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## **Dissertation Exposé**

*An analysis of illicit trafficking of nuclear and other radioactive material in transnational criminal law through a conceptual and jurisprudential framework*

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## **List of Abbreviations**

CCPCJ	UN Commission on Crime Prevention and Criminal Justice
CPPNM	Convention for the Physical Protection of Nuclear Material
EUROPOL	European Police Office
GICNT	Global Initiative to Combat Nuclear Terrorism
GTRI	Global Threat Reduction Initiative
IAEA	International Atomic Energy
ICAO	International Civil Aviation Organization
IMO	International Maritime Organization
INTERPOL	International Police Organization
ITDB	Illicit Trafficking Database
NTI	Nuclear Threat Initiative
OCDE	Organization for Cooperation and Development in Europe
UNODC	United Nations Office on Drugs and Crime
UNSC	United Nations Security Council
WCO	World Customs Organization

## Research Proposal

### 1. Introduction and background of the research

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The objective of this study is to analyze the offence of illicit trafficking of nuclear and other radioactive materials (from here on *illicit nuclear trafficking*) within the broader field of transnational criminal law through a theoretical and jurisprudential framework. The thesis is based on factual evidence that illicit nuclear trafficking has been creating growing challenges for national authorities at all levels, ranging from law enforcement authorities, to border control officials and local courts. The study aims to explore the nexus between transnational organized crime and illicit nuclear trafficking, an area that has been for long overlooked by the legal academia.

#### Nexus between transnational organized crime and illicit nuclear trafficking

In the past decades, a significant number of crimes (ranging from drugs, to arms and human trafficking etc.) have increasingly been perpetrated across national borders, requiring a unified or regional response to combat them. The illicit use of nuclear and other radioactive materials is no exception to this trend, given the use of such material for a variety of applications in industry, medicine, agriculture, transport and research<sup>1</sup>. The connection between transnational crime and illicit nuclear trafficking has been a subject of concern ever since the problem of nuclear smuggling became known in the early 1990s<sup>2</sup>. Since every State has neighbors whose borders illicit traffickers may wish to exploit, the various possibilities to use these materials outside the State clearly makes this issue a global concern.

Currently, we are witnessing an increase in the illicit nuclear trafficking across borders with media, law enforcement authorities and courts reporting more and more cases on the matter. Notorious cases<sup>3</sup> such as the one in November 2010, when Georgian officials seized four individuals for allegedly trying to sell Cesium-137 (which can be used to make radiological dispersion devices<sup>4</sup>), or the court case in Georgia involving Armenian nationals who had attempted to sell weapon-grade plutonium, are just a couple of examples in a long series. At the end of 2016, the Illicit Trafficking Database (ITDB)<sup>5</sup> of the International Atomic Energy Agency (IAEA) contained almost 3000 confirmed incidents reported by participating States<sup>6</sup>. Out of these, 454 incidents involved unauthorized possession and related criminal activities, 762 involved reported theft or loss and 1622 involved other unlawful activities involving unauthorized removal of nuclear materials during use, storage or transportation<sup>7</sup>. The statistics<sup>8</sup>

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<sup>1</sup> IAEA, *Nuclear technology Review 2016*, GC(60)/INF/2, 7 June 2016.

<sup>2</sup> See, ZAITSEVA, L., *Nuclear Trafficking: 20 Years in Review*, Contribution to WFS Meeting, Erice, August 2010, International Atomic Energy Agency, "Incident and Trafficking Database," 24 April 2014; ZAITSEVA, L., *Nuclear Smuggling Chains: Suppliers, Intermediaries and End-Users*, Centre for International Security and Cooperation, Stanford University, American behavioral Scientists, Vol. 46, No. 6, 2003.

<sup>3</sup> As of December 2013, five of the seven most recent trafficking incidents involving unauthorized possession of highly enriched uranium (HEU) had taken place in the EU's neighborhood in the Black Sea region. One seizure was made on the Bulgaria–Romania border in 1999, three more in Georgia in 2003, 2006 and 2010, and another in Chisinau, Moldova's capital, in 2011. In a sixth HEU case, in France in 2001, the subsequent investigation established criminal connections to the region, particularly to Moldova and Romania, and identified links to the 1999 seizure in Bulgaria.

<sup>4</sup> Radiological dispersion devices are used for building "dirty bombs".

<sup>5</sup> The scope of the database includes incidents which involve unauthorized acquisition, provision, possession, use, transfer or disposal of nuclear and other radioactive material, whether intentional or unintentional, and with or without crossing international borders.

<sup>6</sup> IAEA INCIDENT AND TRAFFICKING DATABASE (ITDB), *Incidents of nuclear and other radioactive material out of regulatory control*, Fact Sheet, 2016, available at: <http://www-ns.iaea.org/downloads/security/itdb-fact-sheet.pdf>.

<sup>7</sup> IBID.

<sup>8</sup> IBID., p. 3.

provided by the IAEA every year since 1995 show an increase in the number of crimes with a transnational element involving nuclear or radioactive materials.

Around 90 States on six continents currently have some form of nuclear infrastructure, including nuclear fuel cycle facilities, power reactors, research reactors, uranium deposits, or devices containing radioactive sources. This is translated in the same number of different legal systems that have or should have in place a legal framework for the regulation of nuclear energy and technology. However, at the moment, the international responses to illicit nuclear trafficking are complicated by scarce national legislation, jurisdictional disputes, inadequate controls, and insufficient coordination among the many countries and organizations responsible for preventing, interdicting and neutralizing illicit trafficking.

Acknowledging the challenges associated with the criminalization and prosecution of illicit nuclear trafficking cases, the purpose of this research will be twofold: first, to discuss and analyze the place of illicit nuclear trafficking within transnational criminal law. Second, to look, in a comparative manner, at the way various national legal systems have implemented legislation to investigate and prosecute these type of crime. It ultimately aims to assess the sufficiency and effectiveness of the legislation in place, particularly when it comes to interpretation and application of these norms by national courts of law.

## **2. Status of the research**

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In order to be able to analyze the place that illicit nuclear trafficking has or should have within transnational criminal law an introduction to the conceptual framework is required. This section will briefly address the status of the research in the field of transnational criminal law, on one side, as well as illicit nuclear trafficking, on the other side. Based on a literature review, it will bring forward two main observations. Firstly, despite the fact that transnational criminal law comprises a relatively large body of literature, there are still unexplored facets of this branch and, illicit nuclear trafficking could potentially be one of them. A second observation concerns the overall topic of illicit trafficking of nuclear materials. When it comes to this field, we can clearly note the existence of an established international legal framework, but as far as the doctrinal research is concerned, this area has not been given enough attention by the legal academia. The section will make the case for the relevance of studying and understanding the interface between transnational crimes in the strict sense and illicit nuclear trafficking.

### **2.1. Established body of literature in transnational criminal law**

Regarding transnational criminal law, a body of literature<sup>9</sup> in this field has been growing since the 1950s, when Phillip Jessup first defined the notion of “transnational law”<sup>10</sup> as the “law that regulates actions or events that transcend national frontiers”. The notion of “transnational crime” was coined later by the UN Crime Prevention and Criminal Justice Branch<sup>11</sup> to identify certain criminal phenomena transcending international borders, transgressing the laws of several states, or having an impact on another country. From the early 1970s, there have been a significant number of publications

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<sup>9</sup> GLESS, S., *Bird's-eye view on worm's-eye view: towards a defendant-based approach in transnational criminal law*, Transnational legal Theory, Vol. 6, No. 1, 2015, p. 120; PASSAS, N., ‘Globalization and Transnational Crime: Effects of Criminogenic Asymmetries’, In Williams, P., Vlassis, D., *Combating Transnational Crime: Concepts, Activities and Responses*, Frank Cass, London, Portland, 2001.

<sup>10</sup> There is a consensus in the literature that a transnational crime is a “law violation that involved more than one country in its planning, execution or impact” and that unlike traditional crimes, they are distinguished by their multinational nature and cross border impact.

<sup>11</sup> FIJINAUT, C., *Transnational Crime and the Role of the United Nations*, European Journal of Criminal Law and Criminal Justice, Issue 8, 2000, p. 119-127.

produced on the concept and definition<sup>12</sup> of organised crime and its transnational dimension. More recently, an extensive international and legal framework has been developed for combating organised crime<sup>13</sup>. Legal scholars have been addressing the field of transnational criminal law as a „distinct system of law (...) different from international criminal law in substance, mode of development, and overall policy goals”<sup>14</sup>. This body of law has been built around the various “suppression conventions” through which states commit to coordinating their individual domestic efforts at suppressing crime with transnational effects and enmeshing them in a set of mutual assistance obligations<sup>15</sup>. In other words, as explained by Currie and Boister, transnational criminal law covers both the international treaty obligations, which require the States to introduce substantive measures into their domestic criminal law schemes, and a procedural dimension concerned with the articulation of inter-state cooperation in pursuit of the alleged transnational crime<sup>16</sup>.

Besides the relatively well-established theoretical framework, there is also a body of law, which governs the investigation, and prosecution of transnational offences. This sum of laws encompasses mainly provisions on transnational offences, their constitutive elements on *actus reus* and *mens rea* and the applicable range of penalties, as well as rules on jurisdiction<sup>17</sup>. It also includes laws on the applicability of domestic criminal law to extraterritorial conduct, rules governing mutual legal assistance, as well as more specific rules<sup>18</sup>.

## 2.2. Remaining unexplored facets of transnational criminal law

In spite of the considerable amount of theoretical literature available, this field still has important unanswered questions and multiple unexplored facets. For example, as noted by Roth and Madsen, when it comes to defining transnational crimes, “the terminology is highly unstable and at least four terms overlap each other”, including transnational crime, transnational organized crime, international organized crime and multinational crime<sup>19</sup>. The difficulty into addressing this problem is that, like terrorism and organized crime, there is no accepted consensus of a definition of transnational crime<sup>20</sup>. Albanese shows that the available evidence suggests that organized crime and transnational crime are not two mutually exclusive types of criminal conduct, but instead, they are overlapping<sup>21</sup> in nature in terms of the crimes committed, the offenders involved and how criminal opportunities are exploited for profit<sup>22</sup>. Other scholars insist on the relevance of separating the notions. The concept of transnational organized crime continues to contain narrow visions embedded in the legalistic theses.

<sup>12</sup> ALBANESE, J., *Deciphering the linkages between organized crime and transnational crime*, Journal of International Affairs, Vol. 16, 2012.

<sup>13</sup> CALCAGNI, M., *The conceptualization of transnational organized crime. A historical perspective*, SIAK-Journal – Zeitschrift für Polizeiwissenschaft und polizeiliche Praxis (2), 72-80.

<sup>14</sup> SHEPTYCKI, J., *Transnational Crime and Policing*, Farnham, Ashgate, 2011; WILLIAMS, P., VLASSIS, D., *Combating Transnational Crime: Concept, Activities, Responses* ISPAC/Frank Cass, Milan, 2001.

<sup>15</sup> See, BOISTER, N., *An Introduction to Transnational Criminal Law*, Oxford University Press, 2012; BOISTER, N., CURRIE, J., *Routledge Handbook of Transnational Criminal Law*, Routledge, 2014.

<sup>16</sup> CURRIE, R., BOISTER, N., *Routledge Handbook of Transnational Criminal Law*, Routledge, 2014.

<sup>17</sup> See, GLESS, S., VARVAELE, J., *Law Should Govern: Aspiring General Principles for Transnational Criminal Justice*, Utrecht Law Review, Vol. 6, Issue 4, 2013

<sup>18</sup> IBID.

<sup>19</sup> ROTH, M., *Historical Overview of Transnational Crime*, In ALBANESE, J., REICHEL, P., *Handbook of Transnational Crime and Justice*, 2<sup>nd</sup> ed., Sage Publications, 2014, p. 5.

<sup>20</sup> IBID.

<sup>21</sup> MUELLER, G., ‘*Transnational Crime: Definitions and Concepts*’, In WILLIAMS, P., AND VLASSIS, D., (eds), *Combating Transnational Crime: Concept, Activities, Responses*, Frank Cass, London, 2001.

<sup>22</sup> ALBANESE, J., *Deciphering the linkages between organized crime and transnational crime*, Journal of International Affairs, Vol. 16, 2012.

These contradictory views are susceptible to generating problems in practice, particularly when law enforcement authorities have to deal with “new” or emerging types of crimes with transnational effects.

Another limit of the field has to do with the various “crime sectors” or categories of transnational criminal law and the extent to which legal scholars studied them. In 2002 and later in 2012, the United Nations Office on Drugs and Crime (UNODC)<sup>23</sup> identified a list of 18 categories<sup>24</sup> of transnational offences, whose inception, perpetration and direct or indirect efforts involve more than one country<sup>25</sup>. Consequently, a body of literature on transnational criminal<sup>26</sup> law has emerged with illicit arms<sup>27</sup>, drugs<sup>28</sup> and human trafficking<sup>29</sup> receiving the most of the focus of transnational crime studies over the past decades. Other crime sectors, such as “sex trafficking” and “organ trafficking” have become prominent in the academic and popular press only in the past years, while emerging offences displaying transnational characteristics, such as illicit nuclear trafficking have been completely ignored from legal analysis. While it can be noted that there has been a significant upsurge in international interest in transnational rule of law problems<sup>30</sup>, the total number of studies are overall small and appear to be in decline<sup>31</sup>.

### 2.3. Consolidation of an international legal framework for illicit nuclear trafficking

A review of the literature of international nuclear law shows that over the past several decades<sup>32</sup>, a range of international legal instruments have been adopted to deal with issues related to nuclear energy and technology<sup>33</sup>. This body of legislation comprises a full legal framework for radiation protection,

<sup>23</sup> See, UNODC, *The Globalization of Crime: A Transnational Organized Crime Threat Assessment*, available at: [https://www.unodc.org/documents/data-and-analysis/tocta/TOCTA\\_Report\\_2010\\_low\\_res.pdf](https://www.unodc.org/documents/data-and-analysis/tocta/TOCTA_Report_2010_low_res.pdf).

<sup>24</sup> These categories include money laundering, terrorist attacks, theft of intellectual property, illicit arms trafficking, aircraft hijacking, maritime piracy, insurance fraud, computer crime, environmental crime, trafficking in persons, trade in human body parts, illegal drug trafficking, fraudulent bankruptcy, infiltration of legal business and the corruption and bribery of public and party officials.

<sup>25</sup> ROTH, M., *Historical Overview of Transnational Crime*, In Albanese, p. 6.

<sup>26</sup> OBOKOTA, T., *Transnational Organized Crime in International Law*, Studies in International and Comparative Law, Hart Publishing, 2010; BOISTER, N., *An Introduction to Transnational Criminal Law*, Oxford University Press, 2012; BOISTER, N., CURRIE, J., *Routledge Handbook of Transnational Criminal Law*, Routledge, 2015; HAUCK., P., PETERKE, S., *International Law and Transnational Organized Crime*, Oxford, 2016; MITSILEGAS, V., ALLDRIGE, P., CHELIOTIS, L., *Globalisation, Criminal Law and Criminal Justice: Theoretical, Comparative and Transnational Perspectives*, Hart Publishing, 2017.

<sup>27</sup> See chapters on illicit trafficking of illicit arms: UNODC, *Study on Firearms: A study on the transnational nature of and routes and modus operandi used in trafficking in firearms*, UN Publication, Vienna, 2015; OBOKOTA, T., *Transnational Organized Crime in International Law*, Studies in International and Comparative Law, Hart Publishing, 2010; THACHUK, K., *Transnational Threats: Smuggling and Trafficking in Arms, Drugs and Human Life*, Greenwood Publishing Group, 2007.

<sup>28</sup> See chapters on illicit trafficking of drugs HAUCK., P., PETERKE, S., *International Law and Transnational Organized Crime*, Oxford, 2016; SHEPTYCKI, J., *Transnational Crime and Policing*, Farnham, Ashgate, 2011.

<sup>29</sup> See chapters on human trafficking UNODC, *Global Report in Trafficking in Persons*, UN Publications, Vienna, 2016; CHEMERINSKY, E., EPSTEIN, R., GILSON, R., KRIER, J., *Transnational Law and Practice*, Wolter Kluwer, 2015.

<sup>30</sup> LLOYD, P., SIMMONS, B., STEWART, B., *Combating Transnational Crime: the Role of Learning and Norm Diffusion in the Current Rule of Law Wave*, In NOLKAEMPER, A., ZURN, M., PEERENBOOM, R., (eds.), *The Dynamics of the Rule of Law*, Cambridge University Press, 2012, p. 153-180.

<sup>31</sup> IBID.

<sup>32</sup> The nuclear security framework currently includes seven treaties that are also part of the 19 treaties (adopted since 1963) comprising the so-called “common universal legal framework against terrorism”. It also includes two UNSC Resolutions (UNSC Resolution 1540 and UNSC Resolution 1373) adopted under Chapter VII of the UN Charter. Other legally binding and non-binding IAEA instruments not comprising common universal legal framework against terrorism are: the Convention on the Early Notification of Nuclear Accidents (1986) and the Convention on the Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986). The INFCIRC/225/Revision 5, while providing recommendations that are *per se* legally non-binding, they can be made legally binding, for example through incorporation in bilateral nuclear cooperation agreements and bilateral and trilateral agreements.

<sup>33</sup> See, STOIBER, K., *Handbook on Nuclear Law*, IAEA, Vienna, 2003; STOIBER, K., CHERF, A., *Handbook on nuclear law: Implementing legislation*, IAEA, Vienna, 2010.



nuclear non-proliferation, nuclear and radiation safety and security, physical protection, nuclear transport, and emergency assistance. These legal instruments adopted under the auspices of the United Nations (UN), International Atomic Energy Agency (IAEA), International Maritime Organization (IMO) and International Civil Aviation Organization (ICAO), are divided into the following three groups: treaties, United Nations Security Council Resolutions, and other IAEA instruments and texts. A number of these instruments contain provisions directly related to efforts to prevent, detect and respond to criminal or unauthorized acts involving nuclear and other radioactive material<sup>34</sup>.

Given the diverse aspects for dealing with illicit nuclear trafficking, no single international instrument has encompassed all provisions relevant to the subject until very recently<sup>35</sup>. For a long time, international criminal law did not recognize illicit nuclear trafficking as a separate crime. Looking back, there were, however, a few treaties that could be used by a domestic prosecutor who was seeking to impose criminal sanctions upon individuals who committed this offence. However, often times, the amalgam of international provisions made their application in practice difficult, particularly if the national legal system did not have the appropriate legal infrastructure in place to make the application of the norms effective<sup>36</sup>. Even in those circumstances, most of the treaties only considered the acts worthy of criminal sanctions if they were linked to nuclear terrorism. Other offences, such as theft of nuclear material were prosecuted under the general offence of theft, as provided by the criminal codes of the countries that conducted the investigation and prosecution.

As evidenced by the evolution of international legal instruments, in the past years, the international community has become aware of the importance of finding new ways to respond to the problem of illicit nuclear trafficking. On 8 May 2016, the Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM)<sup>37</sup> entered into force. The Convention has a threefold scope of application: 1) the physical protection of nuclear material during international transport; 2) the criminalization of offences; 3) and international cooperation and information exchange. The Amendment expands the existing offences identified in the CPPNM, including the theft and robbery of nuclear material not in transport (i.e. in nuclear facilities), and establishes new ones, such as the smuggling of nuclear material. The States parties are required to make a punishable offence under their national law, the intentional commission, for example, of an act without lawful authority which constitutes the receipt, possession, use, transfer, alteration, disposal or dispersal of nuclear material, which causes or is likely to cause death or serious injury to any person or substantial damage to property. Other acts comprise a theft or robbery of nuclear material; an embezzlement or fraudulent obtaining of nuclear material; an act constituting a demand for nuclear material by threat or use of force or by any other form of intimidation<sup>38</sup>.

With these recent legislative developments, States are finding themselves under the pressing requirement to implement or amend the legislation in force in order to align it with the duties and obligations assumed in the CPPNM Convention and its Amendment. Based on the relatively fast pace

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<sup>34</sup> IAEA, *Combating Illicit Trafficking in Nuclear and Other Radioactive Material*, Nuclear Security Series No. 6, Technical Guidance, Vienna, 2007, p. 10.

<sup>35</sup> IAEA, *Combating Illicit Trafficking in Nuclear and Other Radioactive Material*, Nuclear Security Series No. 6, Technical Guidance, Vienna, 2007, p. 11.

<sup>36</sup> VEZ CARMONA, *The International Regime on the Physical Protection of Nuclear Material and the Amendment to the Convention on the Physical Protection of Nuclear Materials*, Nuclear Law Bulletin, 2005; JOHNSON, L., *Facilitating the entry into force and implementation of the Amendment to the Convention on the Physical Protection of Nuclear Material: Observations, challenges and benefits*, Nuclear law Bulletin, No. 96, 2016.

<sup>37</sup> See *Convention on Physical Protection of Nuclear Material (CPPNM) and Amendment thereto*, available at: <http://www-ns.iaea.org/conventions/physical-protection.asp?s=6&l=42>.

<sup>38</sup> VERTIC, *Illicit Trafficking of Nuclear and other Radioactive Material: The Legislative Response*, Development House, London, 2012.

at which States have adhered to these legal instruments<sup>39</sup>, one can argue that combatting the phenomenon of illicit nuclear trafficking clearly represents a concern at the international level. However, as we will see in the following section, combatting this phenomenon has an urgency and resonance that contrasts with the characteristically, slow, careful and, neutral efforts of legal scholars to produce sound doctrinal research in this area.

## 2.4. Scarce doctrinal research on illicit nuclear trafficking

When it comes to illicit nuclear trafficking, to date, besides a handful of IAEA technical guidance manuals and handbooks<sup>40</sup>, as well as a few brief studies performed by legal practitioners<sup>41</sup>, there is no academic literature in this field. The subject has been briefly considered in a number of papers and articles<sup>42</sup>, however, to our knowledge, it has never been considered from the perspective of transnational criminal law. There are also no comprehensive studies which analyzed the way States have interpreted and applied in their jurisdictions the relevant provisions for investigating or prosecuting these types of cases. In our view, the current deficiency of academic literature on illicit nuclear trafficking coupled with the increasing numbers of cases involving this offence confirms the relevance and timeliness of a study on this topic.

## 3. Proposed Field of Research

In order to address the topic of illicit nuclear trafficking within transnational criminal law, the dissertation will attempt to answer two main questions that are inter-dependent. Each of these questions contain a set of sub-questions, which also need to be addressed in order to obtain a full picture of the challenges associated with the criminalization of this offence.

In the following, we will introduce each of the questions and accompany it with some explanatory remarks. We will then briefly discuss the main legal concepts and institutions that will be analyzed in the study when answering the proposed research questions.

Research Question 1: *Does illicit nuclear trafficking qualify as a transnational crime?*

Sub-question a): *Which are the legal elements that make this type of crime similar or different to other transnational crimes such as illicit trafficking of drugs, arms or persons, etc.?*

Sub-question b): *Could any potential similarities between these crimes yield lessons for judicial and law enforcement authorities regarding efforts to combat illicit nuclear trafficking?*

<sup>39</sup> As of May 2017, there are 109 States parties that signed the Amendment to the CPPNM. For more details, see the timeframe and the full list of States that have signed and/or ratified the CPPNM and its Amendment under the following link: [http://www.iaea.org/Publications/Documents/Conventions/cppnm\\_amend\\_status.pdf](http://www.iaea.org/Publications/Documents/Conventions/cppnm_amend_status.pdf).

<sup>40</sup> See, IAEA, *Combating Illicit Trafficking in Nuclear and Other Radioactive Material*, Nuclear Security Series No. 6, Technical Guidance, Vienna, 2007; IAEA, *The International Legal Framework for Nuclear Security*, International Law Series, No. 4, 2011. Besides these the IAEA has a few other types of publications relating to this area such as nuclear security fundamentals, nuclear security recommendations, implementing guides, and technical guidance.

<sup>41</sup> VERTIC, *Illicit Trafficking of Nuclear and other Radioactive Material: The Legislative Response*, Development House, London, 2012; SPENCE, S., *Legal aspects of the control and repression of illicit trafficking of nuclear and other radioactive materials – Is there a need for an international convention?*, Nuclear Law Bulletin, Vol. 2012.

<sup>42</sup> ZAITSEVA, L., *Organized Crime, Terrorism and Nuclear Trafficking*, Strategic Insights, Vol. 6, Issue 5, 2007; DEMEYERE, B., *Sanctioning illicit trafficking in nuclear materials and other radioactive substances through individual criminal responsibility: falling between the cracks of international criminal law?*, Leuven Centre for Global Governance Studies, Nov. 2007; ZAITSEVA, L., STEINHAUSLER, F., *Nuclear Trafficking Issues in the Black Sea Region*, EU Non-Proliferation Consortium, No. 39, 2014; MURAUSKAITE, E., *Nuclear Smuggling and Threats to Lithuanian Security*, Lithuanian Annual Strategic Review, 2015.



The central question that this study aims to answer is whether illicit nuclear trafficking qualifies as a transnational crime. Barberet showed that the extent to which an offence is or becomes transnational is a key research question in the field of transnational (organized) crime<sup>43</sup>. In the scholar's view, answering whether a crime is transnational or not depends on a direct measurement, not on an inference of transnationality<sup>44</sup>. Departing from these considerations, the study will analyze, from a conceptual point of view, the "measurable" legal criteria that needs to be met for such an offence to fall under the provisions of transnational criminal law.

In order to answer the sub-questions, one assumption of this study is that prosecution and investigation of illicit nuclear trafficking might be facing many of the same challenges as other established transnational crimes. More specifically, it is evident that some forms of illicit trafficking share certain common characteristics. For instance, from a *factual* point of view, well-developed routes<sup>45</sup> for smuggling drugs are also used to smuggle people, firearms and other forms of contraband. An inference will be made that this can also be the case for nuclear and radioactive materials.<sup>46</sup> Starting from these factual suppositions, this study will focus mostly on the *legal elements* of this crime: the criminal act (*actus reus*); the criminal intent (*mens rea*); and the concurrence of the two. It will also address the additional elements of the crime such as *causation* and *harm*. In our opinion, comparing the similarities and differences between the legal elements of various forms of transnational crimes and illicit nuclear trafficking could inform us on the difficulties encountered in practice to criminalize this particular offence. At the same time, while answering the questions above, the study will also aim to carefully identify the unique<sup>47</sup> legal characteristics<sup>48</sup> of illicit nuclear trafficking, the additional challenges and opportunities that they pose for judicial and law enforcement authorities.

**Research Question 2: *How have different national legal systems incorporated in their national legislation the substantive crime of illicit trafficking of nuclear and other radioactive materials?***

Sub-question a): *How have the different national law enforcement authorities dealt with the investigation and prosecution of these cases?*

Sub-question b): *Based on the existing jurisprudence, what were the challenges the courts encountered when dealing with these types of crimes?*

Currently, one of the main concerns surrounding the use of criminal prosecution against nuclear traffickers is its apparent ineffectiveness.<sup>49</sup> That is because some legal systems have inconsistent laws or not well enough developed procedures to prosecute trafficking crimes. Successful prosecutions and

<sup>43</sup> BARBERET, R., *Measuring and Researching Transnational Crime*, In ALBANESE, J., REICHEL, P., *Handbook of Transnational Crime and Justice*, 2<sup>nd</sup> ed., Sage Publications, 2014.

<sup>44</sup> IBID.

<sup>45</sup> Other characteristics could be transnational conspiracies involving suppliers, intermediaries and end users, illegal movement of commodities and money across international borders, *modus operandi* and illicit markets etc.

<sup>46</sup> CHATIZ, I., *Strengthening Border Control and Management*, United Nations Office on Drugs and Crime, In IAEA, *Illicit Nuclear Trafficking: Collective Experience and the Way Forward*, Vienna, 2008, p. 63.

<sup>47</sup> For instance, the "radioactive" feature of the materials presents technical opportunities for detection of smuggling, but it also presents the distinctive challenge of giving rise to environmental and radiological safety dangers that could affect people and goods. Smuggled nuclear and radioactive materials place at risk the population and environment of every state through which they pass, including the state of origin, therefore a synchronized response seems imperative. Consequently, forensic analysis of nuclear material or nuclear crime scenes, for example, may require special capabilities, which often times, go beyond those possessed by a single state.

<sup>48</sup> Determining the seriousness of an incident involves such factors as the type and quantity of material involved, the perpetrator's criminal intent or lack thereof, whether the incident created actual or potential injury to persons or property and whether the offence was repeated.

<sup>49</sup> STOIBER, C., *Model Elements for a National Legal Framework on Illicit Trafficking*, In IAEA, *Illicit Nuclear Trafficking: Collective Experience and the Way Forward*, Vienna, 2008, p. 109.

convictions, require extensive investigative work, a high burden of proof, the establishment of criminal intent, and effective presentation of the above in courts<sup>50 51</sup>. For this reason, another objective of this study is to analyze, through a jurisprudential framework, the way national systems have incorporated in their national legislation the substantive crime of illicit nuclear trafficking. It will also look, in a comparative manner, at the way national law enforcement authorities have dealt with investigation and prosecution of this crime, by tracing, collecting and analyzing the existing case law in the field<sup>52</sup>.

The dissertation will answer the cluster of research questions introduced above, by analyzing legal concepts and institutions relevant for the field of transnational criminal law. They will be structured thematically as follows. The introductory part of the study will provide a conceptual framework on the nature<sup>53</sup> of transnational crimes, by focusing on the generic meaning of the concept, as well as the characteristics and causes of this type of crime. The study will also address topics such as the horizontal and vertical nature of transnational crimes, and will discuss the role of suppression conventions, penalties, provisions for procedural cooperation and subjects of transnational criminal law. Within this context, a part of the dissertation will analyze the transnational nature of the crime of illicit nuclear trafficking and whether it qualifies as such. In doing so, the first steps will be to understand the way it was criminalized both by international legal instruments and national legislation.

The study will also discuss the challenges associated to transposing the international legislation into the national system in a manner that concisely, accurately and consistently codifies the differently framed provisions in the several international instruments that are currently in force. Therefore, the core of the dissertation will consist of a comparison of various ways the provisions regarding illicit nuclear trafficking<sup>54</sup> have been implemented in national legislation. Expecting that legislative practices vary considerably among different nations, a further question that this thesis will analyze is how to adjust these elements in a way that complies with the national approach, while achieving the maximum degree of harmonization with international norms and practices.

This theoretical framework will set the stage for further analyzing the way this offence interacts with other relevant provisions, such as those in penal and criminal procedure codes, laws on counter-terrorism and organized crime, custom codes, licensing laws, import/export and trade laws (including trade in strategic or dual-use goods legislation), money laundering codes, laws on mutual criminal

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<sup>50</sup> KHRIPUNOV, I., STOIBER, K., *Legal Framework for Strengthening Nuclear Security and Combating Nuclear*, NATO Science for Peace and Security Series, and Societal Dynamics, 2012, p. 12.

<sup>51</sup> When it comes to the specificities of the offence of nuclear trafficking, the types of materials, the conditions in which they were smuggled and the intentions of the end user dictate the nature of the threat. Sometimes, considerations of secrecy prevent a successful investigation, while the involvement of individuals from several countries, unresolved cross-border issues, unclear jurisdiction and reluctance to share the information necessary lead to ineffective penalties and failed convictions.

<sup>52</sup> To date, there is no compendium of collected jurisprudence in this field, the IAEA providing only factual descriptions of the unauthorized acts involving nuclear and radioactive materials.

<sup>53</sup> The analysis will depart from and build on already existing literature in the field such as: CHEMERINSKY, E., EPSTEIN, R., GILSON, R., KRIER, J., *Transnational Law and Practice*, Wolter Kluwer, 2015; EDWARDS, A., AND GILL, P., *Transnational Organised Crime: Perspectives on Global Security*, Routledge, London, 2003; FRIEDRICHS, D., *Transnational Crime and Global Criminology: Definitional, Typological and Contextual Conundrums*, Social Justice, Issue 34, No. 2, 2007.

<sup>54</sup> The analysis will depart from and build on already existing literature in the field such as: STOIBER, K., CHERF, A., *Handbook on nuclear law: Implementing legislation*, IAEA, Vienna, 2010; BALATATSKY, G., SEVERE, W., LEONARD, L., *Illicit Trafficking in Radiological and Nuclear materials: lack of regulations and attainable disposal for radioactive materials*, WM Conference, Tucson, 2007; BUIJZE, A., KORTMANN, T., VERWIJIS, C., *Transparency and Nuclear law: an instrumental perspective*, 2014; DEMEYERE, B., *Sanctioning illicit trafficking in nuclear materials and other radioactive substances through individual criminal responsibility: falling between the cracks of international criminal law?*, Leuven Centre for Global Governance Studies, Nov. 2007; JOHNSON, L., *Facilitating the entry into force and implementation of the Amendment to the Convention on the Physical Protection of Nuclear Material: Observations, challenges and benefits*, Nuclear law Bulletin, No. 96, 2016.

assistance and extradition, laws on the management and transport of hazardous substances, aircraft and ship/airport and port security laws, rail security laws, laws on surveillance and intelligence gathering and others.

The study will also identify the subjects<sup>55</sup> of transnational criminal law (including governmental and non-governmental organizations) that are active in the field of combating illicit nuclear trafficking. As it transpires from the existing literature, many different actors with their own motivations may trigger what ultimately becomes a legal response. Non-governmental organizations (NGOs) have been active in highlighting criminal threats and developing responses. Private entities and public officials have always played a prominent role in identifying and responding to transnational criminal threats. Officials such as investigators, prosecutors, and judges that link up in transnational law enforcement networks with officials in other states are very influential in steering the response to transnational crime because they share a global understanding of the problem. The study will discuss their role and how they contribute to the objective of combating this crime.

Nonetheless, the dissertation will put forward and discuss the premise that law enforcement activity against extraterritorial transnational crime requires international cooperation. Most of the more modern suppression conventions provide for general obligations to cooperate in law enforcement. However, in order to take effective steps against transnational crime, national law must first establish jurisdiction and then enforce it. Therefore, a consistent part of the study will address issues such as the scope of legal assistance provisions in the suppression conventions and the way this is applicable for the substantive crime of illicit nuclear trafficking.

Activities such as the gathering of evidence, the service of legal documents, and the recovery of assets extraterritorially are exercises in enforcing jurisdiction<sup>56</sup>. States cannot undertake them unilaterally; their powers are limited by the general principle that enforcement of jurisdiction is territorial. These activities require more formal cooperation than police-to-police cooperation because they involve judicial processes. States are thus compelled to seek legal assistance<sup>57</sup> from the territorial state to enforce their coercive powers in another jurisdiction. Consequently, a part of the dissertation will briefly discuss the nature of legal assistance and its development. It will then examine the provisions in the suppression conventions setting out the scope of legal assistance obligations, the range of kinds of legal assistance that can be requested, the conditions for legal assistance, and the procedure for making requests. It will also cover other issues such as operational cooperation in combating illicit nuclear trafficking, through liaison officers, joint investigations and special investigative techniques.

When a state establishes its criminal jurisdiction over a particular transnational crime, that prescription renders a particular action potentially criminal. Enforcement<sup>58</sup> is the process of investigating the particular offence and trying the accused in order to establish the elements of the crime in the particular

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<sup>55</sup> DEFLEM, M., MCDONOUGH, S., 'International Law Enforcement Organisations', In Kethineni, S., (ed.), *Comparative and International Policing, Justice, and Transnational Crime*, Carolina Academic Press, Durham, 2010.

<sup>56</sup> The analysis will depart from and build on already existing literature in the field such as: MEESEN K., *Extraterritorial Jurisdiction in Theory and Practice*, Kluwer, London, 1996; RYNGAERT, C., *Jurisdiction in International Law*, Oxford University Press, 2008; BLACKMORE, J.D., *The Jurisdictional Problem of the Extraterritorial Conspiracy*, Criminal Law Forum, Vol., 17, 2006;

<sup>57</sup> Mutual legal assistance will address topics such as best procedures for taking evidence or statements from persons; effecting service of judicial documents; executing searches and seizures, and freezing; examining objects and sites; providing information, evidentiary items and expert evaluations; providing originals or certified copies of relevant documents and records, including government, bank, financial, corporate or business records; identifying or tracing proceeds of crime, property, instrumentalities or other things for evidentiary purposes etc.

<sup>58</sup> The analysis will depart from and build on already existing literature in the field such as: HUFNAGEL, S., HARIFELD, C., BRONNIT, S., *Cross-Border Law Enforcement: Regional Law Enforcement Cooperation—European, Australian and Asia-Pacific Perspectives*, Routledge, Abingdon, 2011.

case. An important part of the study will address extradition<sup>59</sup>, by starting with the legal basis for extradition (extradition treaties, schemes and national laws) applicable for the case of illicit nuclear trafficking. It will also address, in a comparative manner, the conditions that need to be fulfilled (double criminality, sufficiency of evidence, specialty), as well as the possible exceptions to extradition that could be granted when prosecuting cases of illicit nuclear trafficking. A last part of the study will contain the conclusions and recommendations. A more detailed outline of the research is available in section 6 below.

## 4. Methodology

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One of the most difficult problems associated with studying transnational crime is that it is often difficult to address it given the dimensions and geography of the problem worldwide. Hard data is difficult to obtain, because often times, these crimes are not detected, reported and prosecuted. In order to be able to overcome these potential limitations, the following methodology was chosen.

### 4.1. Comparative functional approach

To the author's knowledge, this is the first legal study that attempts to look in a *comparative functional manner*<sup>60</sup> at the nexus between illicit nuclear trafficking and transnational crime. In order to address the questions posed in the "Research Questions" section, the dissertation will combine a theoretical approach with a comparative approach.

The theoretical approach will serve to address the overall topic of transnational criminal law and assess whether illicit nuclear trafficking falls under its criteria. The author will make a selection of relevant legal problems that arise when investigating and prosecuting illicit trafficking of nuclear materials, and analyze and compare the ways various national courts have dealt in practice with these issues. To achieve this, a study of authorities as well as relevant case law of various courts and tribunals dealing with these issues will be performed. In order to identify the most relevant legal cases, the study will use incidents (publicly available) found in the IAEA Illicit Trafficking Database, which has identified almost 3000 cases of illicit trafficking of nuclear and radioactive materials.

Since these type of incidents were only recorded in a factual manner, the objective of this study is to address and analyze them from a legal point of view, by focusing on the legal elements of the crime of illicit nuclear trafficking<sup>61</sup>.

### 4.2. Empirical work

The author will perform empirical work by conducting interviews with practitioners in the field of transnational criminal law and, particularly, illicit trafficking of nuclear and radioactive materials, in order to obtain an understanding of the extent to which this type of crime can fall under the branch of

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<sup>59</sup> The analysis will depart from and build on already existing literature in the field such as: BASSIOUNI, M., WISE, E., *Aut dedere aut judicare: The Duty to Extradite or Prosecute in International Law*, Brill, Nijhoff, 1995; JONES J.R., DAVIDSON, R., *Extradition and Mutual Legal Assistance Handbook*, 2nd ed., Oxford University Press, 2010.

<sup>60</sup> The dissertation will focus on (common) legal problems and legal solutions in the compared legal systems, rather than on the (diverging) rules and doctrinal frameworks. This method will be complemented by other methods which constitute together the whole toolbox for comparative research: the structural method, the analytical method, the law-in-context method, the historical method and the common-core method.

<sup>61</sup> Zaitseva is one of the few authors who attempted to make a historic incursion into the nuclear trafficking trends. Based on her accounts, these countries had no criminal law legislation in place that would make for a substantive crime under national law and they were mainly dismissed as thefts, if they ever got to be investigated and prosecuted. In the past two decades, many countries have started initiatives to improve their detection capabilities at national borders and points of entry and to collect uncontrolled radioactive sources. See, ZAITSEVA, L., *Organized Crime, Terrorism and Nuclear Trafficking*, Strategic Insights, Vol. 6, Issue 5, 2007, p. 1.



transnational criminal law. The author will also attempt to acquire information by liaising with relevant international organizations working in this field, such as the IAEA and UNODC. For the purpose of our study we will discuss the role of various international organizations such as the IAEA, the Organization for Economic Development (OECD), or at the level of the European Union, the Euratom Agency. The role of other inter-governmental organizations, civil society, and particularly courts of law will also be addressed by directly engaging with legal experts.

### 4.3. Potential limits of the research

A potential obstacle to research in the field of nuclear law, and mainly illicit trafficking of nuclear and radioactive materials is posed by the fact that most of the cases are confidential in nature, sometimes due to State's perception that nuclear-related issues fall under the realm of national security. Therefore, the data and information for research will be collected primarily by reviewing existing literature and conducting a review of available case law, along with interviews with practitioners and researchers of the subject. The study will try to avoid a Eurocentric approach, and will present state practice, national legislation and courts decisions that encompass Asian, Pacific, African and South American legal systems.

## 5. Proposed Dissertation Outline

Due to potential new findings in the course of the project, the structure of the dissertation will most likely require amendments. At this initial stage, we suggest the following plan for the dissertation.

Introduction (Literature review, theoretical framework, methodology)	
Relevance of the subject, theoretical framework and methodology	This chapter will look at the nexus between transnational criminal law and the phenomena of illicit trafficking of nuclear and radioactive materials
Books in the field of transnational criminal law, scholarly journals (See bibliography)	
Part I: Transnational nature of the crime of illicit trafficking of nuclear material	
Chapter I: Elements of transnational crime	This chapter will look at the theoretical framework of what constitutes a transnational crime. Methodologically, this will be done by assessing the list of 18 categories of transnational crimes, as categorized by UNODC.
Books in the field of transnational criminal law, scholarly journals (See bibliography)	
Chapter II: The offence of illicit nuclear trafficking	<b>Address Research Question 1 and its sub-questions</b> (See formulation above): Based on the theoretical framework provided in the chapter above, an analysis will be made in order to answer whether the offence of illicit trafficking of nuclear and radioactive material qualifies as a transnational crime
Papers, articles and books in the field of illicit trafficking of nuclear and radioactive materials (See bibliography)	
Part II: Criminalization of the offence of Illicit trafficking of nuclear materials	
Chapter I: Criminalization through international legal instruments	This section will look at: <ul style="list-style-type: none"> <li>• "Hard law": International legal instruments such as the CPPNM; ICSANT; Beijing Convention; Maritime Safety Convention and Protocol; UNSC Res. 1540 (domestic controls, measures to detect, deter, prevent and combat illicit trafficking; and import and export control measures) and the UN Global Counter-Terrorism Strategy;</li> <li>• "Soft law": IAEA guides and recommendations (IAEA Code of Conduct on the Safety and Security of Radioactive Sources; Supplementary Guidance on the Import and Export of Radioactive Sources; INFCIRC/225 etc., IAEA Nuclear Security Series);</li> </ul>

	Nuclear Suppliers' Group Guidelines; Zangger Committee Guidelines.
Chapter II: Criminalization in national legislation	<p><b>Address Research Question 2</b> (See formulation above)</p> <ul style="list-style-type: none"> <li>• Look at the domestic law and the criminal law provisions that implement those treaty obligations</li> <li>• Comparative analysis by looking at various criminal codes, border control codes, export control agreements etc. and the way they have implemented various provisions for the criminalization of illicit trafficking of nuclear and other radiological materials</li> <li>• Comparative study: mapping of criminalization provisions in various legal systems including, among other, Australia, Brazil, Canada, Croatia, Finland, France, Indonesia, Israel, Italy, Japan, Lithuania, Malta, Mexico, Montenegro, Netherlands, Republic of Moldova, Singapore, Spain, UK, USA, Viet Nam etc.</li> </ul>
Papers, articles and books (See bibliography)	
Data obtained from empirical work – mapping of national legislation of various legal systems	
<b>Part III: The offence of illicit nuclear trafficking in court practice</b>	
Chapter 1: Actors/ stakeholders	This section will look at the actors and stakeholders involved in dealing with cases of illicit trafficking of nuclear and radioactive materials
<p>Chapter 2: Enforcement authorities</p> <ol style="list-style-type: none"> <li>1. Investigation and prosecution (with subchapters on overview of the investigations, radiological crime scenes, forensic examinations; evidence gathering, confiscation of proceeds of crimes)</li> <li>2. Adjudication</li> </ol>	<p><b>Address Research Question 2 and its sub-questions</b> (See formulation above)</p> <ul style="list-style-type: none"> <li>• Comparative analysis between various codes of criminal procedure; analysis of provisions regarding issues related to the investigation, prosecution and adjudication</li> <li>• Identify and analyze existing case law (jurisprudence will be analyzed thematically on topics of interest)</li> </ul>
Papers, articles and books (See bibliography)	
Data obtained from case law collection	
Data obtained from interviews with law enforcement practitioners involved in the investigation and prosecution of illicit trafficking of nuclear and radioactive cases	
<b>Part IV: International cooperation for combating illicit nuclear trafficking</b>	
Chapter 1: Forms of international cooperation in nuclear illicit trafficking	<ul style="list-style-type: none"> <li>• Look at obligations arising from the Security Council resolutions; tools provided by the universal counter-terrorism conventions; interplay with bilateral and multilateral instruments</li> </ul>
<p>Chapter 2: Extradition</p> <ol style="list-style-type: none"> <li>1. Principle of <i>aut dedere aut judicare</i></li> <li>2. Extradition procedure: overview and comparative aspects with other forms of transnational crimes</li> <li>3. Legal basis for extradition and conditions (conditions related to the individual, facts, punishment, procedure, competence)</li> </ol> <p>Chapter 3: Other forms of mutual legal assistance in matters related to illicit trafficking</p> <ol style="list-style-type: none"> <li>1. Transfer of criminal proceedings</li> <li>2. Execution of foreign sentences</li> </ol>	<p><b>Address Research Question 1 and its sub-questions</b></p> <ul style="list-style-type: none"> <li>• Comparative analysis regarding international cooperation for combating other types of transnational crime for identifying lessons learned (if applicable) and their potential use for addressing the topic of international cooperation for combating illicit trafficking of nuclear and radioactive materials</li> <li>• Identify and analyze the existing case law (jurisprudence will be analyzed thematically on topics of interest)</li> </ul>



3. Recognition of foreign criminal judgements	
Papers, articles and books (See bibliography)	
Data obtained from case law collection	
Data obtained from interviews with law enforcement practitioners involved in the investigation and prosecution of illicit trafficking of nuclear and radioactive cases	
Part V: Conclusions and recommendations	
Conclusions on the data obtained while conducting the study	

## 6. Milestones

The following table contains a tentative timeframe for completing the research afferent to the dissertation.

Phase 1	Completion of the requested course syllabus
	Completion of course syllabus in International Law and Austrian law requested (University of Vienna, Austria)
Phase 2	Research phase to identify the dissertation topic
	<ul style="list-style-type: none"> <li>Complete course syllabus in International Law and international criminal law relevant for the subject of my dissertation (University of Vienna, Austria)</li> <li>Visiting Researcher, Faculty of Law, Georgetown University, USA</li> </ul>
Phase 3	Prae-Doc fellowships in the field of the dissertation
	<ul style="list-style-type: none"> <li>UNODC (United Nations Office on Drugs and Crime), Terrorism Prevention Branch, Vienna, Austria</li> <li>CTBTO (Comprehensive Nuclear Test Ban Treaty Organization), External Relations and International Cooperation, Vienna, Austria</li> <li>IAEA (International Atomic Energy Agency), Office of Legal Affairs, Vienna, Austria</li> <li>Summer Graduate Fellowship, Nonproliferation Education and Research Center (NEREC), Korean Advanced Institute of Science and Technology (KAIST), South Korea</li> </ul>
Phase 3	Drafting and editing of the dissertation
	Department of Department of European, International and Comparative Law, Faculty of Law, University of Vienna, Austria
Phase 4	Review and Defense
	Department of Department of European, International and Comparative Law, Faculty of Law, University of Vienna, Austria

## 7. Suggested Bibliography and Resources

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