation while I was serving in the army (during mandatory military service in Romania, many years ago), which started with obligatory confinement on the base for the first 3 months, during basic training. No exit outside the base was allowed, the only inputs from the outside were represented by what one can see and hear from the base's barbwire fences, some occasional letters and weekly phone calls. The confinement was so strict that, for example, it took significant political influencing for a dear late friend of mine to be allowed to leave the unit for a family emergency, the death of his father – even that situation was not a guaranteed leave and he received approval for only 24 hours, merely to attend the burial. Some soldiers adapted to the situation well either from the beginning or slowly over time. Some could not tolerate it and attempted to elope no matter the consequences. Interestingly, one punishment for those not tolerating physical restriction was even stricter confinement in jail, but the risk did not deter some to attempt escape, at least for a few hours. They were, by the way, all caught in their attempts, brought back and punished with jail time in solitary confinement. This was an interesting sociologic experiment to me, and I noted that they were some hyper-acute decompensations (i.e., right from the beginning of the term) for some, and progressive deterioration and rebellion in others, who may have attempted to escape later.

While in our small sample I could not identify predictors of this type of psychological reaction, it became clear that adaptation to confinement was highly variable and for some unbearable or nearly impossible, either upfront or over time. This may provide us an explanation to why some completely opposed the idea of lockdowns, as instituted in the early 2020, for the greater good of the society, in a pandemic situation.

2. Virtualization – suddenly or slowly, our work, school and professional lives became remote and virtual, often deprived of the usual sensorial afferents. Detached, disengaged, non-participative, muted and off-camera passive attendance have been on the rise due to the virtual format. The sources of information have also become all virtual; all entertainment has become suddenly virtual or electronic, at best in small family-based groups (if not alone). All in all, an environment that lacked the typical physical interactions in teams, the sensorial perception's integration with the most complex cognitive (e.g., creative) processes, without the perception of emotions conveyed by the 1:1 contact, or the particular specificities of the language and behavior in the presence of someone else.

While some adapted well, others struggled. While some psychological traits are known predictors of inadaptability in this type of situation, it was unexpectedly burdensome to a lot of us. One category particularly and greatly affected by lockdown and virtualization was represented by children and young adults, such as our students and trainees. While some could not have anticipated it, now it does make sense: children and young adults **need** the sensorial, cognitive and behavioral inputs from their peers, educators, teachers or coaches, but especially from peers! They need the daily calibration in their physical peer environment. It has been absolutely stunning to see how the rates of anxiety, depression, aggressive behaviors, aloofness or lack of kindness skyrocketed! And I would like to blame it, at least in part, on what I called the Big De-afferentation.

COVID-19 pandemic was a long and sad natural experiment (which will hopefully be over soon), but it had a positive side to it too, which we should not forget: it reinforced the fact that our social fabric needs the inputs or afferents that we traditionally have: someone else's smile, the physical contact, the embrace, the human touch, the activities together, the sports, games or recreation in groups; we need someone else's opinion, nod of approval, appreciation, the joy of our shared accomplishments, the celebration of our team's victories. Even if remote work or virtual environments are here to stay in what seems to be a better future learning and working milieu, i.e., the hybrid model of work and school, let's find the best combination for all of us going forward. Let's repair what was deteriorated by this two-year long pandemic, and use what we have learned during this time to better our social and professional lives.

Thank you.