

Terrorist Attacks Against the Natural Environment: A Phantom or a Real Danger

By Dr. Martin Heger*

A. Introduction

During the last few decades scholars have discussed various different scenarios of modern terrorism. One of these scenarios – Islamic motivated terrorism¹ – came to light with the attacks on the World Trade Center on 11 September 2001. Another scenario discussed involves terrorist attacks against the natural environment as part of so-called “eco-terrorism”. These attacks are either carried out using traditional weapons or the often-discussed “bioterrorism”, where biological weapons are manufactured and misused by terrorists.²

The term “eco-terrorism” can be misleading since its wording conveys the idea of terrorist measures aiming to protect the environment, such as ecologically motivated terrorism.³ However, in the following article I will employ the term when referring to terrorist attacks against the natural environment.

1. Reality: Two Terrorist Scenarios

Let me start with two actual cases of terrorism that took place in the last two decades. A group of religiously motivated terrorists attacked underground stations in two large cities, both capitals of important powers. In both cases several people died and many more were

* Professor at Humboldt University, Berlin. I want to thank my student researchers Ms. Sajanee Arzner and Ms. Liisa-Julia Voß. Email: martin.heger@rewi.hu-berlin.de.

¹ For details see MARK A. ZÖLLER, TERRORISMUSSTRAFRECHT: EIN HANDBUCH (Terrorist Criminal Law: A Guide) 45-83 (2009). To the term “terrorism” in criminal law in general, see Maunuel Cancio Meliá, *Zum strafrechtlichen Begriff des Terrorismus* (The criminal concept of terrorism), 159 GOLDTAMMER’S ARCHIV FÜR STRAFRECHT 1-13 (2012).

² For the history of biological weapons, see FRIEDRICH HANSEN, BIOLOGISCHE KRIEGSFÜHRUNG IM DRITTEN REICH (Biological warfare in the Third Reich, 1993) – for a list of modern biological weapons, see *Waffenrecht, Teil A, Abschnitt II: biologische Waffen* (Weapons Act, Part A, Section II: biological weapons), in OTTO LAGODNY, RALPH ALT, KARSTEN ALTENHAIN, GEORG FREUND & BERND HEINRICH, MÜNCHENER KOMMENTAR ZUM STRAFGESETZBUCH (MUNICH COMMENTARY ON THE CRIMINAL CODE, 5th ed., 2007).

³ See CLIVE WALKER, TERRORISM AND THE LAW (2011), at margin number 1.121.

injured. When looking at the subject of my paper however, there are significant differences between the two, which I will explain in the following.

The London attack 2005, conducted by an affiliate of the terror network Al-Qaida, involved tools customary in terrorist attacks during the last century, such as bombs, weapons and other explosive substances. Fifty-six people were killed. Whereas ten years prior to this, the Tokyo attack in 1995 triggered by members of the Omu Shinrikyo sect, involving 13 deaths and more than 1000 injured, was executed with a poisonous gas called Sarin.⁴ While the people in London died of the impacts of the explosion, such as the release of enormous pressure, the people in Tokyo died of inhaling the poisonous air.

Our natural environment consists of water, soil and air. Drinking water, fresh air and soil that can be used for agriculture are the basis of human life throughout the world.

The terrorists in Tokyo abused one of the natural elements and used it as a killing instrument. They deprived humans of fresh air, thus shattering their basis of life. The attack in Tokyo was perhaps one of the first terrorist attacks involving elements of our natural environment and the ones that followed – namely against the Twin Towers in New York City and the Madrid train station – did not utilize any environmental medium to cause harm to people.

II. Fiction: One Discussed Scenario

In light of the Fukushima catastrophe in Japan, a result of an earthquake and a tsunami in March 2011, discussions challenging the safety of nuclear power stations grew throughout Germany and the world. One of the focal points was the possible consequences of an aircraft crashing into a nuclear power station. The German scholar Hans-Georg Dederer of Bonn University, for example, has dealt with the issue in his article “Nuclear Power Stations in the Sight of Terrorism”.⁵ His answer is that nuclear power stations in Germany are not prepared for such events, and this is especially true for older generators.⁶ Airplane routes could be organized in a manner that would make it almost impossible for an accident to wind up in a crash as described above, but it is possible that terrorists would hijack an airplane and let it crash into a nuclear power station. The result of such a crash would likely be a disaster for the natural environment across many miles from the nuclear power station as well as for all the people living and working in the area. In Germany thousands

⁴ For details, see IAN READER, *RELIGIOUS VIOLENCE IN CONTEMPORARY JAPAN* (2000).

⁵ See Hans-Georg Dederer, *Kernkraftwerke im Visier des Terrorismus* (Nuclear power plants in sight of terrorism), *DIE ÖFFENTLICHE VERWALTUNG* 621-632 (2005).

⁶ *Id.*

might die and many more would be seriously injured, leaving the surrounding area potentially uninhabitable for centuries. In a worst-case scenario, a crash on a German nuclear power station could cause more victims and damages than the attacks in New York and Washington in September 2001. What is doubtless though is that in these days' terrorist attacks on our natural environment, the air, the soil and the water around nuclear power stations do not seem unrealistic.

On the basis of both these examples – the attack in Tokyo 16 years ago and the fictional scenario in Germany – I would like to discuss some arguments related to the figure of terrorism against the natural environment. The great danger involved may be discussed once in a while, but, as explained above, there are only a few cases where it has come to fruition.

B. Structural Elements of Terrorism Against the Natural Environment

When talking about terrorist attacks against the natural environment there are two possible scenarios. On the one hand terrorists could pollute water, soil or air and destroy natural resources like forests or agricultural areas. On the other hand they could destroy buildings and infrastructure that protects humans from natural forces, like dams or dikes. However, not every crime with an environmental impact can be referred to as an act of terrorism, as the differentiations below make clear, since terrorism requires the intent to injure people as part of a terrorist plan.

1. "Common" Crimes Against the Natural Environment

The pollution of our natural environment involving massive risks or even death for humans may also be considered a regular crime against the environment⁷, and must not be automatically categorized as a terrorist attack. Section 330 (2) of the *German Criminal Code*, for instance, declares the following as an "Especially Serious Case of an Environmental Crime":

Whoever, by an intentional act under Sections 324 to 329: 1. places another human being in danger of death or serious health damage or a large number of human beings in danger of health damage; or 2. causes the death of another human being, shall in cases under number 1, be punished with imprisonment from one

⁷ For details, see KARL LACKNER & KRISTIAN KÜHL, STRAFGESETZBUCH: KOMMENTAR (PENAL CODE: COMMENTARY, 27th ed., 2011), preliminaries to sections 324-330 (d).

year to ten years, in cases under number 2, with imprisonment for not less than three years⁸

And Section 330 (a) penalizes the “Serious Endangerment by Release of Poisons”:

(1) Whoever diffuses or releases substances which contain or can generate poisons and thereby causes the danger of death or serious health damage to another human being or the danger of health damage to a large number of human beings, shall be punished with imprisonment from one year to ten years.

(2) If by the act the perpetrator causes the death of another human being, then the punishment shall be imprisonment for not less than three years.⁹

II. Traditional “Core” Crimes

Similar conclusions may be drawn looking at the destruction of natural resources or buildings. These actions are in most cases considered as “Damaging Property” (Section 303), “Destruction of Structures” (Section 305) or “Arson” (Section 306). For example Section 305 (1) states: “Whoever unlawfully destroys, in whole or in part, a building, . . . dam, . . . or another structure, which is the property of another, shall be punished with imprisonment for not more than five years or a fine.”¹⁰ If someone destroys a dam and causes a flood in a city he can be punished for the “Destruction of structures”.¹¹

To set a fire in a forest can be categorized as Arson; see for instance Section 306 (1) of the *German Criminal Code*: “Whoever sets fire to or, as a result of setting a fire, destroys in whole or in part: . . . 5. forests, heaths or moors; 6. agricultural, nutritional or forestry facilities or products, shall be punished with imprisonment from one year to ten years.”¹² Heavier penalties can be found under Section 306 (b) (1): “Whoever, as a result of an arson under Sections 306 . . . , causes serious health damage to another human being or health

⁸ MICHAEL BOHLANDER, *THE GERMAN CRIMINAL CODE: A MODERN ENGLISH TRANSLATION* (2008), s. 330(2).

⁹ *Id.* at s. 330(a).

¹⁰ *Id.* at s. 305(1).

¹¹ For details see Hagen Wolff, § 395 margin number 8, in *LEIPZIGER KOMMENTAR ZUM STGB* (Verlag De Gruyter ed., 12th ed., 2008).

¹² *Id.* at s. 306 (1).

damage to a large number of human beings, shall be punished with imprisonment for not less than two years.”¹³ Furthermore according to Section 306 (c): “If the perpetrator, as a result of an arson under Sections 306 to 306 (b), at least recklessly causes the death of another human being, then the punishment shall be imprisonment for life or for not less than ten years.”¹⁴

III. Acts of Terrorism

Typically these cases are not related to terrorist attacks. The destruction of a wall or similar structure in most cases fulfills the criminal offence of “Damaging” or “Sabotage”. Categorizing such an act as terrorism against the natural environment can only be considered for exceptional cases. In order to label a crime as terrorist it is required that the pollution or destruction of the natural environment is combined with the intent to kill or to harm people as part of a terrorist plan.¹⁵ Put differently, it makes a difference whether someone just wants to destroy the natural environment or wants to destroy the natural environment combined with the intent to kill or to harm people in the very same way it could have been achieved using conventional weapons.

IV. War Crimes Against the Natural Environment

On the other hand, damage of the natural environment can be collateral damages of military operations during an armed conflict. This was the case when in the late sixties United States military forces utilized herbicides and defoliants, such as Agent Orange, as part of their campaign in Vietnam.¹⁶ Today this would be considered a war crime under the Rome Statute of the International Criminal Court of 1998, as enunciated under Article 8 (2) (b) (iv), which criminalizes

Intentionally launching an attack in the knowledge that such an attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural

¹³ *Id.* at s. 306 (b) (1).

¹⁴ *Id.* at s. 306 (c).

¹⁵ See Walker, *supra* note 3, at margin number 1.111: “As regards method, the core is violence, and terrorism involves types of violence which cause terror, often amplified through devices such as media threats. Violence is usually conceived as perpetrating harm to human beings.”

¹⁶ For details, see PAUL FREDERICK CECIL, *HERBICIDAL WARFARE: RANCH HAND PROJECT IN VIETNAM* (1986); PHILIP JONES GRIFFITH, *AGENT ORANGE: COLLATERAL DAMAGE IN VIETNAM* (2004).

environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.¹⁷

This is the first codification of crimes against the natural environment under international law,¹⁸ but it does not offer a genuine link to terrorism. A military attack in an international armed conflict involving chemical or biological weapons or causing collateral damages to the natural environment cannot be referred to as an act of terrorism since the military attack aims to gain an advantage in a war. The aim of terrorism “is to generate terror in a broader audience (such as the public)”¹⁹. However, it is possible that a group of terrorists may act in a way that is by all means comparable to military operations in an international armed conflict.²⁰ Some politicians and lawyers compared the terrorist attacks on the World Trade Center to a bombardment in war.²¹ But let me, at this point, come back to one of my examples: the usage of poisonous gas was a prominent feature of World War I but it was also utilized in operations against the Kurds conducted by Saddam Hussein in 1988 in Northern Iraq.²² For some decades the usage of poisonous gas in war has been prohibited by international law, and today “Employing poison or poisoned weapons” is a war crime under Article 8 (2) (b) (xvii) of the ICC Statute.²³ But nevertheless it remains an instrument of modern terrorism; this is especially underlined by the attack on the Tokyo underground station in 1995.

¹⁷ For further details, see MATTHIAS REICHART, *UMWELTSCHUTZ DURCH VÖLKERRECHTLICHES STRAFRECHT* (Protection of the environment by international criminal law, 1999). For Germany, see Section 11 (Para. 3) *Völkerstrafgesetzbuch* (Code of Crimes against International Law): “Whoever in connection with an international armed conflict carries out an attack by military means and definitely anticipates that the attack will cause widespread, long-term and severe damage to the natural environment on a scale out of proportion to the concrete and direct overall military advantage anticipated shall be punished with imprisonment for not less than three years” (Translation by Brian Duffet, Max-Planck-Institut für ausländisches und internationales Strafrecht).

¹⁸ For further details, see Christian Tomuschat, *Schädigung der Umwelt als Verbrechen nach Völkerstrafrecht* (Environmental destruction as crimes under international criminal law), in *VÖLKERRECHT UND DEUTSCHES RECHT* 100, 104 (Hans-Wolfgang Arndt, Franz-Ludwig Knemeyer, Dieter Kugelmann, Werner Meng & Michael Schweitzer eds., 2001); MARTIN HEGER, *DIE EUROPÄISIERUNG DES DEUTSCHEN UMWELTSTRAFRECHTS* (The Europeanization of the German environmental criminal law, 2009), 27-33; GERHARD WERLE, *PRINCIPLES OF INTERNATIONAL CRIMINAL LAW* (2nd ed., 2009), para. 1201-1210.

¹⁹ WALKER, *supra* note 3, at margin number 1.110.

²⁰ See Dederer, *supra* note 5, at 621-632.

²¹ See for example, Hans-Georg Dederer, *Krieg gegen den Terror*, 59 *JURISTENZEITUNG* 421, 424, 429 (2004).

²² GERHARD WERLE, *PRINCIPLES OF INTERNATIONAL CRIMINAL LAW* (2nd ed., 2009), at margin number 308.

²³ For further details, see INES PETERSEN, *DIE STRAFBARKEIT DES EINSATZES VON BIOLOGISCHEN, CHEMISCHEN UND NUKLEAREN WAFFEN ALS KRIEGSVERBRECHEN NACH DEM ISTGH-STATUT* (The criminalization of the use of biological, chemical and nuclear weapons as a war crime under the Rome Statute, 2009).

Furthermore there are activities involving damage to the natural environment that model a legal grey area in between military acts and measures of ecological terrorism. Again Saddam Hussein, who gave the order to ignite oil-rigs in Kuwait during his withdrawal at the end of the Second Gulf War in February 1991, can serve as an example.²⁴ As a result of this the oil-rigs were on fire until November 1991, causing massive oil pollution in the region.²⁵ This measure of Saddam Hussein is, speaking for myself, to be considered as revenge for failure in war and can be referred to as either a military act or as an act of terrorism. If you “see war crimes very generally, as criminal conduct committed in the course of war or other armed conflict”²⁶, it was a war crime because it was committed during Saddam Hussein’s military withdrawal. If you define war crimes – like Gerhard Werle – more narrowly as “a violation of a rule of international humanitarian law that creates direct criminal responsibility under international law”²⁷, the classification as “war crime” depends on the violation of a given international humanitarian law. Another question is whether an act of terrorism can be a war crime as well.²⁸

C. Poisoning of Drinking Water

I. A Short Retrospective in Legal History

Looking at legal history especially considering terrorist crimes against the natural environment, we will find one interesting criminal offence: the poisoning of drinking water in a contained spring. In the words of the famous German philosopher Otfried Höffe of Tübingen University, this criminal offence is an example of an intercultural crime.²⁹ This assumption is especially based on the awareness that a phenomenon like the criminalization of the poisoning of drinking water can be found throughout all epochs of legal history and across criminal codes of every modern society, therefore making the poisoning of drinking water, in the view of Höffe, an intercultural environmental crime. I am not sure about his categorization as an intercultural crime but I think that the existence

²⁴ MICHAEL KLOEPFER & HANS-PETER VIERHAUS, *UMWELTSTRAFRECHT* (The environmental criminal law, 2nd ed., 2002), para. 170; MATTHIAS REICHART, *supra* note 17.

²⁵ *Id.*

²⁶ See WERLE, *supra* note 23, at margin number 929.

²⁷ *Id.*

²⁸ *Id.* at para. 950.

²⁹ See Otfried Höffe, *Eine Konversion der kritischen Theorie? Zu Habermas’s Rechts- und Staatstheorie* (A conversion of critical theory? On Habermas’s legal and political theory), 12 *RECHTSHISTORISCHES JOURNAL* 70, 77 (1993); Otfried Höffe, *GIBT ES EIN INTERKULTURELLES STRAFRECHT?: EIN PHILOSOPHISCHER VERSUCH* (Is there a cross-cultural criminal law? a philosophical attempt, 1999).

of such an offence in nearly every contemporary and historical legal system suggests that attacks against the natural environment with the intent to harm numerous people – as it is typical for modern terrorism – are not novel. There were similar criminal acts in the past.³⁰

II. The Offence of “Poisoning Dangerous to the Public”

Today Section 314 (1) of the *German Criminal Code* criminalizes “Poisoning Dangerous to the Public”: “Whoever poisons, or mixes materials which are dangerous to health into: 1. water in contained springs, wells, pipes or drinking water storage facilities . . . shall be punished with imprisonment from one year to ten years.”³¹ Section 308 states that “(2) If by the act the perpetrator causes serious health damage to another human being or health damage to a large number of human beings, then punishment of not less than two years shall be imposed”.³² Furthermore: “(3) If by the act the perpetrator at least recklessly causes the death of another human being, then the punishment shall be imprisonment for life or for not less than ten years.”³³ In reality, today’s legal practice in Germany involves very few recorded cases of “Poisoning Dangerous to the Public”.³⁴ Nevertheless the poisoning of drinking water can be considered a form of terrorist attack against the natural environment in the future.

D. Concluding Remarks

Let me, at this point, offer a conclusion: people’s fear of terrorist attacks against the natural environment is induced by several factors. Terrorism against the natural environment is not the most frequently used method of terrorism but we can surely detect examples in the past and can furthermore easily imagine such attacks against the natural environment in our near future. It is absolutely essential that we distinguish terrorist attacks from other crimes against the natural environment, especially with regards to crimes involving attacks on property and infrastructure as well as war crimes against the natural environment.

³⁰ See Detlef Krauß, *Gift im Strafrecht (Poison in Criminal Law)*, PRESIDENT OF HUMBOLDT UNIVERSITY IN BERLIN 11 (1999).

³¹ BOHLANDER, *supra* note 8, at s. 314 (1).

³² *Id.* at s. 308 (2).

³³ *Id.* at s. 308 (3).

³⁴ See Wolff, *supra*, note 11 at § 314, margin number 1. Only 10 such cases were recorded as of 2007.

If we do not sharply distinguish the crimes mentioned above, the strong procedural means designed to fight terrorism might also be applied to these other crimes. Only if the perpetrator acts as a member of a terrorist group or with a special terrorist intent can we categorize his or her crimes against the natural environment as acts of terrorism and use all the available procedural measures under national law.