

RETHINKING SECURITY IN THE DAYS OF COVID TO DISCOVER NON-TECHNICAL SKILLS

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ABSTRACT

One of the basic non-technical skills is situation awareness, which Endsley defines as the “perception of the elements of the environment present within a period of time and a certain space, the understanding of their meaning and the projection of their status in the immediate future “. The prerequisite is continuous monitoring of the environment.

Loss of situational awareness has been recognized as the leading cause of aviation accidents particularly those involving highly automated aircraft.

Endsley proposes a differentiation of situation awareness on the basis of three levels:

1. *Collection of information;*
2. *Interpretation of the information;*
3. *Anticipation of future states.*

In the collection of information there may be thorns such as the unavailability of data or difficult to perceive, the failure in the analysis or observation of the data or a bad interpretation of the latter. In the second and third levels, there may be a lack, a lack or misuse of mental models, an overestimation in conditions of lack of information, or a loss of memory.

The perception of risk is to be understood as the ability to identify a source of danger as soon as possible. It is a personal process; we decide to face or avoid the risk situation in a subjective way.

This process conditions actions, behaviors, evaluations, choices about an entity or a potentially dangerous situation.

The subjective perception of risk is not linear and is not directly proportional to the increase in the dangers; it is subject to influences and distortions and is linked to psychological, cultural and social aspects.

The emergence of the concept of risk dates back to the pre-modern era when the first maritime companies were established, this term was used in the insurance field to indicate the dangers that could be encountered during sea crossings; the concept of risk was traced exclusively to supernatural otherworldly forces and fatality.

Towards the end of the eighteenth century, the concept of probability is elaborated in mathematics and it is begun to realize that some events, until then ascribed to fate, actually occurred with a describable regularity, and were therefore predictable in this sense.¹

Risk and danger are terms often used interchangeably, but these are two concepts which, despite having elements in common, diverge in meaning.²

While the term hazard (hazard) refers to a characteristic of the object or situation that can cause damage, the term risk adds to the concept of danger the probability of coming into contact with it and being affected by it.

The danger recalls the concepts of certainty and certainty, has an objective value and is strictly linked to the object to which it refers (if a substance is dangerous it remains so regardless of who uses it), the risk, on the other hand, also has a subjective value, it is the evaluation of the possibility of coming into contact with a danger and with the consequent damage.

Occupational risk is the assessment of the probability that the worker will come into contact with the hazard in proportion to the severity factor of the damage that the same worker could suffer.

The risk formula is $R = p \times G$ where with p we mean the probability and with G the severity of the outcome. To know the risk and cope with it, it is first of all necessary to evaluate it, the adoption of suitable prevention and protection measures is the first activity that must be placed in chronological order to make the work activity safer.

Thinking about safety from a technical and technological point of view is certainly very important but it is not a sufficient condition, behind every accident we have an individual who makes decisions for which it is fundamental, in order to address the issue of health and safety in a integrated, also consider the man variable in its entirety. The perception of risk, understood as a cognitive process that guides people's behavior, plays an important role in preventive strategies, focuses on the “human factor” in workplace safety, an element that more than any other contributes to injury determinism.

Human error cannot be radically eliminated but it is possible to identify and minimize it by promoting the spread of “Non - technical skills” which complementary to technical skills, can contribute to the activation

¹ Lemma, P., Percezione del rischio e modernità. Convegno nazionale “importanza di una comunicazione per lo sviluppo dei programmi vaccinali”. Comunicazione. Genova 21 ottobre 2004

² Orciano M., Salute e sicurezza sul lavoro. I rappresentanti dei lavoratori per la sicurezza nella Regione Marche, quaderni di ricerca CRISS n. 1, Milano 2015

of safe and effective performance.

“Non-technical skills are all those skills at a cognitive, behavioral and interpersonal level that are not specific to the expertise of a profession but which are equally important in the success of operational practices while maintaining the highest degree of safety”.³ The parameters of safety and work performance are related to non-technical skills that can be placed both at the individual level (decision-making skills, task orientation, situation awareness, stress management), and at the group level (skills of the group to coordinate, communicate and exercise effective and authoritative leadership).

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The perception of risk is to be understood as the ability to identify a source of danger as soon as possible. It is a personal process; we decide to face or avoid the risk situation in a subjective way.

This process conditions actions, behaviors, evaluations, choices about an entity or a potentially dangerous situation. The subjective perception of risk is not linear and is not directly proportional to the increase in the dangers; it is subject to influences and distortions and is linked to psychological, cultural and social aspects.⁶

Not always all aspects of a risky situation are perceived and this can lead to an overestimation or underestimation of the risk; there are some specific factors that regulate our perception and make certain things scare us more than others even if they are not really dangerous. Let's see some of them:

- 1) Control: we are less afraid of situations we think we can control, even natural disasters or climate

change are scary to the extent that they become uncontrollable.

- 2) Familiarity: we perceive the things that are most common to us as less risky (for example we are not afraid of stairs or hairdryers) even if they are the ones that cause the greatest number of accidents; family hazards are believed to be less likely.⁷
- 3) Proximity: we perceive as more serious risks that concern us personally or that concern people or environments immediately close to us.
- 4) Personalization: the description of a particular case is more frightening than the description of the danger in general (the photographs of the consequences of Chernobyl on children impress us much more than reading a newspaper article).
- 5) The imagination: we underestimate the risks that appear less frightening to us (we are much more afraid of dying in a fire than dying of a heart attack).
- 6) The catastrophic nature: we fear catastrophes, that is, events that strike on a large scale, take place quickly and are located in one point (for example, a massacre is more effective than murder).
- 7) The calculation of risks and benefits: the greater the benefits we derive from a situation, the less importance we give to the related risks.
- 8) Uncertainty: risks that are not visible, situations that we do not understand or of which we have no experience scare us more.⁸

Our decisions are often guided by assessments based on mental processes that we unwittingly adopt and which in psychology are described as heuristics, these “reasoning shortcuts” allow us to reach a conclusion quickly.

One of these shortcuts is the heuristic of consent or conformity to the majority (so everyone fan) which indicates that sort of attitude that pushes us to be influenced by others, this modality occurs more frequently if the topic is unfamiliar or if the possibility of processing information is low.⁹

In the context of conduct at risk, information on the behavior of others makes us take precautionary measures in a proportional way, if for example we learn that 12% of people use protective measures we will be less likely to use them, we will tend to use them against if they told me that 88% use them.¹⁰

Optimistic bias or unrealistic optimism (“it doesn't happen to me”) is the belief that you are able to control a situation and consider yourself immune to harm. Our perception of risk is lower when we perform those activities we do on a daily basis such as driving or smoking. This phenomenon is known as the “illusion of control”.

The discrepancy between knowledge and behavior

³ Prati G., Pietrantoni L., Rea A. “Competenze non tecniche e marcatori comportamentali nelle professioni a rischio.” *Nuove tendenze della psicologia* 4.3 (2006): 353-370

⁴ <https://www.puntosicuro.it/.../fattore-umano-sicurezza-sul-lavoro-AR-16109>

⁵ Di Nuovo S., *La valutazione dell'attenzione dalla ricerca sperimentale ai contesti applicativi*, Franco Angeli, Milano 2006, p.91

⁶ Smelser N. J., *Theory of collective behavior*, the Macmillan Company, New York 1963

⁷ Covello T., *La percezione dei rischi tecnologici: un a rassegna della letteratura*, in S. Sartori, T. Squillaciotti, “RTI/ Studi-Valsamb”, 13, 1984

⁸ Morini S., *Il rischio da Pascal a Fukushima*, Bollati Boringhieri, Torino 2014, p. 41

⁹ Maldonato M., *Quando decidiamo. Siamo attori consapevoli o macchine biologiche?*, Giunti, Firenze 2015

¹⁰ Buunk, Bram P., Regina JJM EIJDEN, and Frans W. Siero. “The Double-Edged Sword of Providing Information About the Prevalence of Safer Sex.” *Journal of Applied Social Psychology* 32.4 (2002): 684-699

occurs when, even knowing that a certain behavior is risky, it is performed anyway, demonstrating that although knowledge is a fundamental prerequisite for implementing preventive behavior alone, it is not sufficient.

The results of a study of 32 coal miners in the Appalachian Mountains at high risk for noise induced hearing loss (NIHL), show that two categories of barriers (environmental and individual) prevent miners from using their hearing protectors. despite having high levels of knowledge and perception of negative consequences.¹¹

A decisive role in the perception of risk is played by trust and communication, the media, for example, can trigger fears about non-existent or minor risks and hide or diminish real and serious risks.

The public debate that gave rise to the line of investigation known in psychology as “perception of risk” was that related to nuclear energy. It was immediately evident that there is no regularity between the degree of objective risk posed by a nuclear power plant and

the subjective perception of the risk that people had.

It was icastic that it is a function of many factors other than the objective risk itself such as: degree of control, voluntariness of hiring, the severity of the consequences, the perceived benefits, the catastrophic nature of a potential accident, the risk for future generations, the immediacy effects, knowledge and others.

The perception of the degree of danger deriving from a substance, activity or behavior therefore does not depend only on the real, objective risk, but it undergoes a “transformation” as a function of numerous factors or reasoning strategies.

Wrong choices in crisis situations, underestimating the severity of a danger, overestimating one’s ability to stem the consequences of a possible error, are just some of the reasoning procedures that can lead to an injury.

¹¹ Patel, Dhaval S., et al. “Understanding barriers to preventive health actions for occupational noise-induced hearing loss.” *Journal of health communication* 6.2 (2001): 155-168

