



A Holistic View of the Phenomenon of Infection

Lecture from the livestream seminar “Update on Covid-19 Infectiology and Integrative Medicine” | April 24–25, 2020

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Dear Listeners and Viewers

Susceptibility to infection and thus immunological function are influenced by the human soul and spirit. When we open a standard textbook on infectiology, we find an equation that may not appeal to every mathematician, but which nevertheless says “exposure plus disposition equals infection”. Thus, to understand infectious diseases, we must look at exposure and disposition together.

Virosphere and disease disposition

On the physical plane, we use masks to try to protect people from exposure, otherwise viruses may invade, break through the person’s integrity and enter their cellular milieu.

At present, we understandably tend to see viruses as “enemies” and tend to forget that viruses also have a physiological purpose. We fought against bacteria for a long time until we discovered their importance for human health as microbiota or a microbiome.

Thus there are several aspects to viruses, one of which is of course their pathogenicity. But it is also true that we owe an enormous amount to the virosphere in our environment, even in terms of evolution. We are surrounded by viruses on an amazing scale, i.e., by small particles measuring 20 to 200

nanometers. About 10 million viruses are said to be present in one milliliter of seawater.

If we now look at the virosphere that is so connected with our planet’s hydrosphere, we must ask about its relationship to human beings in terms of physiology and pathogenicity. For me it was always a very helpful thought to consider the organotropy of viruses. Viruses develop relationships with certain organs: thus, herpes viruses can be associated with diseases of the nervous system and lead to encephalitis, i.e., inflammation of the brain; others are triggers for pneumonia, i.e., they affect the middle human being, such as SARS-CoV-2; we know of viruses that affect the heart, such as Parvo-B19, and finally there are those that affect the metabolic organization (hepatitis viruses or gastroenteritis caused by noroviruses).

One gets the impression that the viral organotropic threefold division of our organism into a neurosensory organization, a rhythmic organization with the heart and lungs and finally a metabolic organization is also found in the virosphere. The human microcosm corresponds to the surrounding macrocosm. Obviously, however, human interventions in the physiological order of the ecosphere lead to disintegrations that dispose to viral infectious diseases. Man-made intervention in the macrosphere seems to lead to the autonomization of viruses, which then fall out of the physiological composition of the virosphere.

Alexander von Humboldt, whose 250th birthday we celebrated last year, already assumed an organismic understanding of the planet and its surrounding layers – he spoke of how fragmentation and destruction of nature would lead to negative repercussions for human beings. We must therefore recognize the link between the viral crisis we are now facing and the earth's ecological crisis, that is, the relationship between the health of the planet and human health.

We thus initially have a connection between our physical body and the virosphere that surrounds us, in which viruses can be absorbed into the interior of the cells and from there cause illness.

Then we come to a second level and that is the level of life. When we look at immunological processes and thus at this miracle of immunological reactions in lymph nodes and their follicular centers, we realize what comprehensive life forces are required to develop immunological envelopment. The immune system creates a function of isolation from the environment and thus an interior space. Immunological functions are dependent on the human soul. We know of these relationships from psychoneuroimmunology. When Goethe was almost eighty years old, he told his secretary Eckermann about an event in his life that related to an infectious disease: "I can tell a fact from my own life, where during an instance of typhus I was inevitably exposed to the infection and where I warded off the disease by determined will alone. It is incredible what moral will is able to do in such cases; it penetrates the body, as it were, and puts it into an active state that repels all harmful influences. Fear, on the other hand, is a state where it becomes easy for any enemy to take possession of us."

So, one could almost write these sentences as the motto for an immunology/infectiology textbook, pointing to courage as a positive strengthening force.

In addition to this soul aspect, there is an inner, spiritual and individual level, because immunity means that we face the world as an individual human being, immunologically creating a space of our own in which our individual 'I' can work. The activity of our 'I' lives in our immune functions. The soul can be described as a kind of developmental space

for the 'I'. This developmental space has protective layers and it is possible for something infectious to penetrate, so to speak, into the developmental space of the 'I'. A particularly touching example is the situation that Jacques Lusseyran once described as a Holocaust survivor from Buchenwald in his last radio address, which he unfortunately could not present in public because he died in a fatal car accident. This man, who became blind at an early age, addressed the public at that time with insistent words advocating the protection of the inner world. "We need not only environmental protection, but also internal environmental protection." The radio address was entitled "Against the Pollution of the 'I'", that is, it was a warning against internal-world pollution in correspondence with external and environmental pollution. So much is invading our 'I'-space! We have moments of fear and danger that affect us inwardly, not only psychologically, but also as 'I'-beings, moments which weaken us or call for Goethean courage. We know situations where information spreads "virally" and seemingly "infectiously", attacking this soul space of the self with news, fake news and theories. In view of the many, sometimes very simple or monocausal ideas about the Covid-19 pandemic, we are required to make an inner "immunological" effort, which consists in understanding and processing. The question of susceptibility to infection thus has these four levels: the physical-bodily level of infection, the level of immunological life processes, the mental level of immunology, and the spiritual level, which is related to courage, that is, to what Goethe referred to in the quotation mentioned.

The multidimensionality of the disease

When we look at it this way, however, we must be aware of one difficulty. For if we were to draw the reverse conclusion from the Goethe quote, that all Covid 19 sufferers have too little courage, then we would turn a descriptive and absolutely meaningful characterization into a morally evaluating one, and that must not be allowed to happen. For we see what great people, what esteemed colleagues have died of this disease, or even if we think of the priests who died in Italy, we can certainly not assume that they

were despondent people who succumbed to the viruses. On the contrary, this always has several dimensions. Of course we have the individual dimension and also the destiny of each person to consider, but diseases – endemic and pandemic infections make this clear – involve larger groups of people, so that their significance is not only individual, it is something that affects the whole of humanity. The individual experience and suffering of an illness is also the suffering of humanity, which has to do with the present time, in that Covid-19 appears just now and not at another time.

In this way we notice how personal destiny is placed in wider circles, in larger contexts. One may even ask (which I am simply allowing myself to dare say here) whether every time someone gets through this illness they are not contributing to a transformation of something which, like a kind of global pandemic disease, faces humanity as a challenge.

Aspects of susceptibility to infection

If we now want to address the question of susceptibility to infection or resilience, we must distinguish three areas: one area relates to pathogens, which we have already considered under several aspects, the second to disposition, the third finally to inflammation, through which the organism wants to overcome an intruding foreign quality. The entire organism orchestrates an inflammatory response and the conductor is the person's 'I'-organization. This requires a responsible approach to inflammation and not simply its suppression through, for example, anti-inflammatory therapy.

A person's disposition is influenced by various factors. Healthy exercise is of great importance for resilience and for reducing susceptibility to infections. We know that a sedentary lifestyle weakens the immune system. But we also know that overtaxing oneself running marathons also naturally has an immunosuppressive effect. Healthy, ensouled movement has something that promotes the immune system.

Nutrition also plays a role. For example, it is known that obesity is associated with a reduced disposition and an increase in susceptibility to infections.

Finally, sleep plays an important role in immunity and resilience. Too little sleep leads to susceptibility to infection. There is – and Steiner already pointed this out – not only the healthy sleep that we desire every night, but also the sleep that is too long or too short, with different health effects. According to current knowledge, too little sleep is the most significant factor in susceptibility to infection.

Then we have the influence of the soul on resilience and susceptibility to infection: fear and anxiety are currently spreading globally and pandemically, so we must develop something healing towards them, strengthen courage and also develop perspectives for the future.

But there is something else that is extremely important in the context of Covid-19: the feeling of loneliness weakens the immune system. Loneliness is a factor that also influences a person's disposition. When we live in isolation, we need the opposite, namely a culture of connection, i.e., one of overcoming loneliness, because loneliness is something that weakens our inner situation. Depression has a similar effect. But an excess of information also seems to have significance for susceptibility to infection. I was quite astonished to find a study that examined the infectiological significance of Facebook and described Facebook-induced immune suppression. The size of the network is related to its suppressive effects on the immune system.

So, we have dispositional factors that are more physical and life-hygienic, we have others that relate to the soul, and those that are linked to information overload. We can no longer process the information; it gets deposited and leads to a kind of "intellectual obesity" with health effects. These connections make it clear that activating the sphere of consciousness too strongly has a disease-causing, life-consuming and disempowering effect, as well as a corresponding negative influence on the immune system. A soul that is too strongly oriented towards consciousness consumes life forces.

Connection between thinking forces and life forces

This brings us to an important connection which is of outstanding importance for Anthroposophic Med-

icine. It is the connection between thinking forces and life forces. When we develop our consciousness too much, we consume life forces. This connection, which Rudolf Steiner continued to draw attention to until the last days of his career and which is of great importance for psychosomatic medicine, was already mentioned by Carl Fortlage in the 19th century. We need an approach to psychosomatic medicine that connects the life of soul with that of the body, i.e., one which links experience with the life of the organism. We need an understanding of the human life organization that knows two arenas: one that is active organically and the other that transforms into the world of consciousness.

Many phenomena illuminate this connection between soul life and the physiological life development of the human organism. For example, the activity of soul and spirit is known to be connected with the activity of the enzyme telomerase, which is also very important for the immune system. Stress and mental strain weaken the immune system and lead to increased susceptibility to infections.

Conversely, inner activity of soul and spirit can have a healing effect. Here we know of many studies on the importance of meditation for supporting healing and health forces. Thus, the capacities of soul and spirit are important causes of illness, but also essential sources of health. There is also spirit that has a healing effect and is not just the conscious activity that leads to illness. It is a spiritual dimension of immunology, which does not only shed light on the bodily immune functions or represent their soul context, but shows how human spiritual activity has immunological effects.

This raises the question of perspectives that promote resilience and thus reduce susceptibility to infection. Three major mental perspectives come into focus here. Many people currently suffer from biographical disorientation or, to put it more strongly, they are suffering loss of meaning, as well as doubts about what is happening in the world. This is certainly a global phenomenon that does not just depend on Covid-19. As a result of the fact that the opportunity to work has disappeared for many people and their usual everyday life has also changed considerably, due to isolation measures, meaningful tasks and goals are often lost. I have the impression that

the current situation makes the mental situation of many people visible as if through a magnifying glass, because the question of meaning and perspectives for the future is widespread, even independently of the Covid-19 pandemic. In many cases, emotional emptiness and depressive moods develop through being isolated from people, but also through being isolated from normal everyday life. Mental emptiness is sometimes like a vacuum that can suck in many things uncontrollably. After the question of meaning a second level arises: depressive emptiness, where the person cannot feel or develop joy or positive forces.

Then we have fear and anxiety as a third level: fear of contagion, but also existential fear if one no longer knows how one is going to feed oneself, because one is threatened by the loss of all economic possibilities and thus the loss of the basis for one's existence.

Now it is important to inwardly use the times of enforced calm and lockdown to create new perspectives. Viktor Frankl has given one of his books the title *Yes to Life in Spite of Everything*. He points out ways in which, in hopeless situations, when experiencing doubt and darkness regarding future perspectives, something can be developed that nevertheless says yes to life and gives us strength: "Anyone who has a Why to live" (Nietzsche) "can stand almost any How" (Frankl). Frankl therefore described his method as a psychology of heights, which aligns mental development with spiritual perspectives and content.

If we look at the second level, soul emptiness, we need the energizing quality of human relationships. In times of outer isolation we need mental and spiritual connections to other people, because loneliness, the feeling of loneliness, weakens us immunologically, while bridges to other people, which generate warmth through warm and cordial interest in the other person, strengthen us immunologically. We need a path that aims to go from external contact to actual encounter, to encounter between beings, to what is really the essence of the other person.

The globally spreading fear makes clear the increasingly widening gap between people who are still coping reasonably well with their situation and

others who are suffering hardship and fear of existential threats. We need brotherliness and sisterliness. Can we give help either directly or through organizations that are close to us and which we trust? For example, can we do something to alleviate the fate of particularly affected children in the sense of practiced brotherliness?

Brotherliness, human encounter and appreciation

If we summarize these three perspectives for development, we see that it is a matter of brotherliness and sisterliness, of essential encounters with other people and of a meaningful perspectives and spiritual values. The feeling may of course develop that these ideals are far away and therefore unattainable. Ideals can inspire, but they can also be depressing due to their unfulfillability. That is why there is a beautiful saying that ideals may be as far away as stars so that they do not overwhelm us but can give us light and direction.

At a time which was also associated with emotional distress, Steiner gave a lecture on how the inner distress of the present could be overcome. Elsewhere he mentioned the three developmental perspectives or ideals described, which are not yet human ideals but rather angelic ideals. Through them people can experience an orientation for their development in order to become ever more able to meet the angels.

This is how I would like to summarize these thoughts on the developmental issues relating to the corona pandemic: susceptibility to infections or, stated positively, increased resilience, is influenced by our physical situation, i.e., by diet, exercise, our relationship to light and thus to the sun, and healthy sleep. We need courage in Goethe's sense for questions of shaping our lives and spiritual perspectives that give meaning. Spiritual orientation needs inner practice so that it does not remain at the level of theoretical thoughts. It can lead to a meditative path of knowing if the person has questions of this nature. Meditation can have a healing effect on the injured soul as well as a healing effect on the body threatened by infection.