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Alternative Modality for Landmark Decision of UN Convention on Biodiversity: Bounded Openness over Natural Information

By Joseph Henry Vogel

The Secretariat of the 1993 United Nations Convention on Biological Diversity [requested](#) Submissions of Views on “possible additional modalities for the fair and equitable sharing of benefits from the use of digital sequence information on genetic resources”. Bounded Openness over Natural Information is an alternative that could supplant the modalities of Decision 16/2 and achieve fairness, equity and efficiency.

Le Secrétariat de la Convention des Nations Unies sur la diversité biologique de 1993 a demandé la soumission d'avis sur « les modalités supplémentaires possibles pour le partage juste et équitable des avantages découlant de l'utilisation des informations sur les séquences numériques relatives aux ressources génétiques ». L'ouverture limitée des informations naturelles est une alternative qui pourrait remplacer les modalités de la décision 16/2 et garantir la justice, l'équité et l'efficacité.

La Secretaría del Convenio sobre la Diversidad Biológica de las Naciones Unidas de 1993 solicitó la presentación de opiniones sobre «posibles modalidades adicionales para la distribución justa y equitativa de los beneficios derivados del uso de la información sobre secuencias digitales de recursos genéticos». La apertura limitada de la información natural es una alternativa que podría sustituir a las modalidades de la Decisión 16/2 y lograr la justicia, la equidad y la eficiencia.

Introduction

Bounded Openness over Natural Information is the modality for “access to genetic resources” and “the fair and equitable sharing of benefits arising from utilization” (ABS) that best achieves a multilateral mechanism, as sought in [Decision 16/2](#). ABS is the third objective of the United Nations (UN) Convention on Biological Diversity (CBD) and has beleaguered all sixteen Conferences of the Parties (COP). Bounded Openness over Natural Information is not self-defining. In a 2016 Submission of View to the Secretariat of the CBD (SCBD), the environmental attorney Manuel Ruiz Muller and I tackled its first two words:

“[Bounded openness](#): Legal enclosures which default to, yet depart, from *res nullius* to the extent the departures enhance efficiency and equity, which must be balanced when in conflict.”

We thought the last two words of the modality were self-defining. A few years later, we changed our minds:

“[Natural Information \(biotic\)](#): Any unintentional distinction, non-uniformity or difference extracted from matter that is living or was once alive.”

The Report of the 2018 [Ad Hoc Technical Expert Group](#) (AHTEG) concluded that Bounded Openness “may merit consideration”. Neither the 14th, 15th nor 16th COP vetted Bounded Openness as an ABS modality. The silence was despite the financial potential of Bounded Openness for conservation and sustainable use. Under the modality, incentives are aligned to alleviate the drivers of extinction, represented through the mnemonic [HIPPO](#) (Habitat loss, Invasive species, Pollution, Population and Overharvesting).

How?

Users would pay Provider countries an “[economic rent](#)” as the benefit to be shared. Rent is the difference between the price paid and what would have been paid under perfect competition (e.g., the price differential during and after intellectual property protection). Providers would obtain rent-rich royalties on biotechnologies protected by intellectual property,

whenever the natural information is not in the public domain. Users would obtain legal certainty and facilitated access, whose value could easily surpass the incidence of the royalties on them. [Jurisdiction-shopping](#) would no longer be advantageous: biotechnology imports from the non-Party would face tariffs equal to the rent-rich royalties. The resources mobilized could run into the billions of dollars.

Bounded Openness responds to the “Objectives and Actions” in the [Draft Decision](#) by the President of COP16 and could supplant the existing modalities of [Decision 16/2](#). As of 21 March 2025, the deadline for Submission of Views for “Possible Additional Modalities”, one hundred and eighty-eight of the 196 Parties chose not to respond. “Additional modalities” implies that any proposal not supplant existing modalities. In other words, the language of the SCBD request precluded Bounded Openness. Such inoculation goes against the framework nature of the CBD as well as against science itself. Of the scant eight Parties which did submit [Views](#) by the deadline, none proposed a comprehensive alternative. Decision 16/2 would remain [unencumbered by economic thinking](#) and legally uncertain [in extremis](#).

Submissions of Views should be brief. Is brevity possible for Bounded Openness? The source material is vast. The skeleton was published in 1992, which is the same year as The Earth Summit, Rio’92. Flesh was hung over the [subsequent years and decades](#). The sweep of this organic whole may emerge by clicking on the links.

The most recent references to Bounded Openness and Decision 15/9 appear in a 2024 [Op-Ed](#) in The Revelator, a 2024 [trilogy](#) of Commentaries in Mongabay and a 2024 [Research Paper](#) from The South Centre on who-should-get-what. Mongabay published a follow-up 2025 [Analysis](#) of Decision 16/2. The timeliness of these references does not, however, indicate novelty. Side Events about the contours of the modality were presented at COPs 2, 9, 10, 13 and 14. Elaboration of the [underlying economics](#) has been ongoing for 35 years. To aid policymakers who enter the discussion [in medias res](#), the most recent references may be the most fruitful for developing---take a deep breath---the “multilateral mechanism for the fair and equitable sharing of benefits from the use of digital sequence information on genetic resources” (MLM) of Decision 16/2.

The expression Natural Information as the object of Bounded Openness first appeared in a 2011 article, published in the open-access *Law, Environment and Development Journal* in [Arabic](#), [Chinese](#), [English](#), [French](#), [Portuguese](#) and [Spanish](#). The two expressions were conjoined in an [online discussion](#) of the Global Multilateral Benefit-Sharing Mechanism (GMBSM) of the Nagoya Protocol (NP). Some 143 participants engaged in four rounds of interrelated themes over eight weeks in 2013. In multiple exchanges, I explained how economics implies Bounded Openness as the [optimal ABS modality](#). I also explained User aversion to paying rents but no qualms in collecting them through limited-in-time monopoly intellectual property.

Acknowledgement by the SCBD of Bounded Openness only began in 2015 with the Side Event at COP13 titled "New Approaches to Access and Benefit Sharing: The Case for Bounded Openness and Natural Information", sponsored by the Sociedad Peruana de Derecho Ambiental (SPDA) and organized by Ruiz Muller (see [transcript](#)). The 100 people in attendance seemed rapt--a tipping point for the ABS discussion---or so we thought.

Economic rent remains the probable cause for renewed studied ignorance of Bounded Openness at COPs 14-16. Ruiz Muller and I mistakenly believed that Ecuador had broken the taboo on rent at COP9 in Bonn, Germany. The delegation of Ecuador, on which I served as technical advisor, suggested that rent officially enter the discussion. Rent was slated to be one of just four questions to consider *en route* to COP10 through Paragraph 14 of [Decision IX/12](#). Vetting was not done at COP10 or at any COP since. The taboo on rent proved resilient.

Fairness, equity and efficiency for ABS require breaking the taboo, once and for all. And delegates need not wait for COP17 in 2026. By cutting and pasting the question from Decision IX/12 into [ChatGPT](#), delegates can discover, literally in a matter of seconds, that the justification for rents is consonant with the economics of information, which is a field pioneered by several Nobel Memorial Prize [economists](#).

Under Bounded Openness, natural information flows unencumbered. Natural information includes genetic sequences as well as geno- and phenotypic expressions regardless of the medium of communication. The scope extends from nucleotide sequences to non-human cultures and designs (e.g. zoopharmacognosy or biomimicry).

Consideration of the modality must consider the terms therein deployed. The comparison is two-tiered. At the higher tier, the comparison is between Bounded Openness for the Global Multilateral Benefit-Sharing Mechanism of the Nagoya Protocol (Article 10) and any of the modalities floated for "digital sequence information on genetic resources" (DSI) in the MLM of Decision 16/2. At the lower tier, the comparison is between Natural Information and DSI.

By the criteria of breadth and discrimination in logic for crafting definitions, Natural Information is preferable to DSI. The latter implies *prima facie* (a) only the digital medium, (b) only genetic sequences and (c) an out-of-scope status for the physical medium from which digitizing occurred upstream, i.e., the biological sample. Advocates of the MLM could address these concerns, but only ham-fistedly. For example, an official *de novo* definition of DSI could include non-digital media and objects other than sequences, thereby addressing concerns (a) and (b). In the same vein, an opt-in provision for non-digital media of Natural Information could address concern (c).

Strong objections would immediately arise. Consider the following for concerns (a) and (b).

Any inclusion of the non-digital and the non-sequential into the definition of "digital" and "sequences" is Orwellian. "Simplicity", touted as a criterion in Decision 15/9, would be doublespeak. This objection integrates with other observations by Parties and stakeholders in the Submissions of Views on DSI in the intersessional periods [2017-2018](#) and [2019-2022](#). Yet DSI persists as a placeholder, COP after COP, commissioned study after commissioned study and [negative peer review](#) after [negative peer review](#).

The ascendancy of DSI since its [unattributed utterance](#) in 2015, owes not only to the aversion of users to pay rents, but also to the costs sunk in deploying DSI at COPs and the intersessional meetings. In economics, cost does not equate to value. The lesson of the [fallacy of sunk costs](#) remains unlearned by Parties despite having finally recognized the failure of bilateral ABS and having pivoted to multilateralism.

"[Stare decisis](#)", i.e. stand by the thing decided, *holds sway even though the appropriateness of the placeholder or a definition of DSI has never been officially decided*. [Homilies](#) are repeated as if DSI were officially accepted with an agreed meaning: "that boat has sailed", "the horse is out of the barn" and "*el pájaro está suelto*" (the bird is in flight). That DSI is a placeholder [without prejudice to alternative terms and definitions](#), means that the boat, the horse and the bird are still moored, corraled and caged.

As strong as these objections are for concerns (a) and (b), even stronger are the objections for (c).

Opting-in non-digital media of Natural Information into the MLM is the last of a half-dozen steps in what amounts to [bait and switch](#):

Step One is acceptance of DSI through misapplication of *stare decisis*.

Step Two is "de-coupling" access from benefit sharing. The metaphor in quotation marks implies [independence between the phenomena de-coupled](#), which is not the intent of stakeholders who rally around "[de-coupling](#)" as somehow "[new](#)". What they intend is "unencumbered access", which appears explicitly in the literature on Bounded Openness since 2015 in [English](#) and in [Spanish](#), and implicitly since I published *Genes for Sale* (Oxford University Press) in 1994.

Step Three is the financing of projects through the MLM. Although Providers took the bait in Decision 16/2, they did not swallow hook, line and sinker. The consensus reached at COP16 is [not legally binding](#).

Step Four is to [trumpet](#) Goal C of the Kunming-Montreal Global Biodiversity Framework, which places "monetary and non-monetary benefits" *pari-passu*, thereby allowing subjective and exaggerated valuation of non-monetary benefits by Users to [depress the expectations](#) of Providers for monetary benefits.

Step Five awaits: development of payment schedules in the run-up to COP17. Providers are in a weak position to negotiate. "[Peanuts for biodiversity](#)" are the consequence of rent-eliminating competition and should not become the benchmark for the MLM. Nevertheless, the observed percentages are recommended *en passant* in the modality [Mare Geneticum](#) and contemplated in the "[Finding Compromise](#)" Report of the WiLDSI Project.

Step Six is the switch. Within-scope biological matter and other media to communicate Natural Information will be opted in, starting with the samples dematerialized and uploaded into some 1600+ databases worldwide. *Biopiracy morphs into biofraud*.

Conclusion

The ABS modalities for DSI and the MLM of Decision 16/2 do not

- (1) provide legal certainty,
- (2) generate benefits on the scale implied by the economics of information,
- (3) resolve ABS for Natural Information communicated through media other than the digital,
- (4) contribute significantly to realizing any of the objectives of the CBD.

The ABS modality Bounded Openness over Natural Information for the GMBSM of the NP does provide, generate, resolve and contribute. Thought experiments show how Bounded Openness, as an alternative modality to those of Decision 16/2, can do so [fairly, equitably and efficiently](#). A demonstration case is warranted---not for the MLM of DSI---but for a GMBSM of Natural Information. The case of the blockbuster drug Ozempic® and the Gila monster (*Heloderma suspectum*) seems [ideal](#).

The history of economic thought is instructive for movement forward on ABS. When powerful arguments do not persuade, tragedy can ensue on a massive scale. One thinks of John Maynard Keynes and *The Economic Consequences of Peace* (1919), still prescient [one hundred years later](#). Mass extinction and the 30+ years of the sixteen Conference of the Parties to the CBD remain exemplary of [the tragedy of unpersuasive power](#), i.e. logic and evidence being stymied by patterns of non-rational group behavior. As I have submitted in [previous views](#) to the SCBD and published elsewhere, I repeat here. [Economics is not diplomacy](#). Leadership could be richly rewarded.

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