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Changing The Definition Does Not Make a Vaccine More Effective

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Introduction

In the absence of an anticipation-grounded science, we end up in a paradoxical situation: "Vaccines and boosters save lives. Across all ages. 96% reduction of deaths for 2 boosters vs unvaccinated" [1]. Dr. Rochelle Walensky, CDC Director (a professional in the field and also a government official in the medical care system) stated: "Vaccinated people do not carry the virus and don't get sick" (2021). In October 2022: Dr. Walensky (five-times vaccinated, recently with the dual booster) tested positive.

From 1796, when Jenner discovered that an animal virus could stimulate the immune system to protect against a disease—smallpox—to 1885, when Pasteur (using desiccated spinal cords from rabbits) saved the life of a nine-year-old boy who had been attacked by a rabid dog, there is a jump from active viruses to inactivated viruses, respectively. (Nadin, 2022 [2] presents a timeline of vaccine development.) The purpose of vaccination is clear: avoid disease. The latest step in this history is trigger via chemical reactions within the cells for the purpose of making proteins beneficial in immune self-defense. Viral vectors, DNA molecules, or the so-called messenger RNA (mRNA) can do that. Provided that we develop the science for accomplishing this task.

The new definition of vaccine

With mRNA-based vaccines vaccination becomes a "programming" task: send instructions to the cell. Since messenger ribonucleic acid in interaction with cells lead to making whatever proteins could be beneficial—as well as to proteins that undermine life—it can provoke the immune system into fighting for the life of the organism. The thought is: train the immune system on something that looks like the enemy so that when the virus makes its way into the body, it will be recognized and annihilated. The premise is as clear as it is faulty: All that is needed to control the situation is some kind of deterministic computation. Missing is the understanding of the pragmatics of life: i.e., how and why various components are integrated in living processes. Cell dynamics, include genetic processes—all part of the holistic process of maintaining life. The organism is not a deterministic machine. Contrary to claims regarding genetic determinism, the cell is not a passive copy-making mechanism. It makes choices, it learns in the process, it evolves.

Although various researchers have studied the mRNA carrier, it is far from clear how it works. Even more important: there is no basis for evaluating long-term consequences of using it. The chemistry of the mRNA carrier was altered in order to avoid rejection by the body. Does this change make a difference? The same holds true for the mechanism of delivering the mRNA. (A rather rich-in-detail report is Dolgin, "The tangled history of mRNA vaccines, Nature, 14 September 2021 [3].) In reaction to the pandemic the deployment what of what was featured as a new form of vaccination remains

an accomplishment impossible to ignore. Indeed, stimulating the immune capabilities of the organism is a medical option with a good record.

At closer look, the unusual path pursued in respect to the SARS-CoV-2 virus (at least in its initial composition) raises many questions. In particular, questions regarding what motivates science, in the age of Covid, to pursue its goals. Once the vaccine was released, the number of hospitalizations and deaths through COVID-19 was substantially reduced. The record of this new genetically engineered vaccine is as undisputable as is the realization that the pandemic is a self-inflicted tragedy: confounding societal responsibilities and interests, economic and military priorities, contrary to the well-being of the members of society. What was NOT reduced is the number of infections. Vaccinated people got sick—and sometimes very sick, and for a long time (Long Covid).

The sense of entitlement in our current society and the demands it makes on science explain, but does not justify, the demand for solutions—including the vaccine and the antiviral drugs—which in the long run are ineffective, and often the source of serious side-effects. Behavioral choices and modifications—individual responsibility steadily exercised—could have spared the world the agony of a pandemic that should not have happened. Neither medicine nor pharmacology can substitute for prevention—an anticipatory "vaccine."

The mRNA vaccines are, in one way or another, game changers. There is a lot to learn from what it took to make them, and what they actually are. In particular, it is time to ask why means of prevention—because that's what vaccines are supposed to be—are turned into means of reaction: Get vaccinated if you prefer a milder form of the disease affecting you. At least until their protection decreases—the waning effect. Is it true that people who received a third injection (the booster) are ten times (or more) less in danger than those injected only two times? If yes, then for how long? The second booster (never mind the 3rd and the new fourth booster) could [sic!] protect those over 65 years of age. Should we understand that vaccines are now means for reducing the risk of hospitalization? The Paxlovid pill is supposed to have the same result. Will those who already had Covid (some two or even three times) be even more better off—the so-called "super-immunity"—if vaccinated [4]. Are vaccines now necessary for those who already acquired natural immunity? From a logical perspective, this does not make sense. From a medical perspective, it changes the foundations of immunology. Of course, these questions deserve explanation—even justification. After all, the subject concerns human life, not the commercial success of new products.

The immune system is an anticipatory system

Anticipatory action, as an expression of the immune system, is characteristic of living processes. Behavior that prevents harm—physical injury or emotional disturbance, for instance—is in some ways a "vaccine." The operative notion is: PREVENT! But if you had smallpox, natural immunity is expected. After all, vaccines—get a "smaller" infection—are a path towards natural immunity. In life, a lot is learned, a lot is discovered: the "vaccine" of prevention includes avoiding certain foods (to prevent sickness, overweight, damage to organs, etc.). Hygiene is sui generis "vaccine." Let us also remember that anticipatory processes are non-deterministic. This means that the same anticipatory action (such as vaccination) can lead to a variety of possible outcomes.

To detail what anticipatory vaccination is supposed to be is a prerequisite for understanding the dangers implicit in the misappropriation of anticipatory action for reactive purposes. As a prelude: the goal of vaccination is to prevent illness. But in the context of Covid-19, the goal post was moved. In the context of medicine that is increasingly becoming reliant on repair technology, the objective changes. This became an example of science by fiat. Data document that instead of effective immunity against SARS-CoV-2, what is delivered is a less symptomatic condition. After vaccination there is no need, or only minimal justification, to be treated in a hospital. This helped contain the pandemic. In retrospect, after the "Get vaccinated" edict (close to mandatory in some countries), several vaccines developed specifically for the Covid-19 condition turned out to be antiviral drugs. Nevertheless, the underlying science, i.e., the biology, invites questioning—especially the politics behind selecting and promoting some drugs over others, to the detriment of obtaining valid remedies.

If the understanding of the anticipatory nature of life processes had guided the preventive effort as well as the vaccine development effort, the world would have been spared a pandemic. If this sounds ominous, it is because the events leading to the January 31, 2020, Emergency Use Authorization (granted in December 2020) of some of the vaccines come close to foreshadowing, if not an evil, at least a misguided course of remedy.

The anticipatory immune system is where it all starts. It is the impressive outcome of an evolutionary path along which anticipatory action driven by the possible future facilitates maintenance of life. From the biological system science perspective, the possible future means the ever-larger open set of possible states (from incipient life to death). The immune system is not a structural entity, like control systems in machines. And it is not some incidental or even pre-programed biochemical configuration supposed to protect from pathogens. Rather, it is a large whole-body encompassing functional process. For the immune system, the possible future (virus, microbe, poison, wound) is what might affect biological processes that keep the organism alive. Precursors of immune cells are continuously produced from bone marrow. The variety of precursor cell types corresponds to the open-ended

nature of living processes. These cells make it into the skin, blood stream, thymus, lymphatic system, spleen, and mucosal tissue. And they are continuously renewed. The knowledge acquired from observing how the process unfolds and changes over time inspired various methods for testing the performance of the immune system and for stimulating it. We know that to vaccinate ultimately means to induce antibodies. This was achieved, in the past, through means closer to intuition: fight fire with fire, infection with infection—un diavolo scaccia l'altro (One devil chases the other away).

The empirical evidence for this practice is relevant only insofar as knowledge about living processes is often derived along this line. The term antibody described what in the immune serum neutralized the toxins (poisons, or virus infections) and pathogenic bacteria. The body, as living matter, produces antibodies that interact with pathogens. Synthetic vaccines trigger the production of different antibodies. The science guiding the new technology is still incomplete. Therefore, the record of such vaccination is far from acceptable. This explains why some people—among them many physicians—oppose vaccination. It is time to focus on the science and shake off the politicization of medicine.

Acknowledgement

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Conflict of Interest

None.

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