Session Report

1 Identification

1.1 Session ID

100311

1.2 Session Title

Neurorights: addressing the global opportunities and challenges of neurotechnology from a human rights lens

1.3 Session Date and Time

September 10, 2024

11:00am EST

1.4 Convenor name

José M. Muñoz

2 Speakers and Panellists

2.1 Speaker 1

2.1.1 Name: *José M. Muñoz (Convenor)*

2.1.2 Organisation name: *Institute of Neurotechnology and Law (INL) | International Center for Neuroscience and Ethics (CINET)*

2.1.3 Type of organisation: *Research center*

2.1.4 Title of the presentation: *Neurotechnologies speak to the need to reconceptualize fundamental and human rights*

2.1.5 Summary of the presentation (max 200 words): *Neurorights can be developed as reconceptualizations or expansions of existing rights. This approach has been followed, for example, in two important initiatives in the US (in the states of Colorado and California) leading to the update of their privacy acts to include the protection of brain data. Another right that is still very unexplored and that may be subject to eventual reconceptualization is freedom of thought. As can be verified in Article 18 of the Universal Declaration of Human Rights and in international human rights treaties (e.g., Article 13 of the American convention15 and Article 9 of the European convention16), this right focuses on protecting the external manifestations of thought, such as conveying one's beliefs or changing one's religion. A reasonable path for reconceptualization would be to explicitly include also its internalizations (that is, thought itself) considering potential misuses of neurotechnologies. This protection of the internal dimension of thought has often been called cognitive liberty. In relation to this, remedies aimed at enforcing the rights related to mental self-determination can be designed. In this presentation, I suggest incorporating a new habeas writ called "habeas cogitationem", aimed at enforcing neurorights against direct, harmful interferences in a person's thought.*

2.2 Speaker 2

2.2.1 Name: *Rafael Yuste*

2.2.2 Organisation name: *Columbia University | NeuroRights Foundation*

2.2.3 Type of organisation: *Academic institution | NGO*

2.2.4 Title of the presentation: *NeuroRights: human rights guidelines for neurotechnology*

2.2.5 Summary of the presentation (max 200 words): *The development of Neurotechnology, defined as "invasive or non-invasive methods to record or alter brain activity", is poised to have a transformative effect in science, medicine and society. At the same time, neurotechnology, particularly when combined with AI, could have profound ethical and societal consequences. In my talk I will review the proposal made by the Morningside Group of experts in 2017 to introduce a human rights-based guidelines for the protection of brain activity and data (Yuste, R., Goering, S. and the Morningside Alliance Group (2017). Four ethical priorities for neurotechnologies and artificial intelligence. Nature 551, 159–163; 2017). These rights ("NeuroRights) protect mental privacy, personal identity and agency, and guarantee fair access to cognitive augmentation and protection from algorithmic biases. To help implement these rights, we also propose a medical model (Yuste, R. (2023). Advocating for neurodata privacy and neurotechnology regulation. Nat. Protocols. https://doi.org/10.1038/s41596-023-00873-0), treating all neurotechnology as medical devices and applying regulatory mechanisms similar to those already implemented to regulate the medical industry. Finally, I will briefly discuss our successful advocacy efforts for NeuroRights worldwide, including Chile's and Rio Grande´s NeuroRights constitutional amendments, Colorado´s and California Neurodata bills and ongoing efforts in Spain as well as the United Nations (Yuste R, Genser J and Herrmann S. It's time for Neuro-Rights. Horizons. (2021)18:154-64).*

2.3 Speaker 3

2.3.1 Name: *Carme Artigas*

2.3.2 Organisation name: *AI Advisory Board of the UN Secretary General's Envoy on Technology*

2.3.3 Type of organisation: *United Nations*

2.3.4 Title of the presentation: *Neurotechnologies: the need for a global governance*

2.3.5 Summary of the presentation (max 200 words): *The presentation will show the current international and national efforts around neurotechnologies regulations, as well as within the UN system, in particular by UNESCO. It will also highlight the challenges and Future Directions to create an actionable international governance, in line with the future recommendations of the UN AI Advisory Body that will be presented in the Summit of The Future in NYC UNGA79.*

2.4 Speaker 4

2.4.1 Name: *Eric García-López*

2.4.2 Organisation name: *Instituto Nacional de Ciencias Penales (INACIPE)*

2.4.3 Type of organisation: Research center

2.4.4 Title of the presentation: *Neurovictimology, neurotechnologies and Complex-PTSD*

2.4.5 Summary of the presentation (max 200 words): *The advancement of neurotechnologies can be of great benefit to the development of humanity. For example, in the area of caring for victims of crime and human rights violations. To cite just one example, new therapeutic treatments could be implemented in cases of stress-related disorders (PTSD and Complex-PTSD), which are often observed in victims of torture, slavery, genocide campaigns, prolonged domestic violence, repeated childhood sexual or physical abuse, prolonged domestic violence, etc. However, even the most well-intentioned therapeutic treatments for these victims could pose risks that we must avoid, particularly in order to protect the human dignity, psychic continuity and identity of a person who has been the victim of crime and/or human rights violations. Neurorights should include among its priorities the impact that neurotechnologies can have in these cases. This would give rise to a new specialized field in which the advances of neuroscience applied to victimology are analyzed.*

2.5 Speaker 5

2.5.1 Name: *Jared Genser*

2.5.2 Organisation name: *NeuroRights Foundation*

2.5.3 Type of organisation: *NGO*

2.5.4 Title of the presentation: *Neurorights as understood by the NeuroRights Foundation*

2.5.5 Summary of the presentation (max 200 words): *This presentation highlights some of the most important legal initiatives sponsored by the Neurorights Foundation around the world and calls for action regarding the need of a global governance for neurotechnologies.*

2.6 Speaker 6

2.6.1 Name: *Allan McCay*

2.6.2 Organisation name: *Institute of Neurotechnology and Law (INL) | University of Sydney*

2.6.3 Type of organisation: *Research center | Academic institution*

2.6.4 Title of the presentation: *How might Australia's response to the human rights implications of neurotechnology develop?*

2.6.5 Summary of the presentation (max 200 words): *Australia is an important contributor to advances in neurotechnology having given birth to a number of companies that are globally significant. A consideration of the human rights implications of this emerging technology is also underway in the country, and an important step took place this year with the Australian Human Rights Commission producing a background report on neurotechnology. However, Australia is a federation and there are some features of Australia's constitutional arrangements that mean that although it is not entirely out of the question that novel neurorights could be created, any human rights responses to neurotechnology might be more feasible in the form of a piecemeal set of changes to legislation in a variety of areas of law. Of course, any possible legislative responses will be contingent on political will, but using a hypothetical example from criminal law, as an example, I will explain how legislative change aimed at protecting human rights could take place in relation to criminal justice. The focus on Australia may be instructive as it underscores how human rights responses to neurotechnology might be affected by the specifics of different legal systems.*

2.7 Speaker 7

2.7.1 Name: *Cathy Kipp*

2.7.2 Organisation name: *Colorado General Assembly*

2.7.3 Type of organisation: Government

2.7.4 Title of the presentation: *How neurorights protections became law in Colorado*

2.7.5 Summary of the presentation (max 200 words): *This presentation is the story of how the state of Colorado passed the first Neuro Rights privacy protections into law in the United States. Follow my journey from learning about the concept of Neuro Rights to navigating this idea into a bill as it went through the political process. This presentation will give you the inside scoop on how an idea can get transformed into a law.*

2.8 Speaker 8

2.8.1 Name: *Arleen Salles*

2.8.2 Organisation name: *Institute of Neuroethics*

2.8.3 Type of organisation: *Research center*

2.8.4 Title of the presentation: *Responsible neurotechnology: the role of framing and language*

2.8.5 Summary of the presentation (max 200 words): *In this presentation, I focus on the importance of framing and conceptual clarity in discussions about neurotechnology, emphasizing the need for greater attention to these elements when addressing ethical issues and shaping governance strategies. I argue that the way neurotechnology and its ethical challenges are discussed and framed significantly influences public and practitioners' perceptions, shaping which concerns are prioritized and how solutions are approached. I call for a broader dialogue on frames and language, advocating for responsible conceptualization to enhance ethical and governance debates.*

2.9 Speaker 9

2.9.1 Name: *Alejandra Lagunes*

2.9.2 Organisation name: *Senate of Mexico*

2.9.3 Type of organisation: *Government*

2.9.4 Title of the presentation: *Neurotechnology regulation and safeguarding human dignity: exploring Mexico's pioneering neurorights legislation*

2.9.5 Summary of the presentation (max 200 words): *In this presentation, I will discuss Mexico's groundbreaking General Law on Neurorights and Neurotechnologies, developed as part of the work led by the National AI Alliance (ANIA). ANIA is a pioneering initiative created through a multisectoral, multidisciplinary, and multi-stakeholder collaboration, reflecting a unique governance model that aligns with the innovative spirit of this legislation. The law focuses on safeguarding human dignity and mental integrity in the face of rapidly advancing neurotechnological innovations. It introduces a comprehensive legal framework that addresses ethical, medical, and legal challenges related to the use of neurotechnology. Key elements of the law include the creation of a Neuroethics and Neurolaw Commission, which will oversee the responsible development and application of these technologies. The legislation emphasizes cybersecurity, ensuring neural data protection and privacy, and mandates the training of healthcare professionals and ethics committees to uphold high standards in clinical care and research. Additionally, the law addresses the potential impact of neurotechnologies beyond healthcare, including non-therapeutic uses such as cognitive enhancement, sports doping, and law enforcement. It also aligns with international humanitarian laws to prevent the misuse of neurotechnologies in military applications. By pioneering this legislation, Mexico sets an international precedent and opens the door for global collaboration in the responsible development of neurotechnologies while ensuring the protection of fundamental human rights.*

3 Content

3.1 Session Abstract

The advancement of neurotechnologies is generating a number of application and investment opportunities that include but go beyond the medical realm, reaching entertainment, marketing, and even criminal justice and military purposes. Moreover, there is a growing trend toward the convergence of neurotechnologies with AI, as evidenced by tools such as brain-computer interfaces and digital phenotyping. All these opportunities are leading to a flourishing global neurotechnology market in which brain data sharing plays a key role. Along with these opportunities, challenges arise related to the potential misuse of neurotechnologies, which can put at risk fundamental freedoms and human rights such as privacy, autonomy, integrity, freedom of thought, equality of opportunity, and non-discrimination.

In this context, proposals have emerged in recent years to review the current framework of human rights instruments to address the potential risks of neurotechnologies. There is an

ongoing debate about whether these "neurorights" should take the form of new rights or whether they should be implemented as reconceptualizations of pre-existing rights.

Neurorights proposals are being seriously considered in various parts of the world, and several countries are implementing them into their national regulations. Some of these countries are Chile (the first to do so), Argentina, Brazil, Mexico, and Uruguay, which demonstrates the leadership of economies from the Global South in the regulation of emerging technologies. Countries in the Global North, such as Australia, Spain, and the United States (in the state of Colorado), have also taken steps to protect neurorights or at least have begun inquiry into whether such protection is needed. At the same time, organizations such as the Organization of American States and the Latin American Parliament have issued regional declarations on the challenges of neurotechnology from a human rights lens.

Finally, the United Nations is currently discussing this issue, as shown by Human Rights Council resolution 51/3 aimed at preparing a study on the impact, opportunities, and challenges of neurotechnology, as well as the ongoing work by UNESCO to draft a document of recommendations on the ethics of neurotechnology.

By bringing together international experts on the topic and policymakers from nations and organizations where neurorights have already been implemented or are starting to reflect on their convenience, this two-hour session will focus on this interdisciplinary global issue at the intersection of the natural and social sciences.

3.2 Project Objectives

3.2.1 Objective 1: To identify what emerging issues and challenges neurotechnology brings to human rights

3.2.2 Objective 2: To provide recommendations on venues for regulating and promoting a responsible development and use of neurotechnologies that allows for global scientific collaboration across nations and regions

3.3 Key Themes

- AI
- Policy, Democracy & New Governance
- Neurotechnology

4 Planned Impacts of the Science and Innovation Presented in Your Session

4.1 Contribution to the SDGs

9. **Industry, Innovation, and Infrastructure**: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

16. **Peace, Justice, and Strong Institutions**: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.

17. **Partnerships for the Goals**: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

5 Contribution to the UN Summit of the Future

5.1 Main challenges (max 200 words)

This session seeks to address important challenges in the implementation of three specific SDGs (see more details in *Section 5.4. Impact on the 2030 Agenda*):

- SDG #9. **Industry, Innovation, and Infrastructure**: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

Challenge: Innovation in the global neurotechnology industry suffers from two major inequalities: (1) neurotech companies are concentrated in the Global North, while developing countries could become mere consumers of this technology; and (2) citizens with fewer economic resources cannot afford novel neurotechnologies, which can exacerbate existing social inequalities.

- SDG #16. **Peace, Justice, and Strong Institutions**: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.

Challenge: The use of neurotechnologies in the justice system (for example, through brain imaging) is becoming frequent in many countries, challenging fundamental rights such as data privacy and the right not to self-incriminate.

- SDG #17. **Partnerships for the Goals**: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Challenge: The regulation of neurotechnologies requires strong international cooperation networks and globally applicable standards, which have not yet been developed.

5.2 Additional goals

- To share experiences, lessons, and pitfalls related to how neurorights are being implemented in national and regional policymaking initiatives, or how they might be
- To examine how neurorights regulations at these levels may inform global debates on the human rights implications of neurotechnology

5.3 Integration: economic, social and environmental

From an *economic* perspective, it is essential to ensure that wealth differences within societies, as well as between countries, do not become an obstacle to citizens' access to

fundamental services provided through neurotechnologies. *Equitable access* to these technologies is the key aspect.

From a *social* perspective, in addition to equitable access, it is essential to establish all the necessary mechanisms to prevent racial, ideological, gender and sexual orientation, age, and other biases from permeating the development and use of neurotechnologies. The key aspect here is *non-discrimination*.

From an *environmental* perspective, there is established work aimed at investigating the impact of AI. It will be necessary to explore how neurotechnology, which converges with AI in the use of several devices such as brain-computer interfaces, influences the environmental impact of AI.

5.4 Impact on the 2030 Agenda (max 1000 words)

Global investment in neurotechnologies (i.e., those employed to study and/or manipulate brain activity) has experienced tremendous growth in recent years. In 2023, the size of this market was $15 billion, and it is projected to reach $55 billion by 2033. Investment opportunities go far beyond the application of neurotechnologies for medical and clinical purposes. Various neurotechnological devices are being developed and used for individual consumer purposes such as regulation of emotions and stress, meditation, control of sleeping habits, road safety, and neuromarketing, among others.

As mentioned in *Section 5.1. Main challenges*, the intersectoral discussion on the implications of neurotechnologies for human rights, fostered through our session, seeks to **address important challenges** that have arisen in recent years in the implementation of SDGs 9, 16, and17. Now, this section will describe **how our session represents an important step toward** addressing these challenges in accordance with the **principles of the 2030 Agenda**:

SDG #9. Industry, Innovation, and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

Challenge:

Research and innovation in the global neurotechnology industry suffers from major inequalities in two important aspects: (1) the main neurotech companies are concentrated in the US (especially in Silicon Valley), Europe, and other countries in the Global North, while countries in the Global South run the risk of becoming mere consumers of this technology, subject to the economic power of the former; and (2) citizens with fewer economic resources run the risk of not being able to afford neurotechnologies for domestic use and for improving cognitive capabilities, compared to wealthier citizens, which can exacerbate existing social inequalities.

How our session addresses this challenge:

Our session brings together experts, policymakers, and stakeholders from countries and regions from both the Global North and the Global South in a balanced and equitable manner. In doing so, the session fosters a debate on equal terms, without power imbalances, between different regional agents involved in the development and use of neurotechnology, in accordance with the **2030 Agenda Principle of Strengthening**

Developing Countries' Scientific, Technological, and Innovative Capacities, and addressing the following SDG #9 targets

- "Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries" (**Target 9.5**)

SDG #16. Peace, Justice, and Strong Institutions: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.

Challenge:

The use of neurotechnologies in the justice system (for example, through brain imaging) is becoming frequent in many countries, challenging fundamental rights such as data privacy and the right not to self-incriminate.

How our session addresses this challenge:

By including world-leading experts in criminal law and the justice system (i.e.: Dr. Allan McCay, Dr. Eric García-López, and Dr. Orias), our session integrates critical discussions about the promotion of inclusive societies and equitable access to neurotechnological applications in justice that respects the fundamental rights of victims, suspects, and inmates, according to the **2030 Agenda Principle of Non-Discrimination** and addressing the following SDG #16 targets:

- "Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements" (**Target 16.10**)

SDG #17. Partnerships for the Goals: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Challenge:

The regulation of neurotechnologies requires strong international cooperation networks and globally applicable standards, which have not yet been developed.

How our session addresses this challenge:

Our session promotes an intersectoral dialogue on the implications of neurotechnologies for human rights that involves academia, multi-level policymakers (national, regional, and global), and other relevant stakeholders coming from different parts of the world (i.e., the US, Mexico, Argentina, Spain, Australia). In doing so, our session provokes a constructive discussion on how neurorights can contribute to a more just, equitable, and inclusive world through international cooperation in the seek of global standards for the regulation of neurotechnologies, according to the **2030 Agenda Principle of Leaving No One Behind** and addressing the following SDG #17 targets:

- "Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation" (**Target 17.6**)
- "Enhance policy coherence for sustainable development" (**Target 17.14**)
- "Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources" (**Target 17.16**)

Last but certainly not least, in addressing the challenges described in this section, our project is extremely relevant to the following **Key SDG Transitions**:

(3) ***Digital connectivity***, by regulating the digital networks ecosystem involved in the development and use of neurotechnology,

(4) ***Education***, by raising awareness about the implications of neurotechnology for fundamental and human right, and

(5) ***Jobs and social protection***, by fostering discussion toward creating global standards aimed to protect minorities and vulnerable people form the social inequalities linked to the development and use of neurotechnology.

6 Conclusions

Provide a concluding summary on how science contributes to achieving the SDGs, incorporating policy recommendations.

Highlight any new or emerging issues identified during the session, suggest possible next steps or areas for further research and discussion, and outline the support needed to advance science and innovation in your field.

As a result of this session, the speakers have highlighted the need to:

(1) Develop **global governance** mechanisms for neurotechnologies.

(2) Become aware of the different **national initiatives** on neurorights (e.g., Chile, Mexico, USA) and learn from the achievements and pitfalls found in these initiatives to serve as a guide in the development of global mechanisms.

(3) Deepen the **conceptual debate** on frames and language, advocating for responsible conceptualization to enhance ethical and governance debates. This debate includes discussions on how to reconceptualize existing rights to adapt them to the new challenges that neurotechnologies pose for human rights.

(4) Develop **procedural mechanisms** to effectively enforce neurorights, with so-called *habeas cogitationem* (see https://doi.org/10.1007/s12152-024-09551-8) being a feasible theoretical apparatus to be further explored.

(5) Advance the study of the **forensic and criminal-law implications** of neurotechnologies and neurorights.

The support of the United Nations will be necessary to raise these issues in interdisciplinary, multi-stakeholder, and inclusive forums, for which the speakers and convenor of this session are kindly willing to contribute their expertise and extensive experience in the subject of neurorights.