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NEW TRANSDISCIPLINARY DIRECTIONS IN INTERNATIONAL LAW?

NOVAS DIREÇÕES TRANSDISCIPLINARES NO DIREITO INTERNACIONAL?

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Abstract: Transdisciplinarity has started to attract attention in teaching and research, including in international law, because finding the most appropriate solutions is a current challenge in the context of the dynamism given to international society by the chromatic of numerous mutations, global crises and developments. New technologies and discoveries in biology and medicine can lead to new and disciplinarily complex situations that require an adapted legal response. Sustainable development often expressed through the alternative concept of living well within integral development and modern technologies have changed the way people work and business is conducted, producing an increase in inter-connectivity and collaboration against issues of adaptation to different cultures, age differences, perceptions and ways of working, characteristics that are beginning to circulate in research and education. Our proposals and conclusions concern the adaptation of international academic work and in essence truly herald the season of change for which the key is multi- and transdisciplinary preparation for this new era. For the elaboration of this article, we used the exploratory method, based on primary and secondary sources.

Keywords: International Law. Humanity. Sustainable development. Transdisciplinarity. Technologies. Juridical mutations.

Resumo: A transdisciplinaridade passou a chamar a atenção no ensino e na pesquisa, inclusive no direito internacional, pois encontrar as soluções mais adequadas é um desafio atual no contexto do dinamismo conferido à sociedade internacional por uma cromática de inúmeras mutações, crises e desdobramentos globais. Novas tecnologias e descobertas em biologia e medicina podem levar a situações novas e disciplinarmente complexas que exigem uma resposta legal adaptada. O desenvolvimento sustentável muitas vezes expresso através do conceito alternativo de viver bem dentro do desenvolvimento integral e as tecnologias modernas mudaram a forma como as pessoas trabalham e conduzem os negócios, produzindo um aumento na interconectividade e colaboração contra problemas de adaptação a diferentes culturas, diferenças de idade, percepções e formas de trabalho, características que começam a circular na pesquisa e no ensino. As nossas propostas e conclusões dizem respeito à adaptação do trabalho académico internacional e, em essência, anunciam verdadeiramente a época de mudança para a qual a chave é a preparação multi e transdisciplinar para esta nova era. Para a elaboração deste artigo utilizou-se o método exploratório, com base em fontes primárias e secundárias.

Palavras-chave: Direito internacional. Humanidade. Desenvolvimento sustentável. Transdisciplinaridade. Tecnologias. Mutações jurídicas.

***JEL Codes**: I21, K33, K38, Q01, O35, Q55.*

Research topic and rationale for its choice

The research methodology used for this study consists of quantitative and integrative solutions, combining theoretical research and practical analysis of recent developments in international law. By using a transdisciplinary methodology, it aims to examine legal issues from the broad perspective of knowledge and methods from various related disciplines such as comparative law, security studies, international relations and legal sociology. This type of analysis allows the identification and assessment of emerging trends and the interaction between legal and non-legal factors in international law.

1. Introductory

`For several years, humanity has been going through a kaleidoscope of crises (global economic and financial, health, of the development model to be followed, geo-strategic, in terms of people's living standards and, last but not least, energetic) all categories of stakeholders being obliged to answer them as adequately as possible.`[1] The developments of modern society have as their specificity the very universality that encompasses all that exists and is common to all. The landscape of relations between participants is shaped by the existence of several characteristics that define universality such as: 1) conventionalism characterised by international agreements that become binding on the parties and are applicable in all similar situations; 2) limited coercion, in the sense that public international law does not have the coercive force of domestic laws, but is based on cooperation and consensus between states and other international actors, with no central authority. We have in mind that body of rules on issues as diverse as the rights and obligations of states in diplomatic or trade relations, armed conflicts, human rights, environmental protection, the law of the sea and space law, and others. The differences in relation to domestic law lie in the very broad scope covering relations between states and other participants in international legal relations.

In this area, mutations or changes can be subtle and occur over time reflecting gradual changes, or they can be major mutations when events such as wars or significant political changes affect international practices and views. The relevance of our discussion considers the three types of mutations: the evolution of international custom, the development of treaties and jurisprudence. The explanations are based on legal logic: 1) mutations can occur when the practices of states change or develop, which can lead to the creation of a new international custom or the modification of an existing custom, as we have witnessed in the law of communications and new

[1] In Miron, D., *Micro and Macroeconomic Impact of the EU Energy Policies*. Amfiteatru Economic, 25(63), 2023, p. 294.

technologies; 2) when new treaties are signed or when existing treaties are modified or interpreted differently by states; or 3) when international courts arrive at a different interpretation or decision given against the background of a new issue in public international law.

Will it be possible to research public international law through a transdisciplinary method? At a fairly early level this process has already begun. The present paper starts from the idea that this branch of law is a compound of education and research in the first place, for the elaboration of which the method of specific scientific introspection was used in conjunction with the transdisciplinary method based on primary and secondary data from scientific journals, books, documents, expert opinions and other publications[2]. The arguments and conclusions of this paper are intended to emphasize the importance of understanding reality, going through the meta-analysis corresponding to the universality of international law, not necessarily through the lens of politics, but through research although, unequivocally, the dynamics of public international law in contemporary society is strongly influenced by political, economic and social changes around the world. We can think only of what we refer to as transdisciplinarity today, while international law remaining the foundation of new legal constructions that are nothing more than instruments of economic integration and the regulation of market relationships, both at regional level, within the European Union, and at world level within the World Trade Organization[3].

While international law was once considered a field separate from any influence of any other discipline, today it is increasingly inter or transdisciplinary and intersects with many other fields of knowledge, such as political science, economics, sociology, philosophy, psychology, culture, religion, biology, technical sciences etc because, in reality, there are no high walls between disciplines. All fields of law are confronted with this phenomenon. In our planetarized world, where interactions between states and other entities are increasingly complicated and frequent, international law is essential both to develop, first and foremost, the regulation of international relations and the promotion of peace and cooperation between nations, and to find new solutions to climate change, cyber security, counterterrorism, human rights, migration, etc.

2. Specific considerations and their ramifications. Humanity, quo vadis?

[2] The transdisciplinary method is increasingly applied in research. See for details Cerasela Crăciun, *Research methods and techniques,* University Publishing, Bucharest, 2015.
[3] Ionel Didea, Diana Maria Ilie, *(R)evolution of the insolvency law in a globalized economy*, „Juridical Tribune - Tribuna Juridica", Volume 9, Issue 1, March 2019, p. 94.

We can therefore say that international law today enjoys universality. Traditionally, the universality of this field refers to international law as a system of law that has global validity and is binding on all states. In this sense, universality refers primarily to formal aspects and encompasses the form of the modern state and, with it, the principles of sovereign equality, non-intervention, peaceful coexistence and cooperation between independent states[4] .

From this perspective, of the search for a common expression, public international law presents itself as a recent mathematics of all contemporary law. A common challenge for the two disciplines has been identified. This is to promote the exercise of global citizenship, active, supportive, responsible and committed to sustainable development, contextualised within the Sustainable Development Goals. The mission of universities is elevated to a driving force for social transformation in different dimensions[5]. We can look at global citizenship in the light of its multidisciplinary journey. While lawyers have focused on the development of international human rights law, political scientists have examined the role of states in protecting these rights, and sociologists have explored the impact of human rights on social structures[6] . At the same time, scholars from different disciplines have increasingly drawn on each other's experience to better understand the complexity of the issues surrounding these rights and freedoms[7] .

Global citizenship or, as it is often called, planetary citizenship no longer seems an unattainable ideal. The cosmopolitan citizenship discussed in the legal theory of international law is an interesting and legally feasible aspect. It can be developed through transdisciplinarity and this

[4] André Nollkaemper, *Universality. Piracy - UNCLOS (UN Convention on the Law of the Sea) - Customary international law - Erga omnes obligations - Peremptory norms / ius cogens,* Published under the auspices of the Max Planck Institute for Comparative Public Law and International Law under the direction of Professor Anne Peters (2021-) and Professor Rüdiger Wolfrum (2004-2020), material available by subscription here: https://opil.ouplaw.com/display/10.1093/law:epil/9780199231690/law-9780199231690-e1497, accessed 04.03.2023. For a particulare aplication see Cristina Elena Popa Tache, *International investment protection in front of the states role in crisis times to managing disputes*, in „Juridical Tribune – Tribuna Juridica", Volume 10, Issue 3, December 2020 p. 458; Vytis Valatka, Vaida Asakavičiūtė, *The philosophy of international law of Modern Scholasticism: the theory of just war*, „Juridical Tribune – Tribuna Juridica", Volume 12, Issue 3, October 2022, p. 317, 318.

[5] In universities in Spain, for example, the titles of final degree projects include topics such as: 1) "The role of mathematics in achieving sustainable development goals; 2) "The *soft law* nature of the climate change regime: Special reference to the Paris Agreement"; 3) "Gender equality from an international perspective of the Sustainable Development Goals"; 4) "Peace, justice and strong institutions: goal 16 of the 2030 Agenda"; 5) "Refuge and the right to asylum: the case of migrant women"; 6) "Refugee protection in international law"; 7) "From the Commission on Human Rights to the Human Rights Council".

[6] Benjamin *Authers, Human rights, interdisciplinarity and the time of utopia,* in Australian Journal of Human Rights, Volume 22, 2016 - Issue 2, pp. 1-15; Floya Anthias, *Thinking Through the Lens of Translocational Positionality: An Intersectionality Frame for Understanding Identity and Belonging*, Translocations: Migration and Social Change, 2008.

[7] Patricia Hynes, Michele Lamb, Damien Short & Matthew Waites, *Sociology and human rights: confrontations, evasions and new engagements,* The International Journal of Human Rights, 14:6, 2010, pp. 811-832, DOI: 10.1080/13642987.2010.512125. See generally, David P. Forsythe, Human Rights in International Relations, ed. Cambridge: Cambridge University Press, 2012 and Kretzmer, D., *The Occupation of Justice: The Supreme Court of Israel and the Occupied Territories. Albany,* ed. NY: SUNY Press, 2012.

can be deduced from Article 8 of the Transdisciplinarity Charter of 1994: "The dignity of the human being is both planetary and cosmic. The emergence of the human being on earth is one of the stages in the history of the Universe. The recognition of the Earth as the homeland of all human beings is one of the imperatives of transdisciplinarity. Every human being has the right to a nationality, but living on Earth is also a transnational being. The recognition by international law of this double belonging - to a nation and to the Earth - is one of the aims of transdisciplinary research". Human rights could thus enjoy inalienability, and therefore better protection, including from a political point of view[8]. These are a few perspectives of the transdisciplinary method.

Alongside the above doctrinal examples are studies on children's rights and citizenship that have *re-theorised* children's citizenship through transdisciplinarity from the local to the global[9]. Key thematic issues in children's rights are considered to lie at the intersection of global and local concerns and relate to: law, social work, sociology of childhood and anthropology; economics, geography, early childhood education, gender studies and citizenship studies; participation, education and health; juvenile justice and alternative care; violence against children; forced labour and child poverty; or migration, indigenous children and resource exploitation. Some papers have studied these categories of rights in the context of formal alternative care, taking into account the full range of instruments on children's rights to formal alternative care and the principles of necessity and appropriateness with which placements in formal alternative care settings must comply today[10]. The question of the universality of cosmopolitan citizenship which began with various debates such as patriotism *versus* cosmopolitanism. In this context I recall the increasingly propelled idea of a global, planetary citizenship. According to it, true cosmopolitans see themselves primarily as 'citizens of the world', bound by their duty to recognise a common humanity and to act in accordance with the requirements of moral universalism. At the other extreme, those on the side of patriotism do not believe in the ideal of moral universalism. They see it as unattainable, "hopelessly lofty", and see no point in cosmopolitan aspiration. The glue seems to be community sentiment, group politics, a kind of local as a prerequisite for the global. Cosmopolitan citizenship refers to the idea that people should first identify themselves as citizens of the world, rather than identifying only with their nation of origin or their group of belonging. This idea is based on a worldview that transcends national boundaries and promotes a common concern for global issues and the well-being of all people. *Sustainable development, often expressed through the alternative concept of*

[8] Nicolescu, Basarab, *Manifesto of transdisciplinarity,* Suny Press, 2002, pp. 73 and 88.
[9] Cantwell, Nigel, *The human rights of children in the context of formal alternative care*, Routledge International Handbook of Children's Rights Studies, Routledge, 2015, pp. 257-275.
[10] Richard Mitchell, *Children's rights and citizenship studies. Re-theorising child citizenship through transdisciplinarity from the local to the global,* in Routledge International Handbook of Children's Rights Studies, 2015, pp. 164-183.

vivir bien within integral development, has differed in its radical alternative components and has sometimes been interpreted as a "break with the development and transcendence of modernity"[11]. In terms of the relationship between the legal theory of international law and cosmopolitan citizenship, it can be argued that international law is one way in which cosmopolitan citizenship can be achieved.

Cavallar does not intend to offer a comprehensive study of cosmopolitanism, but rather seeks to distinguish between its many faces commonly unified under a single guise, and he identifies four types: moral, natural law, political and cultural[12]. Historically, the classics of the law of nations Vitoria, Grotius and Vattel are moral universalists. The exposition can continue by exemplifying Grotius' universal right of freedom of the seas in relation to the commercial interests of the time. Cavallar constructs a dichotomy between nationalism, or patriotism, and cosmopolitanism, or universalism[13]. Koskenniemi stated, "A deeply structured cosmopolitanism holds that at its core, the world is already united. The problem is that the claimed deep-structural principles vary, are conflicting, and receive meaning and applicability only through formal decision-making structures. *Cosmopolis* must wait"[14]. The legal regime of the digital nomad can be a practical application of a special cosmopolitan citizenship. This type of citizenship could be increasingly integrated into the legal theory of international law, promoting the idea that all people are equal and have universal rights to be protected by international law.

The use of transdisciplinary educational methods has the potential to train future specialists by training them to be able to research with logical reasoning and critical thinking, applying legal, jurisprudential and doctrinal sources to the legal dilemmas of a changing society. Graduates will be able to design public policy and understand the management of private entities. These education methods generally promote a global citizenship, committed to multiculturalism, a common language, sustainable development, resource efficiency, solidarity, equity, justice and the defence of human rights[15]. In a word, there is the possibility of a transdisciplinary global citizenship at least at a highly specialised level.

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[11] Gudynas, Eduardo, *Development alternatives in Bolivia: the impulse, the resistance, and the restoration*, NACLA Report on the Americas, 46 (1), 22-26, 2013, doi:10.1080/10714839.2013.11722007.
[12] Georg Cavallar, *Kant's Embedded Cosmopolitanism. History, Philosophy and Education for World Citizens*, Volume 183 in the series Kantstudien-Ergänzungshefte, Berlin, Munich, Boston: De Gruyter, 2015. https://doi.org/10.1515/9783110429404.
[13] Theodore Christov, *Imperfect Cosmopolis: Studies in the History of International Legal Theory and Cosmopolitan Ideas,* The European Legacy, 20:7, 2015, pp. 784-785, DOI: 10.1080/10848770.2015.1065605.
[14] Martti Koskenneimi, *The Gentle Civilizer of Nations, The Rise and Fall of International Law, 1870-1960,* Cambridge University Press, 2001, pp. 47-54; Martti Koskenniemi*, Legal Cosmopolitanism, Tom Franck's Messianic World*, 35 New York University Journal of International Law and Politics, 2003, p. 476.
[15] Alicia Chicharro, Maria Jesús Campión, *What do Law and Mathematics have in common? The Sustainable Development Goals as a Transversal Substrate of Numbers and Laws,* Universidad Pública de Navarra, Ceur Workshop Proceedings, 2022, 3129, 1-5.

In addition to these issues, there are several links between mathematics and international law, links that have been little addressed so far[16]. For example, international conventions are typically drafted in complex legal language, and sometimes expressed in precise mathematical terms. In these cases, mathematics can be used to interpret and analyse legal texts and to determine their clarity and coherence.

Through game theory as a branch of mathematics that deals with the study of strategic decisions made in a context of social interaction, we can analyse the behaviour of states in international negotiations to better understand the decisions they make and to predict the outcomes of these decisions. International economics, e.g. is closely related to both international law and mathematics, through the study of international trade relations, capital flows and other economic or technological issues that can be regulated by treaties. Knowledge of international economics can be useful in understanding the effects that different trade or investment policies can have on countries or regions[17]. These developments have led to particular developments, especially in international investments[18]. Legal calculation also has a role to play in that here mathematics can be used to assess the legal consequences of certain facts or situations: mathematics can be used to calculate the damages resulting from an accident, to determine the value of a contract, or to calculate the probability of a certain event occurring, which can be of considerable value when analysing risks and making decisions in international law.

In terms of theory, mathematics can be used to develop mathematical models that describe the relationships between different variables and factors in international law, as is the case when mathematics develops economic models that describe the impact of a trade treaty on national

[16] We just do a brief review of some as well: 1) international commercial litigation cases where mathematics calculates financial losses and assesses damages; 2) determining the value of an investment and the rate of return; 3) for the delimitation and use of international waters, mathematics calculates the quantities of water available and determines its distribution between different states; 4) in cases of pollution or natural resource management to assess the impact of human activities on the environment and to develop mathematical models to identify environmental solutions; 5) in the analysis and interpretation of statistical data on human rights violations in a particular region or country; or 6) in mathematical modelling of judicial processes to identify problems in the judicial system and to improve its efficiency and effectiveness.

[17] „When the evolution of international investment law is carried out, the politicalsocio-economic framework causing the unrest that this legal system, as an organized structure, should regulate, determines its development only if the major changes configured by a reform (or revolution) trigger even the change in the form of the investment legal system itself." See Cristina Elena Popa Tache, *Ranking of Treatment Standards in International Investments*, in „International Investment Law Journal", Volume 1, Issue 1, February 2021, pp. 84, 85.

[18] Laura Magdalena Trocan, *The Interest of the European Union in the Exploration and Exploitation of the Blue Continent'* Resources, „International Investment Law Journal", Volume 3, Issue 1, February 2023, p. 18; and Cristina Elena Popa Tache, *Individualization and development of international investment law as the third millennium law field*, "Juridical Tribune - Tribuna Juridică", Volume 9, Issue 3, December 2019, pp. 585. The article marks the observation that: "We must admit that economic integration is the moving force behind a considerable part of today's public international law, since the traditional concepts of this law were used to create legal structures that represent instruments of economic integration and market relation regulation".

economies or models that describe the evolution of international relations over time.

As well as being able to calculate damages in cases of violations of international rights, it can assess the impact of international decisions such as border disputes or issues related to the use of shared natural resources. Mathematical methods develop legal theories and concepts in international law such as the "intersection of sovereignty" or the "intersection of interests", which are used to manage legal problems in international relations. Algorithms to identify violations of international rights can detect and prevent this phenomenon[19] . Also through algorithms it is possible to trace the lines of behaviour of a robot, more precisely, in the conditions of computer ethics, the artificial intelligence is programmed to respect the applicable law[20].

3. Modern features of international law

Tracing the historical developments, we can observe a clear feature of international law: the shift of this field from its isolation to today's universality, from state-centric to cosmopolitan. Some authors consider that international law became universal when jurists from semi-peripheral polities, such as Japan, the Ottoman Empire and Latin American states, appropriated legal thinking from the European international[21]. We are witnessing the emergence of international law from anonymity to universality, amidst increasing interconnections between the subjects of this law[22]. This universality is in fact the direction towards the *trans* destination, and represents a natural relevant evolution given by the society in transition. It can be said that transdisciplinarity and universality support each other in the fate of international law.

[19] Regarding the intersection of sovereignty, through mathematics we can develop various scenarios on territorial sovereignty and state power: we determine the most effective strategy to defend a country's borders or calculate the impact of a military intervention in a disputed area. At the intersection of interests, mathematics analyses and even models the interactions between the different interests of states. More specifically, it determines the economic effect of a trade treaty between two states or determines the impact of climate change on the natural resources and geopolitical interests of different states. Appropriate policies that take these possibilities into account can reduce the risk of conflicts between states.

[20] „(...)the use of artificial intelligence required time for action and consequences, components necessary to carry out pertinent analysis to justify legislative interventions.": see Ruxandra Andreea Lăpădat, *Digital Constitutionalism – A Perspective Over the Increasing Role of The Private Actors in Securing the Exercise of Human Rights*, „Perspectives of Law and Public Administration", Volume 11, Issue 1, March 2022, p. 159. In other worlds: „Just as language is not created through an effort of reflection, but through a rational effort, so also law is born, not through the thinking effort of legislators, but through a spontaneous growth.": Paul-Iulian Nedelcu, *The Kantian, Neo-Kantian, Hegelian and Historical School Regarding the Rule of Law,* „Perspectives of Law and Public Administration", Volume 12, Issue 1, March 2023, p. 85.

[21] See for details Arnulf Becker Lorca*, Universal International Law: Nineteenth-Century Histories of Imposition and Appropriation*, 51 Harv. Int'l L.J. 475, 2010; and Ward, Christopher, *The Universal Language of International Law: History and Prospects,* in Chinese (Taiwan) Yearbook of International Law and Affairs. Leiden, The Netherlands: Brill | Nijhoff. 2020, pp.6-13, DOI: https://doi.org/10.1163/9789004443297_003.

[22] Charney, Jonathan I., *Universal International Law*, in The American Journal of International Law, vol. 87, no. 4, 1993, pp. 529-51. JSTOR, https://doi.org/10.2307/2203615.

Transdisciplinarity[23] implies a natural collaboration between experts from different fields to find the most appropriate solutions. As we have seen, in developing policy to combat climate change, international law specialists work with experts in the natural sciences and technology to develop new policies that respond to current situations. The concept of transdisciplinarity has the status of a research method[24] and is gaining increased attention in international law education as a means to provide the most comprehensive analysis because the transdisciplinary research method aims to reduce the division that narrows disciplines and integrate the perspectives of different disciplines to better understand the complexity of the whole system.

Transdisciplinarity has the potential to enrich and broaden the scope of international law education and research, allowing those interested to explore the links between the legal, political, economic, social and cultural aspects of international law[25]. By no means can the *trans* method approach be understood or used to write off particular branches of law, but its purpose is to actually highlight the strength and value of their regulatory function. Although, at first glance, the process of influence of one discipline by others can be seen as a loss of disciplinary autonomy, this argument does not seem solid in the face of the benefits of using transdisciplinarity as a very powerful tool, and not as the suffering of a discipline marked by its inability to maintain its autonomy. On the contrary, new skills can be absorbed and new developments found, which is an opportunity, far from being a disease of the disciplines. One possible direction would be that of reorganising the law because it is possible to 'sort out' certain sources, standards, principles and subjects of law that will follow other branch framings. Only by taking a very general view can we reach relevant conclusions. Any disciplinary isolation has so far failed to demonstrate that it can lead to any progress. Maintaining such a conception is a chimera, a chronophagy that already consumes time that could be used to develop new possibilities. Some proposals have already been launched in the doctrine that legal education should focus on the interconnections between international law and other disciplines such as international relations, political science, economics,

[23] In what follows, when I refer to transdisciplinarity, I will use the abbreviation "trans", which is used in most of the reference material.

[24] "If in the case of multidisciplinarity we speak of a "correlation" of the efforts and potentialities of the different disciplines in order to provide as complete a view as possible of the objective under investigation, interdisciplinarity implies an intersection of different disciplinary areas (...) Transdisciplinarity represents the highest degree of curriculum integration, often going as far as fusion. Fusion is therefore the most complex and radical phase of integration." Source is Cristina Stan, *Interdisciplinarity, transdisciplinarity and pluridisciplinarity within literature classes,* in Tribuna Învățământului of 05/10/2016, online, available here: https://tribunainvatamantului.ro/interdisciplinaritate-transdisciplinarity-and-pluridisciplinarity-within-literature-classes/, accessed 05.03.2023.

[25] Outi Korhonen, *Within and Beyond Interdisciplinarity in International Law and Human Rights*, European Journal of International Law, Volume 28, Issue 2, May 2017, Pages 625-648, https://doi.org/10.1093/ejil/chx040.

history, sociology and anthropology[26] .

Against the background of developments outside the specific sources and norms, a current of constructivism has emerged to evolve and disseminate international norms[27]. It complements harmoniously in our analysis with constructionism and we will see the general effective meanings so that the study can dress the basic form that I try to create for it through inter, many or transdisciplinary methods.

Some differentiations require some explanation. From a legal sociological point of view, we discuss constructionism as a new orientation that is mainly based on Gergen's works published after 1990, works that speak to us about how reality can be known and especially how realities can be constructed. There are various definitions of social constructionism, by its very nature, based on the recognition of the multiple realities generated by the various interactions between the actors who construct these realities, a method that can lead to certain developments that are essential today for international law, primarily through attempts to explain the evolution of international law. According to this theory, international law is not a static and fixed entity, but is socially constructed through the interaction between states and other international actors. It is *a learning* (knowledge) *theory* that stresses the importance of building knowledge and understanding through interaction between the individual and the surrounding world, particularly evident in human rights[28] (we can also extrapolate to the reality of entities such as international organisations or states), through experience and interaction with the surrounding world, which is relevant at the international level for all participants. In theory, this analysis is particularly useful to address the problem that international law lacks the 'vocabulary' to deal with the collective dimension and therefore perpetuates an individualistic vocabulary. A reframing of issues such as the conflict between self-determination and state integrity, or the effects and limits of state sovereignty in an increasingly globalised world[29] is welcome.

Returning to constructivism, certain tangents can also be created between the realities of legal subjects, following the dynamics of international law which can be explained by following

[26] Basarab Nicolescu, *Methodology of Transdisciplinarity*, World Futures, 70:3-4, 2014, pp. 186-199, DOI: 10.1080/02604027.2014.934631. In this article, Professor Nicolescu notes that: 'There is a real discontinuity between disciplinary boundaries: there is nothing, strictly nothing, between two disciplinary boundaries, if we insist on exploring this space between disciplines through old laws, norms, rules and practices. Radically new laws, norms, rules and practices are needed if we are to explore this space"; and: "We define disciplinary boundary as the totality of the results - past, present, and future - obtained by the laws, norms, rules, and practices of a given discipline."

[27] Dennis R. Schmidt and Luca Trenta, *Changes in the law of self-defence? Drones, imminence, and international norm dynamics,* Journal on the Use of Force and International Law, 5:2, 2018, pp. 201-245, DOI: 10.1080/20531702.2018.1496706.

[28] Francisco F. Martin, *The Constitution and Human Rights: The International Legal Constructionist Approach to Ensuring the Protection of Human Rights,* 1 FIU L. Rev. 71, pp. 71-87, 2006. DOI: https://dx.doi.org/10.25148/lawrev.1.1.9.

[29] See a comprehensive analysis in John R. Morss, *International Law as the Law of Collectives. Toward a Law of People*, ed. Routledge, 2013.

changes in the perception of the identity of states and other international actors and by the evolution of social norms and values. It is precisely for this reason that we have called for this exposition. In international law, this theory provides an exercise for a better understanding of the conduct of participants in terms of compliance or non-compliance with these rules. In this way, social norms and values become fundamental to the construction of the identity of international actors and thus to the orientation of their behaviour, and answers can be found to the question: what might be the reasons why some states respect international law while others violate it?

4. Contemporary study dynamics and applied axioms

In the following, I will present several levels of these possibilities. One of these is the implementation of notions of the different ways in which international law and these other fields interact and influence each other, and how these fields can be observed in order to examine and understand international law, into specialist education. In theory it has been suggested that trans methods of education and dynamics in international law should contain both elements from different cultures and legal traditions that exist around the world, and details of how international law interacts practically with these legal traditions. Last but not least, the analysis of different theoretical and practical aspects of international law, such as international human rights law, international criminal law and international economic law, was considered. All of these allow for a comprehensive understanding of the different *types/sub-strands* of international law, classical or hybrid[30] .

Metaphorically, different compositions are now used for law. Law is a medicine of society, it has often been said, or that international law is a political theology[31] . The associations between different disciplines that can form a whole-these dichotomies-underscore the fact that transdisciplinarity is the driving force behind the current dynamics of international law, a field that has increasingly embraced the *trans* method, relying on the link with a variety of disciplines used as evolutionary steppingstones. This has been particularly evident in the development of international human rights law, international environmental law, international humanitarian law and, last but not least, in the development of international communications law and new technologies.

[30] Christopher C. Joyner, *International Law in the 21st Century: Rules for Global Governance,* ed. Rowman & Littlefield Publishers, 4 Feb. 2005, pp. 311-335. See also Nicolescu, B., Transdisciplinarity - Past, present and future. in Moving world-views - Reshaping sciences, policies and practices for endogenous sustainable development, eds. B. Haverkort and C. Reijntjes, ed. Amsterdam, Holland: COMPAS Editions, 2006, pp. 142-166.
[31] M Koskenniemi, *International Law as Political Theology: How to Read Nomos der Erde*?, in 11 Constellations, 2004, pp. 492-511.

Professor Basarab Nicolescu has come to apply the following three axioms of transdisciplinarity methodology, which, if applied even to international law research, would lead to more concrete results: 1) the ontological axiom: there are, in Nature and in our knowledge of Nature, different levels of Object Reality and, correspondingly, different levels of Subject Reality; 2) the logical axiom: the transition from one level of Reality to another is ensured by the logic of the included third party; and 3) the epistemological axiom: the structure of the totality of the levels of Reality is a complex structure: each level is what it is because all levels exist at the same time[32] .

Abstracting for demonstrative purposes the relevant theory, I will begin the exercise by presenting the logic of the included third (or trivalent logic) as a formal system of logic whereby three truth values are admitted: true, false and indeterminate. This logic has been developed for situations where statements cannot be proven true or false with certainty. The apparent complexity of the exercise is ultimately useful in that, by materialising the establishment and use of formulas such as those to be presented, subjects of public international law will find solutions in a more rapid and objective way. How? In classical binary logic, each statement can be classified as true or false. In contrast, in the logic of the included third party, there is also a third, indeterminate truth value, which reflects situations where statements are ambiguous or incomplete. For example, the statement "there is peace in the world" may be true or false, depending on the exact perception of the subjects, but it may also be indeterminate if the state of peace is in the range between calm and unrest. In this framework, the logic of the included third party can be considered a fundamental tool in solving transdisciplinary problems that are characterized by ambiguity, uncertainty and complexity. By admitting a third truth value, the logic of the included third party can shape a more flexible framework of thinking and leads to the development of solutions that take into account a multitude of perspectives and variables.

The logic of the included third party can be received in international law in various ways, particularly in relation to international conflict resolution and treaty interpretation (for situations where the paths and interests at stake are different and cannot be reconciled through a binary approach based on true or false). By valuing a third, indeterminate truth value, the logic of the included third party has the potential to identify compromise solutions that take into account multiple perspectives and variables, as well as finding possibilities for avoiding conflict escalation[33]

[32] Nicolescu, B., *La transdisciplinarité manifeste,* Monaco: Rocher, 1996 (English translation: 2002, Manifesto of transdisciplinarity, New York: SUNY Press, translation from the French by K.-C. Voss). See also Piaget, J., *L'épistémologie des relations interdisciplinaires. in L'interdisci-plinarité - Problèmes d'enseignement et de recherche*, eds. G. Berger, A. Briggs, and G. Michaud, Paris: Organisation for Economic Cooperation and Development, 1972, pp. 127-139.

[33] For example, in the interpretation of international treaties and agreements, the logic of the included third party is useful in situations where their terms and clauses are ambiguous or incomplete and by admitting a third, indeterminate

. More concretely, in international conflict resolution, the logic of the included third party can be used in mediation or arbitration to identify compromise solutions, why not? Continuing the series of examples, if two states are in a territorial conflict, the logic of the included third party can be operative in identifying solutions that take into account the interests and perspectives of both parties, such as the division of territory or the development of a regime of autonomy. It is interesting how the application of the logic of the included third party in international law overcomes the limitations of dualistic thinking. What are the steps to achieve this?

First, we identify the reasons, the problem or the conflict, then we move on to finding the interests and possibilities of the parties (of interest to experts, arbitrators or mediators). Then, through the logic of the included third party, we can discover and arrive at that compromise solution based on a series of solutions and variables, which can be implemented in the end, and then continue monitoring the results.

The ontological axiom that there are, in nature and in our knowledge of nature, different levels of object reality and, correspondingly, different levels of subject reality can be applied in public international law by understanding that international society is made up of a diversity of actors, with different interests, origins, perspectives and capacities, and that this diversity must be taken into account in the process of drafting and applying international law, by recognising the existence of several levels of object reality, such as: the physical level, the biological level, the social level, the cultural level, the economic level and the political level. Each level of reality can influence the way in which international problems, whether simple or complex, are perceived and dealt with, and can have a bearing on the way in which the rules and norms of international law are developed and applied. In terms of levels of subject reality, the use of this axiom can lead to the recognition that there are different levels of power and influence in what we call "international society", and these levels will be taken into account in the process of developing and applying international law because powerful states and international organisations may have a greater influence on the development and practice of international law than smaller states or civil groups, for example. By applying this axiom, certain differences between the subjects of international law can be highlighted, depending on their legal nature, their capacity to take part in the normative elaboration and application process. Another current difference is that states are considered to be the primary, classical subjects of international law, whereas international organisations, civil groups and other entities are considered to be secondary or special subjects. It follows that by putting this ontological

truth value, the interpretation of terms and clauses is made more flexible and rigid interpretations that may not reflect the intention of the parties are avoided.

axiom into practice, international law can become more flexible and adaptable to the diversity of existing interests and perspectives, which evolutionarily supports the development of a fairer and more effective system for resolving contemporary international challenges.

The logical axiom (moving from one level of Reality to another) can serve public international law by recognizing that there is a close connection between the different levels of object and subject reality, and that this connection can be understood and managed through the logic of the included third party. Although the embedded third party is full of mysteries especially in the field we are dealing with in this article, it can prove useful when we seek to understand and manage the interactions between the different levels of object and subject reality in international law. Applicably, when researching a specific issue, we are to consider not only its physical or political level, but also its social, cultural, economic and environmental levels.

In the rest of the paper, I will also present some aspects of these levels. The logic of the mysterious third party included can develop a more robust and equitable decision-making process by integrating several different perspectives into the whole mechanism of rulemaking and enforcement. When negotiating and drafting an international convention, the perspectives and interests of different international groups and actors will be taken into account in order to arrive at a solution that truly encompasses as many aspects of the subject matter of the codification as possible.

The epistemological axiom encompasses the complex structure of the totality of the levels of reality and each level is what it is because all levels exist at the same time. This axiom can find an effective role in public international law by recognising that the rules and norms of international law are constructed in the context of multiple levels of reality, which supports understanding and managing the interactions between the different levels of reality in the structure of international law issues. Issues of this kind are generally influenced by political, social, cultural, economic, environmental and security factors, and these levels of reality are obviously interconnected and influence each other[34] .

I will take this exercise further with a comparison. According to Basarab Nicolescu's model, the four levels of reality are: 1) the physical or empirical level perceptible by the senses and which can be studied by the scientific methods of physics, chemistry and biology; 2) the quantitative or mathematical level which concerns mathematical models and mathematical symbols, used in the exact sciences; 3) the mental or psychological level as the level of thought and

[34] E.g., on a general level, climate change and its regulation at international level we observe that they take into account not only the impact on the environment, but also on the economy, security and well-being of the population.

consciousness, which can be studied through psychology, philosophy and other humanities; and 4) the transmental or transpersonal level - is the transcendent level, which goes beyond the individual limits of consciousness and refers to the connection with a higher level of existence and knowledge.

What would the application of these levels of reality in public international law generally mean?

1) The physical or empirical level is where we are in the study of the effects of the physical actions of states or individuals on other states or persons (or entities). I have here the example of transboundary pollution which can be considered a complication of public international law whereby the physical or empirical level of pollution and its impact on the environment and the health of the population is brought into question.

2) The quantitative or mathematical level can be implemented by using mathematical models and mathematical symbols to analyse and understand public international law phenomena. A mathematical model can be used very well to predict the evolution of conflicts between states or to analyse the economic impact of sanctions imposed by one state against another.

3) The mental or psychological level is reached by studying thought and conscience in the context of public international law, where we are mainly concerned with the analysis of human rights and the responsibility of states to protect them, through the study of values, morals and ethics, and we will see these connections below.

4) The transmental or transpersonal level is when there is a recognition of a higher level of existence and knowledge that goes beyond the individual boundaries of consciousness and is based on ever-expanding, transpersonal connections. In this context I will cite the example of new attempts at codification in animal law, nature law or the law of the soul and bioenergy of life forms.

As specialists, if we take into account these four levels of reality, perhaps we could develop a more appropriate and comprehensive system of deepening, which would lead to one result: a well-deserved attempt to develop a system of international law that is more sensitive to the plurality and diversity of levels of reality it faces.

Of course, in these approaches we will also take into account some criticisms that can be made of transdisciplinary theories in their application to public international law. I refer first of all to the complexity sometimes considered excessive. This can be compounded by the difficulty of measurement, because it may seem that in trans theories it would be difficult to measure the results of their application in the field of public international law so as to assess their effectiveness. But is there another applicable theory that is not subject to this criticism? Further to the exposition of

possible criticisms, it could be that trans theories are often criticised for being accessible only to experts, which may make it difficult to apply them generally in the field of public international law. And, even if we overcome this set of possible criticisms, in the end there are problems of practical application which may be difficult because of institutional limitations and problems of cooperation between different organisations, states or other international actors.

5. Possibilities

Theoretically, it would be possible to create a mechanism for the application of transdisciplinary methods in public international law by bringing together key possibilities such as: the participation of an interdisciplinary group of experts; a transparent process of debate and decision-making; the use of technology and advanced analytical methods (such as mathematical models and simulations); or the monitoring and evaluation of policies and decisions so that adjustments can be made accordingly[35] .

In the future, we are likely to see greater use of technology and artificial intelligence, especially as formulating a public international law problem in mathematical terms requires a clear understanding of the relevant data, key variables, their relationships and the objectives and criteria for evaluation.

All this requires a paradigm shift away from a one-dimensional treatment and towards a multi-pronged and interconnected practical vision. The challenge is significant as it is tantamount to accepting changes in culture and mindsets among decision-makers and society at large.

Without going into the philosophical discourse, we will proceed to present the relevant connections. First of all, I would like to remind you that, besides the father of transdisciplinarity (as Basarab Nicolescu is known), the term "transdisciplinarity" has also been used by the Swiss researcher Jean Piaget and the French mathematician Jean-Marie Guyau. In their work, they proposed a method of knowledge that would go beyond the boundaries of the disciplines and allow the development of a universal and integrative perspective. Over time, the concept of transdisciplinarity has been developed and applied in a wide range of fields, including the social sciences, education, the arts and the natural sciences. Researchers and thinkers, including Stefan Lupasco, Basarab Nicolescu, Edgar Morin, Ervin László, Ilya Prigogine and Florent Pasquier, have contributed significantly to the development and popularisation of this concept. E. Wilson

[35] In practice, creating such a mechanism would be a significant challenge, but it could be possible through cooperation.

affirmed the unified theory of knowledge across disciplines - an Esperanto between physics, biology, social sciences and humanities. In fact, from the beginning, in the process of scientific knowledge, it is worth noting the success of several scientists' attempts to bring together certain different concepts for comparative analysis, as we found in the works of the scientist Constantin Rădulescu Motru, who went further after trying to base certain opinions on different sciences such as biology, philosophy, history in particular, psychology, the arts, etc. and subjected some theories to analysis by connecting the cosmic environment, the soul environment with the natural environment, opposing the soul world to the material one[36]. E.O Wilson's book, *Consilience,* was also a revelation in the same sense[37]. This *jump toghether* of specialists from different fields but also of substantially different notions can provide unified theories particularly useful for scientific research.

Public international law is undoubtedly complex, highly interdependent and constantly evolving. Through these variations of contemporary reality, we see how transdisciplinarity has become an indispensable tool even for "conservative" international law[38].

This set of *trans* rules is often referred to as "interdisciplinary" and is used to gain a richer understanding of legal issues[39]. We will note that transdisciplinarity in law has been used in a variety of contexts, from the study of animal rights to the regulation of financial services. Following the line of identifying examples, we can mention animal rights, a framework in which ethical issues are considered but also the perspectives of biologists or activists. The *trans* method provides the necessary basis for a more comprehensive study and suggests that it can be used to create more effective and just solutions, including when moving from legal phenomenon to legal norm[40].

As such, public international law has a greater potential to benefit from transdisciplinarity. By using these methods, public international law can gain insight into the interconnectedness of states, international organisations and other actors in international legal relations, identifying common themes and causes.

What we call "transdisciplinary approaches" we find to be beneficial because they blur

[36] See C.R. Motru, *Personalism in Energy and Other Writings*, published successively from 1927 until 1984, when it was republished by Eminescu, pp. 267, 271.
[37] Edward Osborne Wilson, *Consilience: The Unity of Knowledge*, Random House (1998), in which he explores the chemistry of the mind and the genetic basis of culture or postulates the biological principles underlying works of art, from cave drawings to Lolita, apud Cristina Elena Popa Tache, *Vers un droit de l'âme et des bioénergies du vivant*, Ed. L Harmattan, Collection: Logiques Juridiques, 2022.
[38] A. Orford and F. Hoffmann (eds*), The Oxford Handbook of the Theory of International Law*, Ed. OUP, 2016, p. 954.
[39] Sometimes methods of this kind are called bi-disciplinary. See Moshe Hirsch, *Invitation to the Sociology of International Law*, ed. Oxford University Press, 2015, pp. 13, 126 and 185.
[40] Webb, Julian, *When 'Law and Sociology' is not Enough: Transdisciplinarity and the Problem of Complexity*, in Michael Freeman (ed.), Law and Sociology (Oxford, 2006; online edn, Oxford Academic, 22 Mar. 2012), https://doi.org/10.1093/acprof:oso/978019928 2548.003.0006, accessed 04.03.2023.

traditional disciplinary boundaries, promote dialogue and collaboration between diverse actors, and provide answers to difficult and contested tensions. These methods can be used to bridge the gap between theory and real-world application of these legal norms. In this way, new paths can be found to better solutions for eradicating violations of international human rights law, such as the right to a fair trial, the right to health care and the right to education. *Trans* is used to develop more effective legal strategies and to identify new opportunities for international cooperation. So sensitive has public international law become to trans and multidisciplinarity that the idea of linking music and international law has emerged, as evidence that not only so-called "hard" issues (global security, global warming, poverty, reforms of international institutions, architecture of global governance, etc.) are relevant to this field, but also some analyses that can contribute to solving these problems. For example, music, in its expressive and aesthetic manifestations, could serve as an effective tool for rethinking the pedagogical process of international law in Africa and beyond (used as a mechanism for communication and for interpreting existential problems, including in Romanian folklore or that of other countries)[41] .

These points demonstrate once again that any obtuse, rigid or unimaginative approach to international law jeopardises its very development.

Because international law is said to have two parts: a technical and a romantic one, we can identify the following "technical" stages of transdisciplinary or multidisciplinary development: 1) problem identification is the stage in which a problem or research question is identified that requires transdisciplinary or multidisciplinary analysis in relation to a research topic, social problem or practical need; 2) a multidisciplinary team is formed of specialists from different disciplines relevant to the identified topic, who must have expertise in different fields and be able to work together; 3) in the planning and organisational stage, the team sets objectives, identifies necessary resources, plans methodology and determines individual responsibilities; 4) the next stage is to collect relevant data and information using methods from different disciplines, such as field research, data analysis, literature review and other data collection activities; 5) the analysis and interpretation of the collected data involves statistical analysis, qualitative analysis and other data analysis methods; 6) synthesising the results and developing solutions or recommendations, which may be useful for policy makers, practitioners or researchers in the field; and 7) disseminating the results and solutions developed, through publications, presentations at conferences, workshops or

[41] Babatunde Fagbayibo, *Choral intervention: reimagining international law pedagogy in Africa through music*, The Law Teacher, 2022, DOI: 10.1080/03069400.2022.2094143; Fareda Banda, *African Migration, Human Rights and Literature*, ed. Hart Publishing 2020; and Gerry Simpson, *The Sentimental Life of International Law*, 3 London Review of International Law 3, 5., 2015.

other means of communication. Through this mechanism, practices and policies in a given sector are improved and further research development is stimulated[42].

6. Closing thoughts

Starting with somewhat *softer* situations, and ending with the hard problems generated by conflicts, we have highlighted some relevant issues throughout this study. Socio-ecological inclusion and studies in favour of access to water, sanitation and hygiene for the poor, have been given increased prominence in the humanitarian law literature on these disaster situations which may be amplified by other issues such as the legal status of refugees and displaced persons[43] . If we look at the map of aliens law, we note, as Danièle Lochak has noted, that it "has experienced „transdisciplinary migrations", being successively claimed by - or attached to - different disciplines".

The possibility of replacing certain organs or parts of the human body with certain categories of prostheses, including robotic, artificially or biologically created ones, together with new technologies, the problems of climate change and sustainable development have become increasingly evident in recent years, and international law is faced with the challenge of adapting to these changes.

However, in the face of these realities, climate change is more difficult in the face of symbolic peacemaking strategies, where rights-based approaches need to be combined with other policy instruments[44] . The salient issue of peacebuilding transcends disciplinary boundaries and generates new ways of thinking, as it values the identification of creative and sustainable solutions in the service of peacebuilding[45]. Major transformations facing the world today, such as climate change, terrorism and cyber security, require international cooperation and coordination. Another dynamic of international law in contemporary society is the proliferation of international agreements and other legal instruments. This proliferation reflects the growing recognition of the

[42] Tomáš Peráček, *A few remarks on the (im)perfection of the term securities: a theoretical study,* „Juridical Tribune - Tribuna Juridica", Volume 11, Issue 2, June 2021, pp. 135-146.
[43] Danièle Lochak, *Transdisciplinary migrations in the law of aliens. What causes? Quels enjeux ?,* S. Barbou des Places and F. Audren, Qu'est-ce qu'une discipline juridique ?, LGDJ, pp.279-294, 2018, 978-2-275-04672-3. ffhal-02114280e : "(...) It is thus today primarily from the angle of international protection of human rights or refugee law that international law raises the question of the rights of foreigners - with this paradoxical effect that at the very moment when foreigners are seized by international law, the discipline seems to lose interest in the question."
[44] Gupta, Joyeeta, and Nicky Pouw, *Towards a trans-disciplinary conceptualization of inclusive development*, Current opinion in environmental sustainability 24, 2017, pp. 96-103. For a more detailed analysis, see also Obani P. , *Humanitarian Action and Inclusive Development*, COSUST 2017.
[45] Lappin, Richard, *Peacebuilding and the Promise of Transdisciplinarity*, in International Journal on World Peace, 2009, pp. 69-76.

importance of international law in regulating the behaviour of states and other actors in the international system. Even so, the effectiveness of these agreements and instruments depends on their implementation, which is often weak or ineffective. Often, for these reasons, there has been a certain blocking or inhibition of the very universality of international law, a kind of special constraint. At present, our perception of international law may be far removed from the use of trans methods, but time may well be on its side. The role of international courts and tribunals is precious in modern society. These institutions, for all their work, are leaders in resolving disputes between states and other actors, and in interpreting and applying international law, but their authority is limited by the willingness of states to submit to their jurisdiction and implement their decisions. Looking ahead, the future of public international law will depend on a number of factors, including the evolution of the international system, the emergence of new situations and actors, and the effectiveness of existing institutions and legal instruments. As the world becomes increasingly interconnected, there is likely to be pressure from the growing demand for effective international rules and institutions, a landscape in which the effectiveness of international law will depend on the willingness of states and other actors to cooperate and to abide by its modern rules and principles, which would preferably be perfectly adapted and enforceable.

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