

# Strategic Elements n°0065

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## KEYWORDS

Covid-19  
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## ABSTRACT

KELONY<sup>®</sup> First Risk-Rating Agency, has succeeded in going beyond the traditional probabilistic approach to risk and has created more precise instruments for measuring and quantifying Risk:

1. The KELONY<sup>®</sup> Risk-Rating, a universal measurement scale for all types of Risk to rate companies, processes or situational contexts.
2. Risk-Neutralization<sup>™</sup>, a new discipline based on Cindynics, the Science of Risk.
3. AlgoSev<sup>™</sup>, an inductive inferential artificial engine with quantum logic programmed in Hyperfarsight<sup>™</sup> algorithmic, that enables the validation of the best defense strategies to neutralise Risk.

These tools merge in VeVa<sup>™</sup>, a unique and convergent systemic Protocol. Through intercorrelated Risk and Apex Risk identification, VeVa<sup>™</sup> empowers the level of protection in accordance with the Values actively supported by KELONY<sup>®</sup>: "Life First!", i.e. Life above all whatever it takes.

This document, KELONY<sup>®</sup> Strategic Elements n°000065, is focused on the Coronavirus, its spread throughout the world and the Risk that it brings along, as well as the disruptive solutions that can be adopted to counteract this pandemic, to better adapt and prepare to future situations and to be able to recover more quickly. The World Protection Forum<sup>™</sup> is the perfect framework to foster these upmost research outputs to improve awareness of what can be effectively done to protect people.

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## 1 Introduction

Covid-19 is not a new emergency phenomenon for mankind: as it will be illustrated in Sec. 3, there are many epidemics which humans have had to fight throughout history.

Even the virus species to which this type belongs was not unknown: Coronaviruses (CoV) are a large family of respiratory viruses that can cause mild to moderate diseases, from the common cold to respiratory syndromes such as MERS and SARS. They are called so, because of the crown-shaped tips that are present on their surface.

Nevertheless, Covid-19 generated a pandemic on a planetary scale, creating alarm and panic all around the world. Since years KELONY<sup>®</sup>, First Risk-Rating Agency, has been proposing a totally disruptive frame of mind, protocol and method far beyond "risk analysis": that is Risk-Rating.

Within the World Protection Forum - WPF<sup>™</sup> (Sec. 2) launched in January 2020 and prepared since 2019,

KELONY<sup>®</sup> presented the three Sharp Risks, the major risks that man will have to deal with:

- Universe and World Ecosystem
- World's sublimation
- Sovereignty/Authority

Health risk is part of the ecosystem issues, ranked at the first place, as KELONY<sup>®</sup> forecasted it since last year. In the specific context of a pandemic, KELONY<sup>®</sup> wants to emphasize that it is not sufficient to focus attention and means only on the health aspect of the emergency. We need an all-Risk approach, because there are at least 3 components of Risk for people: social, economic and health. Sec. 4 explains KELONY<sup>®</sup>'s proposal to deal with the pandemic: the needed frame of mind and the disruptive methodology to face the crisis escalation, in order to revert the trend of lagging behind the infection, yet to be ahead of it.

The heart of this deep innovative methodology relies on a new definition of parameters needed to classify an epidemic,

presented in Sec. 5 whereas final conclusions can be found in Sec. 6.

## 2 The World Protection Forum™

The World Protection Forum™ [For20] was born in 2020 at the instigation of KELONY® as a factual action aimed at protecting people from Risk in every context of life, through scientific research and a collective disclosure work by an international level community, committed to the protection of human beings. In order to make this possible, it is necessary to invert the cognitive framework and strengthen the ability to imagine new scenarios; not starting anymore from specific components of Risk but considering what is necessary to be protected in facts. Just as when waging war, you rely on strategic commanders rather than blacksmiths, even though they are vital for forging weapons.

## 3 The Origin of Pandemics

There are many different viruses from epidemics that humanity already had to deal with in the past. We clearly need then to understand what the past is trying to say, as it could lead to new information and solutions to be used to protect people in the future:

- 1347-1351 - Black Death, carried by fleas living on rodents, from Cina  
Estimated number of deaths: around 100.000.000
- XIX century-present - Cholera, often carried by uncooked seafood, from India  
Estimated number of deaths: around 100.000 per year
- 1918-1920 - Spanish flu  
Estimated number of deaths: 25.000.000 to 100.000.000
- 1956-1958 - Asian flu, from a mutation in wild ducks in Cina  
Estimated number of deaths: 1.000.000 to 4.000.000
- 1970s-present - HIV, from a mutation in chimps in Congo  
Estimated number of deaths: around 32.000.000
- Until 1980 - Smallpox, from India or Egypt  
Estimated number of deaths: around 300.000.000
- 2002-2003 - SARS, from bats in China  
Number of deaths: 774
- 2004 - Avian influenza, from poultry kept in Vietnam and Thailand  
Estimated number of deaths: around 170
- 2009 - Swine flu, from Mexico  
Estimated number of deaths: 18.000
- 2012 - MERS, from Saudi Arabia  
Estimated number of deaths: around 300
- 2013-2016 - Ebola, from sub-saharan Africa  
Estimated number of deaths: 11.000

In 2040, it is estimated that in China, as a result of the famous "one child" policy that remained in force by law from 1979 to 2010, the elderly (65+) will be more than twice as children under the age of 15, and the average age will rise from 28 to 46. The 21st century will be "the Asian century". China and India at the top of the list, followed by Indonesia and the Philippines, will face an extraordinary demographic winter, with an increase in vulnerability to infection by the CoV virus genus. This vulnerability will affect a preponderant portion of the world's population, most likely becoming the primary source of widespread epidemic outbreaks with sufficient magnitude of contagion. This context requires a drastic

change in the methodology and the countermeasures that must be immediately addressed to the pandemic mitigation framework.

## 4 Keep the Gun Loaded

There is a conceptual error with the general response framework meant to manage these kinds of emergencies. The general response involves 2 axioms:

1. increase the alert level and the restriction measures follows the progression of the infection.
2. Decision-making relies only on visible data.

This implies that:

1. Governments react belatedly.
2. Intelligence is one-eyed.

The classic framework is not appropriate and results in a large time discrepancy between how the infection is spreading and the countermeasures taken by Governments. Let us start from point 2 "intelligence". As decisions are based only on what is seen and scientifically understood, the big picture is lost; considering that only positive cases are infected, implies discovering the next day that in reality there are many more infected people, thus fueling the inflation of numbers. In other words, instead of thinking that what cannot be seen does not exist and not taking it into account, the logic should be reversed according to a new frame of mind.

The new frame of mind can be understood through a very simple example: in order to protect people, a policeman is always supposed to carry his weapon around loaded, even if no situation at that moment requires him to use it. In the same way, a country is meant to be ready for an outbreak of these proportions instead of being at the mercy of events. This has to be achieved in two main ways. The first one is to only adopt "Before Or Nothing" process ("BON" which stands as "good" in French), in order not to be unprepared when unexpected events happen: as an example, in 2018 Italian hospitals had an average of only 3,5 beds per 1000 people [Sal19], and the USA only 2,8 beds per 1000 people [Eco18]. Clearly not enough whatever the disease.

The second point is to adopt a new protocol, inverting the trend of lagging behind the infection: instead of waiting to see how the infection progresses and adjusting the alert level along with it, the alert rate should be increased to the highest level starting from the beginning according to its geographical origin, and then if the infection is not severe enough to justify this level, decrease it step-by step always according to a *reductio ad absurdum* logic. This new protocol gives the Governments 3 advantages:

1. It costs less effort in the end.
2. It paradoxically causes less chaos and panic starting from top alert level and reducing it, than giving never-ending-like increasing last minute decisions.
3. It gives more control over the restricting measures to be implemented, as people are more aware of what is to come.

## 5 The Risk Momentum

The most important quantity in motion science is the **momentum**. It is the product of *mass* and *velocity*.

$$\vec{p} = m\vec{v}$$

The momentum governs the effectiveness of a collision, e.g. a car accident or a gunshot.

But such processing is not so intuitive: if we imagine to completely forget physics; mass and velocity are two very different quantities, so why should we multiply them? What is the meaning of their product?

Now, the answer is well known by everybody after the Impulse-Momentum Theorem demonstrated how the **impulse**, product between *force* and interval of *time*, is indeed equal to the change of momentum.

$$\vec{J} = \Delta\vec{p}, \quad \vec{F}\Delta t = m\Delta\vec{v}$$

A very important application of the studies upon impulse is the improvement of safety and reduction of injuries. In many cases, an object needs to be brought to a rest from its acquired velocity. This means there is a specific change in momentum. If the time during which the Momentum changes could be increased, then the force that should be applied would be less causing less damage. This is the principle behind arrestor beds for trucks, airbags, and bending your knees when you jump off a chair and land on the ground. Air bags are used in motor vehicles because they are able to reduce the effect of the force experienced by a driver or its passengers during an accident.

This is reached by extending the time required to stop the momentum of the driver and passenger. If instead of hitting the windshield, the driver and passenger hit an air bag, then the time of the impact is increased. Increasing the time of the impact results in a decrease in the force.

$$\vec{F} = \frac{\Delta\vec{p}}{\Delta t}$$

Therefore if  $t$  is increased, for a given change in momentum, the force on the body is reduced.

In epidemic events, we could falsely consider separately the infection rate and mortality rate. These two quantities are computed as follows:

$$\text{Infection rate} = \frac{I}{P} = \frac{N^{\circ}\text{infected}}{N^{\circ}\text{people who may be infected}}$$

$$\text{Mortality rate} = \frac{M/t}{I} = \frac{N^{\circ}\text{deaths per year}}{N^{\circ}\text{infected}}$$

These indexes can be computed for each Country.

At first it could not seem so intuitive to multiply these two quantities, same as in the case of Momentum. In reality, the new measure that allows to monitor the spread of viral infection is the latter product, defined as the "Risk Momentum".

$$\begin{aligned} \text{Risk Momentum} &= \sum_i k_i \text{Infection rate}_i \cdot \sum_i k_i \text{Mortality rate}_i \\ &= \sum_i k_i \left( \frac{X_i}{P_i} \cdot \frac{M_i/t}{X_i} \right) \\ &= \sum_i k_i \left( \frac{M_i/t}{P_i} \right) \end{aligned}$$

where  $i$  is the index relative to each Country and  $k_i$  is a weighting coefficient different for each Nation, depending on the quantity of swabs carried out, the hygienic conditions and the quality of the healthcare services.

As with a gunshot, what counts as a main variable is not so much the speed of the bullet or its calibre and therefore its weight, but its impulse, equivalent to the energy discharged into the target. Similarly, in an epidemic situation, what counts is not the Mortality rate or the Infection rate, but the Risk Momentum. The greatest decision-making process for Governments must rely on the finest intelligence, given throughout the more appropriate measure.

## 6 Conclusions

The virus infectivity has no end of its own, unless we imply eliminating all the infection reservoirs, bats, snakes and so on. In addition RNA viruses are characterized by mutations of the genome at each replication cycle, making it impossible to reach the condition of acquired immunity: the perfect vaccine. The kinetic model, helps in understanding on the one hand how to reduce to a limit close to zero the Risk Momentum, and on the other hand that it cannot be stopped completely.

The answer to a "when will it end?" is therefore mostly a social and economic concept, driven by the collective perception of fear, notoriously unable to simultaneously manage multiple states of anxiety of equal severity. Unfortunately fear changes as soon as a new critical event occurs. It is therefore a non-desirable driver. Risk Momentum is the key driver for utmost decision-making.

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