INTERNATIONAL CBRNE MASTER COURSES SERIES

COLLANA DI SICUREZZA CHIMICA, BIOLOGICA, RADIOLOGICA E NUCLEARE

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Peace cannot be kept by force; it can only be achieved by understanding.

Albert Einstein

The CBRNe Book Series was born as an initiative of the Directive Board and of the Scientific Committee of "International Master Courses in Protection Against CBRNe events" (www.mastercbrn.com) at the University of Rome Tor Vergata. The evolution and increase in Security and Safety threats at an international level place remarkable focus on the improvement of the emergency systems to deal with crisis, including those connected to ordinary and non–conventional events (Chemical, Biological, Radiological, Nuclear, and explosives). In every industrial Country there are multiple entities with specialized teams in very specific fields, but the complexity of the events requires professionals that not only have specific know-how, but also expertise in the entire relevant areas. Given the global interest in these issues, the Department of Industrial Engineering and the Faculty of Medicine and Surgery of the Tor Vergata University organize the international Master Courses in "Protection against CBRNe events": I Level Master Course in "Protection against CBRNe events" (120 ECTS) and II Level Master Course in "Protection against CBRNe events" (60 ECTS). These courses aim at providing attendees with comprehensive competences in the field of CBRNe Safety and Security, through teaching and training specifically focused on real needs. Both Master Courses are designed according to the spirit of the Bologna Process for Higher Education, the Italian law and educational system. The Master Courses are organized also in cooperation with the following Italian Public Entities:

— Presidenza del Consiglio dei Ministri (Prime Minister's Office);
— Ministero della Difesa (Ministry of Defence);
— Ministero dell'Interno (Ministry of The Interior);
— Istituto Superiore di Sanità (National Health Institute);
— Istituto Nazionale di Geofisica e Vulcanologia (National Institute for Geophysics and Vulcanology);
— ENEA (Italian National Agency for New Technology, Energy and Sustainable Economic Development);

— University Consortia CRATI, MARIS and SCIRE;
— Comitato Parlamentare per l'Innovazione Tecnologica (Parliamentary Committee for Technological Innovation).

And together with the following International Entities:

— OPCW (Organization for the Prohibition of Chemical Weapons)
— NATO Joint Centre Of Excellence (Czech Republic);
— NATO SCHOOL of Oberammergau (Germany);
— HotZone Solutions Group (The Netherlands);
— VVU–026 Sternberk (Czech Republic);
— Seibersdorf Laboratories GmbH (Austria);
— Chernobyl Centre (Ukraine).

All the above–mentioned organizations have signed official cooperation agreements with the University of Rome Tor Vergata in the aim of Master course activities. The Master have also cooperation with OSCE, IAEA, ECDC, KEMEA in the aim of the didactical activities and we are working to formalize this collaboration with a formal cooperation agreement.

Both Master Courses have been officially granted the "NATO selected" status and have been included in the NATO Education and Training Opportunities Catalogue (ETOC) and also they are supported by OPCW.

The purpose of the CBRNe book series is to give a new perspective of the safety and security risks from both a civil and military point of view, touching all the aspects of the risks from the technological to the medical ones, talking about agents and effects, protection, decontamination, training, emergency management, didactic, investigation, communication and policy.

The authors will be experts of the sector coming from civil, military, academic/research and private realities. A special thanks for the realization of this series goes to Prof. Carlo Bellecci for his initial encouragement, continuous support and help.

Nel mese di Agosto 2016 il Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR) ha inserito la collana nella lista di quelle ufficialmente riconosciute con i seguenti riferimenti:

— codice di classificazione: E237557;
— titolo: CBRNE BOOK SERIES.

During the month of August, 2016, the Italian Minister for Instruction, University and Research (MIUR) has officially added this book series in the list of the official publications recognized by the Minister itself with the following references:

— classification code: E237557;
— title: CBRNE BOOK SERIES.

Antonio Parrilla

How the Communication of CBRNe Events Changes in the Era of Social Media and Fake News

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Gioacchino Onorati editore S.r.l. – unipersonale

www.gioacchinoonoratieditore.it
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via Vittorio Veneto, 20
00020 Canterano (RM)
(06) 45551463

ISBN 978-88-255-3181-7

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Ist edition: March 2020

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Abstract

Communication between the citizen and the authorities in charge of protection and security has always played, for a number of reasons, a crucial role.

During the hours, if not in the minutes immediately following the occurrence of a CBRNe event, it is mandatory to provide clear indications to those involved or who are in any case near the place of intervention, so that they can be safe and avoid potentially dangerous behavior.

During the operations, moreover, it is necessary to provide clear, truthful and punctual information to the citizens and to the media, not only to guarantee the right to information, but also to reassure, direct behavior, avoid the spread of unjustified panic, provide information for any evacuations. In these situations, information becomes an effective tool for preventing further events and limiting damage.

These, and other considerations, make a focused effort necessary to ensure that everyone receives correct, timely information and, above all, to protect by those who, for criminal, terrorist, political reasons, for personal interests or even just out of stupidity, provide false information.

The diffusion of fake news, conspiracy theories, the discovery of real disinformation centers whose effect on the public is now under everyone's eyes, make the communication methods used in the past

inappropriate and demand to the operators of the information an additional effort, especially with regard to building one's credibility.

Information in the world of social media is created and spread at a speed never seen before; if we add to this the phenomenon of disintermediation (which we will discuss in greater depth later on), we can understand how anyone, from the first responder to the minister of civil protection, can become a creator or an information releaser or, more simply, a subject to exploit for the purposes of disinformation.

The purpose of this work is to indicate which are the most important elements that can prevent correct information, describe what damage they can cause, indicate where the methods exist to limit their damage. Far from being a communication manual, the objective is to propose itself as a vademecum to recognize, avoid and neutralize some of the pitfalls that the new media can tend to CBRNe operators.

Keywords: *Communication*, *CBRNe*, *Fake News*, *Social Media*.

Chapter I

Chomsky's 10 Strategies of Manipulation through the Mass Media

In the essay *Manufacturing Consent: The Political Economy of the Mass Media*[1], the philosopher and communication theorist Noam Chomsky, highlighting their propagandistic function, defined the mass media as follows:

> Mass media as a system perform the function of communicating messages and symbols to the population. Their task is to amuse, entertain and inform, but at the same time to instill in individuals the values, beliefs and codes of behavior that can integrate them into the institutional structures of the society of which they are part. In a world characterized by the concentration of wealth and strong class conflicts, systematic propaganda is needed to achieve this goal. In countries where the levers of power are in the hands of a state bureaucracy, the monopolistic control of the mass media, often supplemented by official censorship, testifies transparently that they serve the purposes of a ruling elite. Where there is no formal censorship and the media are private, it is much more difficult to see in them a propaganda system in action. This is particularly true when the media actively compete, periodically attack the productive world and the government to denounce their abuses and aggressively take the field as champions of freedom of speech and as defenders of the general interests of the community. Less obvious are other aspects, which are often deliberately ignored: the limited nature of critical activity, the existence of profound inequalities in the availability of economic resources and the weight of such inequalities in terms of access to the private media system and ability to influence its activity and its management.

According to Chomsky, money and power can filter the news to spread, marginalize dissent and allow the government and the dominant private interests to send their messages to the public. This system of filters has the effect of marginalizing dissidents. Let us now see which are, according to the American philosopher, the strategies used to manipulate public opinion:

— *The strategy of distraction*. The primordial element of social control is the strategy of distraction. It consists in diverting the attention of the public from the important problems and the changes decided by the political and economic elites, through a technique that consists in the proposition of continuous distractions and insignificant information. The strategy of distraction is also essential to prevent the public from being interested in the essential knowledge, in the area of science, economics, psychology, neurobiology and cybernetics, thus diverting public attention from real social problems.
— *Create problems and then offer solutions*. This method is also called "problem–reaction–solution". A problem is created, a "situation" expected to cause a certain reaction from the public, so that it is the public itself to ask for the measures that the dominant classes want to be accepted. For example: let urban violence spread so that public opinion requires security laws and policies that restrict personal freedom.
— *The strategy of graduality*. To let people accept an unacceptable measure, just apply it gradually, drop by drop, for consecutive years. In this way, changes that would have provoked a revolution if they had been imposed at once, are accepted without a shot being fired.
— *The strategy of deferring*. Another way to let people accept an unpopular decision is to present it as "painful and necessary", obtaining public acceptance, for the time being, for future application. It is easier to accept a future sacrifice than an imme-

diate one. This gives the public more time to get used to the idea of change and to accept it resigned when the time comes; furthermore, says Chomsky, the mass always has the tendency to naively hope that "everything will be better tomorrow" and that the sacrifice required could be avoided.

— *Addressing the public like if you are dealing with children*. A great part of advertising aimed at the general public uses discourses, arguments, characters and a particularly childlike intonation, often close to weakness, as if spectators were a creature of a few years or a mental defect. This is because, based on suggestibility, the interlocutor will tend, with a certain probability, to a response or reaction that is also lacking in a critical sense such as that of a person of 12 years or less.

— *Use the emotional aspect much more than reflection*. Exploiting the emotion is a classic technique to provoke a short circuit on a rational analysis and, finally, on the critical sense of the individual. The use of the emotional register also allows access to people's unconscious in order to implant or inject ideas, desires, fears and apprehension, compulsions, or induce the desired behaviors.

— *Keep the public in ignorance and mediocrity*. Ensure that the public is unable to understand the technologies and methods used for its control and its slavery. This is achieved by providing the lower social classes with an education whose quality is as poor and mediocre as possible and makes it impossible to bridge the gap with that of the upper classes.

— *Stimulate the public to be complacent with mediocrity*. Push the public to believe that it is fashionable to be stupid, vulgar and ignorant…

— *Strengthen self–guilt*. Make the individual believe that he alone is guilty of his misfortune, because of his insufficient intelligence, his abilities or his efforts. In this way, any rebellion against the economic system is less likely: the individual de-

values himself, blames himself and falls into a depressive state, one of whose effects is the inhibition of his action.

— *Knowing individuals better than they know themselves*. Over the past 50 years, rapid advances in science have generated a growing gap between public knowledge and that possessed and used by ruling elites. Thanks to biology, neurobiology, and applied psychology it is possible to know the common individual better than he himself knows. This means that, in most cases, we can exercise greater control over it than it is capable of exercising on itself.

We can agree in whole, in part or disagree with what Chomsky has proposed, or with the fact that there are really one or more elites that have actually used methods of persuasion that are not very transparent, but there is no doubt that the mass media have a very strong capacity to address public opinion. Although some of the situations described by Chomsky are actually realized (for example the complacency towards mediocrity) what Chomsky could not foresee was the power with which, in our days, social media have impacted on the circulation of news, scientific theories, political discussions and how much, making an unprejudiced use of the mental mechanisms with which the human brain approaches knowledge, it is possible to manipulate the feeling of the masses, spread distrust, deceive, mislead.

Another aspect to consider is a sort of reversal of roles. If, in Chomsky's view, the ruling elite could condition public opinion, social communication has instead shown that there are more elites (continuing to use Chomsky's vocabulary) each determined to make their world view prevail, to the detriment of than that of the others, using the new options presented with the advent of social media unscrupulously. In the next chapters we will see how this impacts on the communication of CBRNe type events.

Chapter II

Cognitive Biases

Cognitive biases are systematic patterns of deviation from norm or rationality in judgment, and are often studied in psychology and behavioral economics.

Although the reality of most of these biases is confirmed by reproducible research, there are often controversies about how to classify these biases or how to explain them.

Some are effects of information–processing rules (*i.e.*, mental shortcuts), called heuristics, that the brain uses to produce decisions or judgments. Biases have a variety of forms and appear as cognitive ("cold") bias, such as mental noise, or motivational ("hot") bias, such as when beliefs are distorted by wishful thinking. Both effects can be present at the same time.

There are also controversies over some of these biases as to whether they count as useless or irrational, or whether they result in useful attitudes or behavior. For example, when getting to know others, people tend to ask leading questions which seem biased towards confirming their assumptions about the person. However, this kind of confirmation bias has also been argued to be an example of social skill: a way to establish a connection with the other person.

There are many families of cognitive biases:

— *Decision–making, belief, and behavioral biases*. Many of these biases affect belief formation, business and economic decisions, and human behavior in general.
— *Social biases*. Most of these biases are labeled as attributional biases. In psychology, an attribution bias or attributional bias is a cognitive bias that refers to the systematic errors made when people evaluate or try to find reasons for their own and others' behaviors. People constantly make attributions regarding the cause of their own and others' behaviors; however, attributions do not always accurately reflect reality. Rather than operating as objective perceivers, people are prone to perceptual errors that lead to biased interpretations of their social world.
— *Memory errors and biases*. In psychology and cognitive science, a memory bias is a cognitive bias that either enhances or impairs the recall of a memory (either the chances that the memory will be recalled at all, or the amount of time it takes for it to be recalled, or both), or that alters the content of a reported memory.

Each of these families includes dozens of bias, all more or less usable as Trojan horses or as weaknesses to put in place deceptive communication strategies.

Thus, cognitive biases represent the way our brain distorts reality. The question at this point is: why on earth do we do it? Why do we distort the reality that surrounds us?![2]

Basically, our brain is bombarded every day by hundreds of thousands of sensorial inputs and in order to make the signals (especially the warning signs) emerge from the background noise, it has learned, over the millennia, to adopt some mental shortcuts.

These shortcuts are mostly correct and allow us to interpret reality quickly and efficiently. However, there is a percentage of these heuristics that leads us to blind alleys, wrong conclusions about the world around us. Getting rid of cognitive bias is practically impossi-