Disaster Management of a Major CBRN Accident

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Contents

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Abstract

In this work, the NATO vision, US DHS, and CIA positions on terrorism and CBRNe events are analyzed and compared, taking into account even the United Nations and EU definitions. Furthermore, to focalize the Italian viewpoint, an analysis of the Italian Penal Code regarding Terrorism is presented. The aim of this analysis is to identify the main elements defining the contemporary concept of terrorism. Furthermore, the concept of subversion is discussed, and initial analysis of two important databases on terroristic events (RAND and GTD) is carried out.

In the second part of the work, two evolution theories on terrorism are illustrated, introducing the WMD and CBRNe most important definitions and international use together with an analysis of the action taken in Italy in case of CBRNe emergencies and CBRNe crisis.

The purpose of this work is to indicate, at international and national levels, the main concepts and actions to be taken during terroristic and CBRNe events.

Introduction

In this work, fundamental definitions of the terms *terrorism* and *CBRNe* are presented. In particular, starting to form a historical perspective, different study results reported in the literature on the term "terrorism" are analyzed. The vision is successively enlarged on contemporary definitions used in very important institutions. The NATO definition, the US DHS, and CIA positions are analyzed and compared in the work, taking into account even the United Nations and European Union statements. Further, to focalize the Italian viewpoint, an analysis of the Italian Penal Code regarding terrorism is presented. The aim of the analysis carried out by the authors in the first part of this paper is to identify the main characteristic elements defining the contemporary concept of terrorism. These elements are summarized in a synoptic table.

Furthermore, the analysis of the concept of subversion is faced, and the concepts of "nonclandestine political violence," "guerrilla warfare," and "coup d'état" are presented and analyzed. To complete the scenario of the concepts often used for discussion about the terrorism issue, a technical taxonomy of "violent conflict" adopted in NATO documents is presented and discussed.

In the second part of the paper, the analysis is focused on two important databases on terroristic events: RAND and GTD. The power of the databases is analyzed and a detailed description, especially of the GTD (Global Terrorism Database), is provided, showing graphical representations and statistical computations. In particular,

the most important characteristics are displayed (e.g., number of fatalities, number of casualties in a specific period of time) of an event/incident recorded in the GTD database that can be extracted and processed.

In the final part of the work, two evolution theories on terrorism are illustrated. The case study of Italy will be analyzed to explain how the Italian CBRNe crises and emergency management system is framed within two mechanisms that are formally separated although intrinsically integrated: the civil defense and the civil protection.

Definitions of Terrorism

It is essential, for this analysis, to start defining the term **terrorism** starting from its original meaning (Matusitz 2012). Terrorism lies from the word *terror*, and the word *terror* comes from the Latin *terrere*, which means "frighten" or "tremble." We can refer to terrorism with the definition of "causing the frightening" or "practicing the trembling." It is useful to stress that trembling and frightening in this context could be synonyms for fear, panic, and anxiety. These are the pillars of what it is typically called terror. The word *terror* is over 2000 years old, and it was used in the ancient Rome (i.e., the *terror cimbricus* was a state of panic and emergency in response to the coming of the Cimbri (North European) tribe killers in 105 BC (Matusitz 2012)); for the first time in history, the word *terrorism* was coined during the French Revolution's Reign of Terror (1793–1794). The Reign of Terror was a campaign of large-scale violence by the French state; between 16,000 and 40,000 people were killed in 1 year.

While the Reign of Terror was a product of the French government, in modern times terrorism is mainly related to killing humans, by nongovernment political actors, for various reasons (politics and religion mainly). Furthermore, it is important to observe that many governments are apparently averse to defining terrorism because they are worried about how an official definition of terrorism would expose the legitimacy of self-proclaimed combats for national liberation. In certain countries, the word has become virtually synonymous with political opponents.

Different studies summarized in reference (Matusitz 2012) have found more than 200 definitions of terrorism. Schmid and Jongman, two researchers at the University of Leiden (Netherlands), in 1988 adopted a social science approach to figure out how to best define terrorism. They gathered over a hundred academic and official definitions of terrorism and examined them to identify the main components. The published studies show that the concept of **violence** emerged in 83.5% of definitions; **political goals** emerged in 65%; **causing fear and terror** in 51%; **arbitrariness and indiscriminate targeting** in 21%; and the **victimization of civilians**, **non-combatants, neutrals, or outsiders** in 17.5%.

Analyzing the results discussed in Matusitz (2012), before further specific analysis, there are three common elements that exist in the legal definitions of terrorism:

- The use of violence
- Political objectives
- The aim of propagating fear in a target population

International Definitions of Terrorism

There is no universal agreement on the definition of terrorism, and worldwide various legal systems and government agencies use different formulas. The following briefly summarizes the most important definitions in order to provide an updated synoptic conceptual comparison.

NATO Definition of Terrorism

Taking into account "NATO Glossary of Terms and Definitions," AAP-06, ed. 2014 (NATO), the NATO definitions that regard "terrorism" aspects are basically the following:

Terrorism – The unlawful use or threatened use of force or violence against individuals or property in an attempt to coerce or intimidate governments or societies to achieve political, religious, or ideological objectives.

Antiterrorism – All defensive and preventive measures taken to reduce the vulnerability of forces, individuals and property to terrorism including protective and deterrent measures aimed at preventing an attack or reducing its effect(s).

Counterterrorism – All offensive measures taken to neutralize terrorism before and after hostile acts are carried out. Such measures include those counterforce activities justified for the defense of individuals as well as containment measures implemented by military forces or civilian organizations.

DHS Definition of Terrorism

The US DHS (Department of Homeland Security), under Section 2 of the Homeland Security Act of 2002, defines "terrorism" as follow (DHS):

The term "terrorism" means any activity that:

(A) Involves an act that is:

- Dangerous to human life or potentially destructive for critical infrastructure and/or key assets
- A violation of the criminal laws of the United States or of any state or other subdivision of the United States

(B) Appears to be intended to:

- Intimidate or coerce a civilian population
- Influence the policy of a government by intimidation or coercion
- Affect the behavior of a government by mass destruction, assassination, or kidnapping.

CIA Definitions of Terrorism

The US Central Intelligence Agency (CIA) in "How do you define terrorism?" (2013) (CIA 2003) states that the Intelligence Community is guided by the definition

of terrorism, international terrorism, and terroristic group, contained in Title 22 of the US Code, Section 2656f-d:

- The term "terrorism" means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents.
- The term "international terrorism" means terrorism involving the territory or the citizens of more than one country.
- The term "terrorist group" means any group that practices or has significant subgroups that practice, international terrorism.

United Nations Indirect Definitions of Terrorism

The United Nations (UN) in the "International Convention for the suppression of the financing of terrorism" in 1999 (United Nations 1999) proposed the following indirect definition for "terroristic act":

> Any other act intended to cause death or serious bodily injury to a civilian, or to any other person not taking an active part in the hostilities in a situation of armed conflict, when the purpose of such act, by its nature or context, is to intimidate a population or to compel a government or an international organization to do or to abstain from doing any act. (United Nations 1999)

It is important to stress that at the UN level it doesn't exist, up to now, a common definition of *terrorism* (Matusitz 2012; http://www.internationalcrimesdatabase.org/crimes/terrorism). Providing a definition of terrorism presents considerable difficulty with different opinions. Furthermore, the problem is intensified by the nature of the definition itself because "one man's terrorist is the other man's freedom fighter" (http://www.internationalcrimesdatabase.org/crimes/terrorism).

The disagreement about the definition of terrorism at the UN level is not simply focused upon linguistics differences but also on moral, political, and ideological bases related to the legitimacy of using violence.

EU Definitions of Terrorism

The European Union states in the Council Framework Decision (22002) (EU) in Art. 1 the following definition of terrorism and of "terroristic offenses."

"Art. 1 – *Terrorist offenses and fundamental rights and principles*

Each Member State shall take the necessary measures to ensure that the intentional acts referred to the following list:

(a) attacks upon a person's life which may cause death;
(b) attacks upon the physical integrity of a person;
(c) kidnapping or hostage-taking;
(d) causing extensive destruction to a Government or public facility, a transport system, critical infrastructure;
(e) manufacture, possession, acquisition, transport, supply or use of weapons, explosives or of nuclear, biological or chemical weapon;

(f) release of dangerous substances, or causing fires, floods or explosions dangerous for civilians;

(g) interfering with or disrupting the supply of water, power or any other fundamental natural resources

(h) threatening to commit any of the acts listed from (a) to (h)."

It is important to observe that CBRNe events are listed, for the first time, in the list of Terroristic offenses.

Comparative Table for "Terrorism" Characteristic Elements

Starting from the previous paragraphs, it is possible to generate a comparative table in order to verify differences and analogies in all definitions of terrorism here presented. In Table 1 a synoptic representation of terrorism definition characteristic elements is reported.

Terrorism and Subversion

In the following section, we will focus our attention on different concepts that are used in discussion regarding the "terrorism": subversion, political violence, and guerrilla warfare.

Subversion

Subversion is defined in the Cambridge English Dictionary as "the act of trying to destroy or damage an established system or government," and in the Merriam Webster Dictionary the *act of subverting* is defined as "the state of being subverted: a systematic attempt to overthrow or undermine a government or political system by persons working secretly from within."

The definition of subversion assumes a slightly different meaning in some international institutions.

In the NATO definition (1981) (NATO), for example, *subversion* is defined as an "action designed to weaken the military, economic or political strength of a nation by undermining the morale, loyalty or reliability of its citizens." In the DoD definition (2017) (US Department of Defence – DoD 2017), *subversion* is defined as "actions designed to undermine the military, economic, psychological, or political strength or morale of a governing authority."

In the context of this work from a national state viewpoint, we could define *subversion* as the attempt to *overthrow or undermine a government or political system by persons working secretly from within.*

Table 1 Synoptic representation of terrorism definition characteristic elements

Definition of terrorism	Use of violence	The threatened use of violence	On individuals-civilians	On property-asset	Political objectives	Religious-ideological objectives	To aim of providing fear in the population	To intimidate government-societies	Clandestine actions and agents
NATO	✓	✓	✓	✓	✓	✓		✓	
DHS	✓	✓	✓	✓	✓		✓	✓	
CIA	✓		✓		✓				✓
UN	✓		✓				✓	✓	
EU	✓	✓		✓			✓	✓	

In Italy it is very clear the political and social meaning of these terms, thinking back to the Italian experience of internal terrorism in the 1970s. The subversion actions of the "Brigate Rosse" internal terrorists were a typical example of it.

To be more analytical and to have a general conceptual approach, we can state that *subversion* could be carried out (Carbonelli) generally in four different forms:

- Nonclandestine political violence
- Terrorism
- Guerrilla warfare
- Coup d'état (or golpe)

With **nonclandestine political violence**, we indicate violent actions (typically riots) connected with political objectives, implemented by people living a nonclandestine lifestyle (no secret nature of people and organizations).

With **terrorism**, in this context, we intend violent and illegal acts, with political/religious rationale, implemented by people operating in a clandestine lifestyle. The target of the actions could be to realize a political subversion.

With **Guerrilla** we intend violent acts against military units and structures implemented by people organized in paramilitary structures. It is typical of military-controlled states, in peacekeeping or peace-enforcing scenarios.

With **Coup d'état** also known simply as a **coup**, a *putsch*, or *golpe de estado*, it is intended sudden overthrow of a government through unconstitutional means. A *coup is a type of revolution where the illegal and overt seizure of a state by the military or other elites within the state apparatus occurs* (Powell and Thyne 2011).
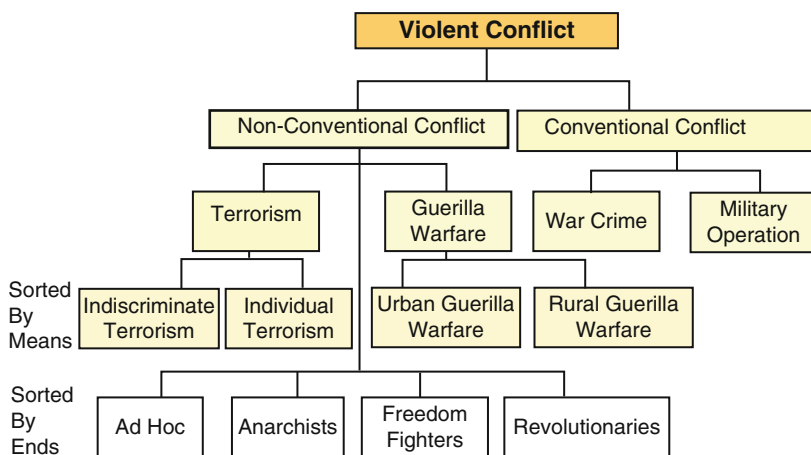
Fig. 1 Taxonomy proposed to classify violent conflicts (Tomasetti)

Technical Taxonomy of "Violent Conflict"

In the technical literature (Tomasetti) (from NATO documents) for classifying the different concepts, characterizing a *violent conflict* is often proposed the following taxonomy (Fig. 1)*,* in which the concept of *terrorism* and *guerilla*, above discussed, is included.

In this approach, the conflicts are divided into two different branches: the *conventional* and *nonconventional*. The *terrorism* concept can be located within the nonconventional conflicts branch, together with the *guerrilla warfare*. The "nonclandestine political violence" and "coup d'ètat" concepts, introduced above by the authors and used typically in the analysis of *subversion* of modern democracies, have no interest in this general NATO-derived approach. By the way, it is interesting to stress that a "sort by ends" of the *nonconventional conflict* is proposed too, leading to the introduction of the *Freedom Fighters* and *Revolutionaries* figures.

Terroristic Attack and Number of Deaths: Database on Terrorism

In the following section, we briefly discuss where it is possible to gather information on terroristic attacks, the number of casualties, and specific information relative to the terroristic events/incidents, structured in organized databases. We will focus our attention on two sources that can be interesting for analytical purposes: RAND Database of Worldwide Terrorism Incidents and Global Terrorism Database (GTD).

RAND Corporation (Research and Development), a California-based nonprofit global policy institution, is considered (Matusitz 2012) one of the most important front-runners in terrorism and counterterrorism studies since the 1970s.

According to the RAND Database of Worldwide Terrorism Incidents (Matusitz 2012; RAND), the number of deaths as a result of terrorist attacks in Europe and North America from 2000 to 2010 was 4873.

More complete information on this issue can be extracted by a second database: the **Global Terrorism Database (GTD)** (Global Terrorism Database (GTD)). The Global Terrorism Database is an open-source database including information on terrorist events around the world from 1970 through 2016 (with *annual updates*). Unlike many other event databases, the GTD includes systematic data on domestic as well as international terrorist incidents that have occurred during this time period and now includes more than 170,000 cases. For each GTD incident, information is available on the date and location of the incident, the weapons used and nature of the target, the number of casualties, and – when identifiable – the group or individual responsible.

Statistical information contained in the Global Terrorism Database is based on reports from a variety of open media sources. Information is not added to the GTD unless and until it has been determined that the sources are credible.

It is possible to download partial or complete database information (Global Terrorism Database (GTD)) that:

- Contains information on over 170,000 terrorist attacks
- Currently the most comprehensive unclassified database on terrorist events in the world
- Includes information on more than 83,000 bombings, 18,000 assassinations, and 11,000 kidnappings since 1970
- Includes information on at least 45 variables for each case, with more recent incidents including information on more than 120 variables
- Over 4,000,000 news articles and 25,000 news sources were reviewed to collect incident data from 1998 to 2016 alone

Figure 2 is an example of the DB structure of GTD.

Figure 3 shows the distribution of 70,767 terroristic cumulative events/incidents recorded in the GTD in the period 2011–2016. This graph shows that in a month more than 1000 terroristic events starting from 2013 have a worldwide perspective.

Table 2, obtained by the authors from GTD, reports the cumulative results of terroristic events for the period 2010–2017 together with the fatalities and casualties showing the significant increasing trend for all the variables analyzed in the last 7 years.

GTD ID	DATE	COUNTRY	CITY	PERPETRATOR GROUP	FATALITIES	INJURED	TARGET TYPE
201406150063	2014-06-12	Iraq	Tikrit	Islamic State of Iraq and the Levant (ISIL)	1500	Unknown	Military
201406100042	2014-06-10	Iraq	Badush	Islamic State of Iraq and the Levant (ISIL)	670	0	Police
201408200027	2014-08-19	Syria	Unknown	Islamic State of Iraq and the Levant (ISIL)	517	Unknown	Military
201408090071	2014-08-03	Iraq	Sinjar	Islamic State of Iraq and the Levant (ISIL)	500	Unknown	Private Citizens & Property
201612100011	2016-12-10	Syria	Palmyra	Islamic State of Iraq and the Levant (ISIL)	433	Unknown	Private Citizens & Property
201607020002	2016-07-03	Iraq	Baghdad	Islamic State of Iraq and the Levant (ISIL)	383	200	Business
201405050053	2014-05-05	Nigeria	Gamboru Ngala	Boko Haram	315	Unknown	Private Citizens & Property
201407170017	2014-07-17	Syria	Palmyra district	Islamic State of Iraq and the Levant (ISIL)	310	Unknown	Business,Military
201602070020	2016-02-07	Iraq	Mosul	Islamic State of Iraq and the Levant (ISIL)	300	0	Police,Military,Private Citizens & Property
201504090006	2015-04-09	Iraq	Qaim	Islamic State of Iraq and the Levant (ISIL)	300	Unknown	Private Citizens & Property
201407170031	2014-07-17	Ukraine	Hrabove	Donetsk People's Republic (suspected)	298	0	Airports and Aircraft
201404150089	2014-04-15	South Sudan	Bentiu	Sudan People's Liberation Movement in Opposition (SPLM-IO)	287	400	Religious Figures/Institutions
201610220007	2016-10-21	Iraq	Mosul	Islamic State of Iraq and the Levant (ISIL)	284	0	Private Citizens & Property
201608190039	2016-08-19	South Sudan	Pajut	Sudan People's Liberation Movement in Opposition (SPLM-IO)	283	Unknown	Private Citizens & Property
201505210084	2015-05-21	Syria	Palmyra	Islamic State of Iraq and the Levant (ISIL)	280	Unknown	Government (General),Military,Terrorists/Non-state Militia
201604210024	2016-04-21	Iraq	Mosul	Islamic State of Iraq and the Levant (ISIL)	250	0	Private Citizens & Property
201509280037	2015-09-28	Afghanistan	Kunduz	Taliban	240	296	Private Citizens & Property
201504250027	2015-04-25	Niger	Karamga	Boko Haram	230	9	Military,Private Citizens & Property
201510310001	2015-10-31	Egypt	Unknown	Sinai Province of the Islamic State	224	0	Airports and Aircraft

Fig. 2 Example of simplified DB structure in the Global Terrorism Database (ranking on the basis of "fatalities" recorded in the period 2011–2016)
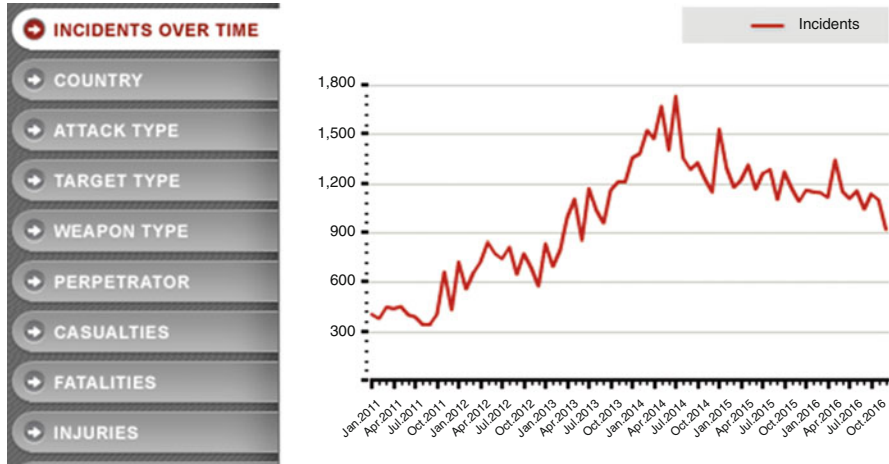
Fig. 3 Global Terrorism Database: the shape of monthly distribution of the number of events for the 70,767 terroristic cumulative events/incidents recorded in the period 2011–2016

Table 2 Number of terroristic events, number of fatalities, and number of casualties from 2010 to 2016

Year	Number of events	Fatalities	Casualties
2010	4826	7827	15947
2011	5076	8246	14659
2012	8522	15497	25445
2013	12036	22273	37688
2014	16903	44490	41128
2015	14965	38853	44043
2016	13587	34871	40001
Total	75915	172057	218911

Terrorism Evolution Theories: Toward the Use of Unconventional Weapons

In the last 20 years, we had a change of the terroristic tactics: in 1999, Walter Laqueur (Matusitz 2012) suggests that "there has been a radical transformation, if not a revolution, in the character of terrorism," comparing old terrorism with new terrorism. Old terrorism, he said, "is terrorism that strikes only selected targets. New terrorism is terrorism that is indiscriminate; it causes as many casualties as possible."

So the major feature of the new century terrorism is the increasing readiness to use extreme indiscriminate violence aiming at the destruction of society and the elimination of large sections of the population.

Many researchers (Matusitz 2012) argue that the paradigm shift from old to new terrorism occurred at some point in the 1990s, with the 1993 bombing of the World Trade Center in New York and the 1995 *sarin* gas attack in the Tokyo subway system by Aum Shinrikyo. Supporters of the concept of new terrorism identify strict

compliance with religion as one of its main characteristics. While old terrorism was mainly secular in its focus and drive, new terrorism works hand in glove with religious fanaticism. New terrorism rejects all other ways of life and advocates a categorical and inflexible worldview consistent with the belief of the religion.

Theories on Terrorism: The Four Waves and the CBRNe Threat

According to Ganor (2002), the comparison between old and new terrorism can be articulated through the differences between *classical*, *modern*, and *postmodern* terrorism. Classical terrorism means that group warfare is direct; it is aimed at specific targets with very few casualties (e.g., assassinations) or wreaks havoc on "nonsignificant" facilities. The damage is fairly low because the terrorist acts are perpetrated to achieve a specific political objective. In modern terrorism, a more indirect approach is used; attacks are more indiscriminate, and destruction is much higher, inflicting hundreds of casualties. Although *conventional weapons* are used in modern terrorism, they are used to create mass fatalities. Postmodern terrorism has the objective of altering the reality of the conflict by the very act of terrorism – such as using *unconventional weapons* as **CBRNe** (Chemical, Biological, Radiological, Nuclear, and explosive) weapons or attacks against symbols of the enemy. The objective here is to eliminate the source of the conflict itself, jeopardizing the enemy's culture and society.

Matusitz (2012), identifies and describe four ages of terrorism in the last 150 years.

The *first wave* was in the late nineteenth and early twentieth centuries, and it is aimed at specific targets with few casualties, typical assassinations. The *second wave* was the colonial wave, confined within national geographical boundaries from 1921. The *third wave* was the wave of the second part of the last century; it introduced international terrorism, crossing national boundaries, which began in the 1960s. On September 11, 2001, terrorist attacks gave rise to the *fourth wave* of worldwide terrorism.

The fourth wave is symbolized by a religious justification for killing, international scope, unparalleled gory tactics and weapons, and dependence on modern technologies. The latter consists of fast communication mean, ease of global travel (i.-e., moving across borders), and accessibility to financial instruments and weapons of mass destruction (**WMD**).

In the fourth wave, terrorism has reached a global phase. The use of any weapon is justifiable: no distinction among targets should be taken into account.

WMD and CBRNe Weapons: Are They the Same Thing?

In the literature, we can find slightly different definitions of the CBRNe and WDM concepts. Starting from the last one, and referring to US definitions, we can observe (FBI) that US Code (The Code of Laws of the United States of America is variously

abbreviated to Code of Laws of the United States, United States Code, U.S. Code, U.S.C., or USC.) Title 18, §2332a, defines very precisely weapons of mass destruction (**WMD**) as:

- any explosive, incendiary, or poison gas, including the following: a bomb; grenade; rocket having an explosive or incendiary charge of more than four ounces; missile having an explosive or incendiary charge of more than one-quarter ounce; mine; or device similar to any of the previously described devices;
- any weapon that is designed or intended to cause death or serious bodily injury through the release, dissemination, or impact of toxic or poisonous chemicals, or their precursors;
- any weapon involving a disease organism;
- any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.

NATO definition of WMD is less specific. WDM is (NATO) *a weapon that is capable of a high order of destruction and of being used in such a manner as to destroy people, infrastructure, or other resources on a large scale*. Nevertheless, this definition seems to be quite general and shared at an international level.

In other words, WMD refers to materials, weapons, or devices that are intended to cause (or are capable of causing) death or serious bodily injury to a significant number of people through release, dissemination, or impact of toxic or poisonous chemicals or precursors, a disease organism, or radiation or radioactivity, including – but not limited to – biological devices, chemical devices, improvised nuclear devices, radiological dispersion devices, and radiological exposure devices.

The term **CBRN** (European Commission, Migration and Home Affairs 2012) is an acronym for Chemical, Biological, Radiological, and Nuclear agents/materials that could harm the society through their accidental or deliberate release, dissemination, or impacts.

The term CBRN is a replacement for the cold war term **NBC** (nuclear, biological, and chemical), which had replaced the term **ABC** (atomic, biological, and chemical) that was used in the 1950s. The addition of the R (for radiological) is a consequence of the "new" threat of a radiological weapon, often referred to as "dirty bombs." In the new millennium, the term **CBRNe** was introduced as an extension of CBRN – the **e** in this term representing the enhanced explosives threat.

Nowadays it is a praxis in the United States to use the terms CBRNe and WDM as interchangeable concepts. For example, the US Government Accountability Office (GAO), in its documents, refers to (European Commission, Migration and Home Affairs 2012) "Chemical, biological, radiological, nuclear, and explosive (CBRNe) weapons, also known as weapons of mass destruction (WMD), have the potential to kill thousands of people in a single incident."

Using a graphic representation (Fig. 4) proposed in some NATO documents, the boundary of "CBRN terrorism" concept can be imagined as the intersection of five elements/conditions: *WDM proliferation*, *regional conflicts*, *rouge/failed states*,

Fig. 4 Setting theory representation of different elements/conditions to define CBRN terrorism conceptual boundary (derived by NATO documents)
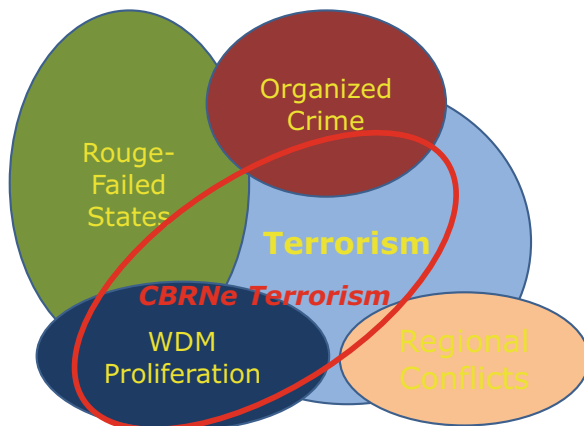
organized crime, and, finally, *terrorism*. Figure 4 very well highlights in a "setting theory way" even the relationship among the different elements/conditions described in the scenario.

Concluding this analysis, we can state that the CBRNe agents and materials can constitute one of the most potentially destructive *threat*, the possible weapon which terrorists, in this postmodern phase, can take into account to reach destructive targets.

The term *threat* associated with the CBRNe acronym immediately enlarges the vision of possible further study on the *Risk Analysis* field, opening the scenario to the introduction and definition – from the CBRNe viewpoint – of the terms *Vulnerability*, *Asset*, *Exposure*, *Impact*, *Consequence*, *Risk Assessment*, and finally, *Risk Management*. Even this *risk-related area* could be of potentially great interest for future detailed studies, and it is the intention of the authors of this work to focus on this issue.

CBRNe Disaster Management System: The Italian Case Study

The Italian CBRN crises and emergency management system is framed within two mechanisms that are formally separated although intrinsically integrated: the **civil defense** and the **civil protection**. The Italian mechanism deals with a CBRNe emergency at a national-central, regional, or local level. Both the civil defense and the civil protection mechanisms are structured with a command and control chain, where the Prime Minister takes national decisions supported by different decision-making and coordination committees and ad hoc structures.

The difference between the two notions depends on the type and reach of the threatening events at stake. Civil protection concerns preparedness and response to natural (e.g., earthquakes or floods) and man-made – but unintentional or

involuntary (e.g., industrial accidents) – threats occurring at national or international level and determining a situation of "emergency." Civil defense copes with the same typology of dangerous events further to man-made intentional or voluntary threats (e.g., sabotage, terrorism, or armed aggression) that jeopardize national or international security and amount to a situation of "crisis."

The notions of "crisis" and "emergency" are provided by Italian legislation. As we will detail later on, a "crisis" originates from events that pose a menace to the Italian "national interests," i.e., those goals, elements, and activities that are paramount to the integrity and functioning of the state (i.e., its institutions, population, territory, assets, etc.). An "emergency" is a dangerous situation to be countered by the adoption of specific, urgent, and extraordinary measures.

The maintenance/preservation of the following items is considered as the organization's strategic objectives and actions taken in civil defense area:

- Government's action continuity
- Telecommunications and alarm systems functionality
- Preservation of the economic and logistical system
- Measures aimed at population protection and assistance
- Public health protection
- Public information activities in an emergency situation
- Self-protection individual and collective training
- Artistic and cultural heritage preservation

The range of the aforementioned objectives is so wide that it does not allow a thorough determination of the civil defense scope: they are pursued through the activation of a framework that consists of different institutions and organizations, whose duties in this respect are determined by different regulatory instruments.

This activation has to be at international level:

- The international cooperation within NATO
- The EU Cooperation Mechanisms and Procedures
- The Solidarity Clause to Counter CBRN Terrorism
- The Union Civil Protection Mechanism to Counter CBRN Terrorism
- The Crisis Coordination Arrangements
- Europol
- Other CBRNe Crises and Emergency Management Cooperation Mechanisms

At national level, the tactical level is managed by the Minister of Interior that has set a national plan of civil defense defining menaces, possible scenarios, and measures to adopt. The national plan represents the general directive for the drafting of the sectorial and the specific plans, defined by the public and private administrations, that provide essential services, and also of the 103 plans defined at the provincial level by the prefects. The operative level involves several entities, the main ones are the Fire Brigades, the law enforcement authorities (especially the State Police, the Arma dei Carabinieri, the Financial Police), the Army, the local

health services, and the environmental protection agencies. As it has been said before, the tactical management of such entities is dealt at the provincial level by the prefecture.

In the case of CBRN events, natural or man-made (not intentional or accidental) that integrate an emergency situation, the civil protection system is usually activated. Such a system integrates different institutions and organisms that cooperate at the national level – both centrally and peripherally – or at a regional, provincial, and municipal level according to the typology of the event to cope with.

Their activation and subsequent action follow the "principle of subsidiarity," according to which, if an operational entity at a subordinated level is unable to cope with an emergency situation, the afferent entity at the upper level intervenes automatically. Practically, this means that the first response to an emergency, of whatever nature and extension, is guaranteed at the local level (municipality). Therefore, the first responsible for civil protection is the mayor. However, when the event cannot be coped with the means available at the municipality level, the upper levels – the prefecture, the province, the region, and the state – will intervene through integrated and coordinated action.

The strategic-tactical level organization starts with the aim of the National Service of Civil Protection to "protect the integrity of lives, goods, settlements and environment from the damages and the danger derived from natural disasters, catastrophes and other calamitous event". There are two main organizations at the central level: (1) the National Commission for the Great Risks Forecast and Prevention and (2) the Civil Protection Operational Committee composed by the representatives of the Civil Protection Department and the Fire Brigades, the Army, the Police, the Forest Service, the Italian Red Cross, National Health Service Structures, National Volunteering Organizations, National Corps for Mountain and Speleological Rescue, Port Authority, ISPRA (Superior Institute for Environmental Protection and Research), INGV (National Institute of Geophysics and Volcanology), CNR (National Research Council), and ENEA (Entity for New Technologies, Energy and Environment, unified Conference for State-Regions-Cities and local Autonomies).

There is also the participation of representatives from companies like: Italian Highways, National Railways, and Enel. The participant's role and responsibilities are stated in the Directive of December 3, 2008, "Operational orientation for the emergency management."

Conclusion and Future Development

In this work on terrorism and CBRNe issues, the attention on fundamental definitions has been posed. A comparison of different international definitions of the term *terrorism* has been done, presenting the NATO vision, US DHS, and CIA position, taking into account even the United Nations and EU definitions. Even though so many different definitions of terrorism are available in the worldwide literature, the

analysis carried out shows that it is possible to identify at least nine characteristic elements that well define the contemporary concept of terrorism.

In the second part of the work, evolution theories of terrorism have been illustrated, introducing the WDM and CBRNe most important definitions and common international uses. Furthermore, to focalize the Italian viewpoint, an analysis of the Italian CBRNe Disaster Management system has been presented.

From the analysis carried out, at least two different themes of study arose for future studies:

1. Statistical processing of database on terroristic events in order to gain more information on CBRNe events, to study trends and possible threats for prevention purposes.
2. Analyze the suitability and reliability of existing Risk Analysis methods applied to the CBRNe issue; define more appropriate definitions – from the CBRNe viewpoint – for the terms: accident, vulnerability, asset, exposure, impact, consequence, risk assessment, risk management, and disaster management.

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