

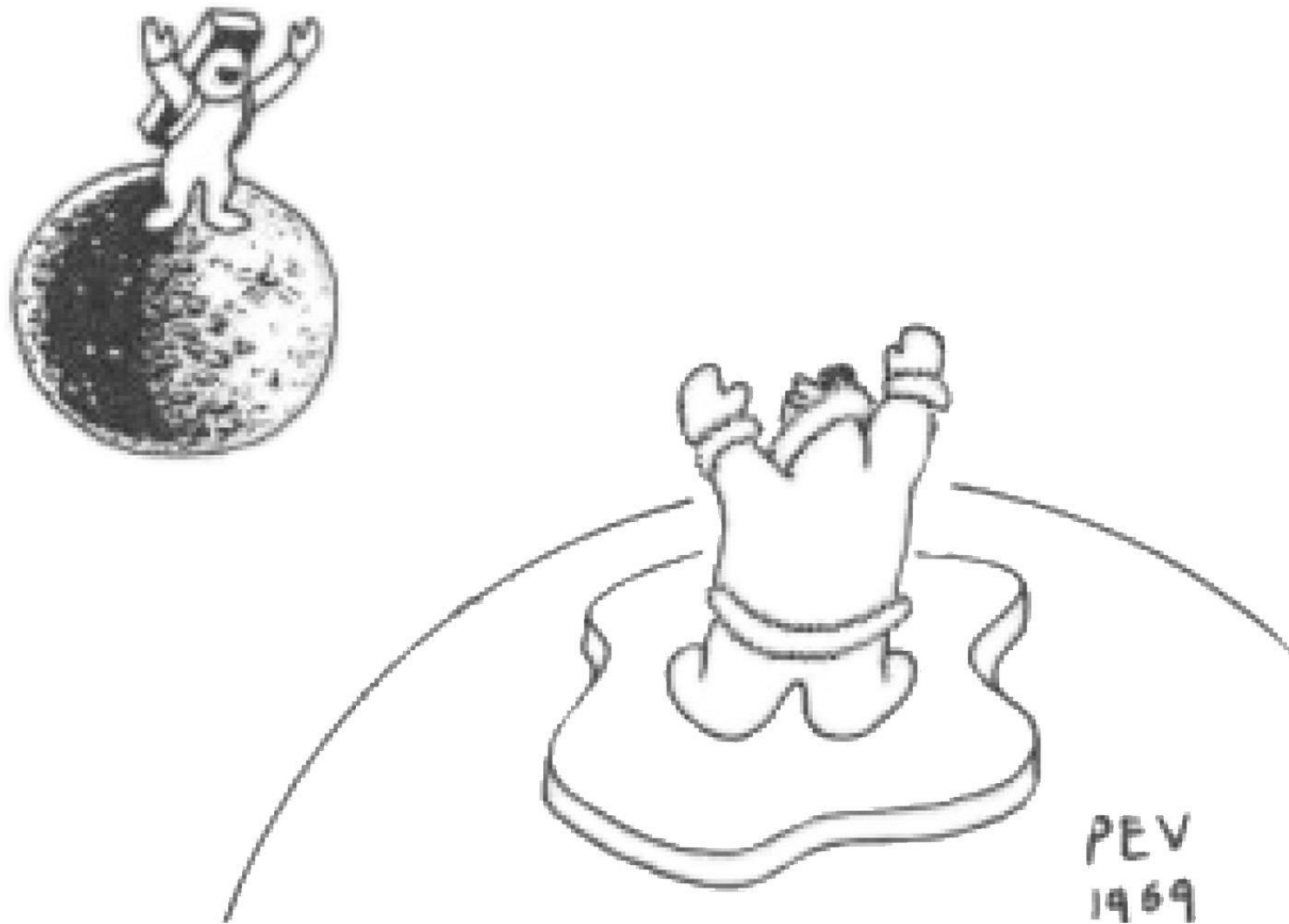
Addressing the Management of Outer Space Through Antarctic Experience

Dr. Merve ERDEM BURGER

Ankara University Faculty of Law
International Law Dept.
erdemm@ankara.edu.tr

- Summary of yesterday;
 - Deficiencies,
 - Gaps,
 - Ineffectiveness,
 - Emerging legal issues and challenges,
 - Initiatives to address space mining
 - Long-term sustainability of outer space
 - UNISPACE +50 Agenda – Thematic priorities 2

Legal regime of outer space and global governance



Drawn by Paul-Émile Victor,
«L'homme en Antarctique félicite le premier Américain sur la Lune », 1969*

*Sebastian Grevsmühl. Antarctique et espace : fin et suite de la géographie. L'Information géographique, Armand Colin, 2010, 74 (2), p.125.

Outline

I. Introductory Remarks

- What we talk about when we talk about management?
- Why Antarctica?

II. Method of the Study: Analogy or Comparison?

- The difference between analogy and comparison

III. Comparison of Management Mechanism of Both Areas

- Rule-based Comparison
- Institution-based Comparison

IV. How to benefit from Antarctic Experience

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I. Introductory Remarks

Management:

Management is a set of principles relating to the functions of planning, organizing, directing and controlling, and the application of these principles in *harnessing physical, financial, human and informational resources efficiently and effectively to achieve organizational goals.*¹

- _ Legal Instruments
- _ Governing mechanism

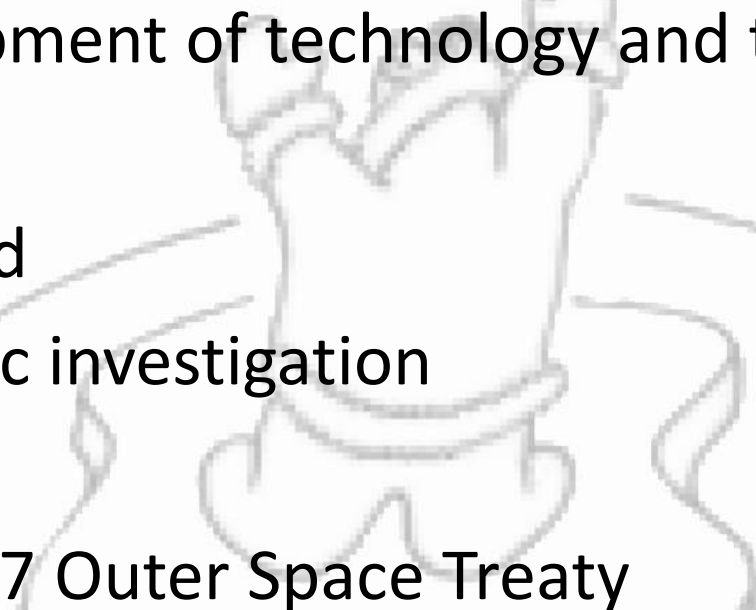
¹ <https://www.managementstudyhq.com/what-is-management.html>

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I. Introductory Remarks

Why Antarctica ?

- IGY – 1957 – 1958 : Development of technology and the activities
 - Sovereignty question
 - Common interest of mankind
 - Freedom of use and scientific investigation
 - Use for Peaceful purposes
 - 1959 Antarctic Treaty to 1967 Outer Space Treaty
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II. Method of the Study: Analogy or Comparison?

➤ **Analogy**

- Problem-solving method in law. Permits transfer of principles and rules from a well established field to less developed field.
- When two fields are significantly similar.
- To fill gaps of the second field.

➤ **Comparison**

- Link up a connection between two fields
- Identify, analyze and explain similarities and differences
- To look to law from broader perspective
- Produce information for law-making and policy making

Comparison

International Space Law and Governance

- The UN Space Treaties
- Declarations, Principles etc.
- UNCOPUOS + UN GA + and other organizations

Antarctic Treaty System

- Antarctic Treaty + Madrid Protocol (The Protocol on Environmental Protection to the Antarctic Treaty) - (instead of The Convention on the Regulation of Antarctic Mineral Resource Activities – Wellington Convention)
- Conventions (Conservation of Antarctic Seals + Conservation of Antarctic Marine Living Resources)
- Antarctic Treaty Consultative Meeting (ATCM) + Committee for Environmental Protection
- Standing Committee on the Antarctic Treaty System (SCAR)

Management Comparison: Rule-based and institution based

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The Rule – Based Comparison	The UN Space Treaties	Antarctic Treaty System
Non-appropriation	+	+?
International Co-operation – Right to visit and observation	+	+
Freedom of Exploration and Use and Peaceful Use	+	+
Exploration, Exploitation and utilization of natural resources	+?	-
Environmental Protection	+?	+
Demarcation	-	+



Rule-Based Comparison

Non-appropriation

The UN Space Treaties

- OST Art. I – “province of mankind”
- OST Art. II – “not subject to national appropriation by claim of sovereignty”

Antarctic Treaty System

- Four groups of claims can be identified
- AT Art. IV – “Freezing of claims”



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Rule-Based Comparison

International Co-operation

- **Both legal regime are based on international cooperation**

The UN Space Treaties

- Preamble: “... *desiring to contribute broad international cooperation...*”
- OST 1/III: “... *states shall facilitate and encourage international cooperation...*”
- OST III: “... *promoting international co-operation and understanding.*”
- OST Art. X: “*In order to promote international co-operation...*”



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Rule-Based Comparison

Antarctic Treaty System

- AT Preamble: ... contributions to scientific knowledge resulting from international cooperation...”
- AT Art. III: “In order to promote international co-operation in scientific investigation in Antarctica ... to the greatest extent feasible and practicable:
 - Exchange of information,
 - Exchange of scientific personnel,
 - Exchange of scientific observations and results, available for free”



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Rule-Based Comparison

Right to Visit and Observation

The UN Space Treaties

- OST Art. X : - Request of observation of flights of space objects on the basis of equality
 - agreement for the nature and conditions of observation
- OST Art. XII: - All stations, Installations, equipment and space vehicles are open
 - on a basis of reciprocity

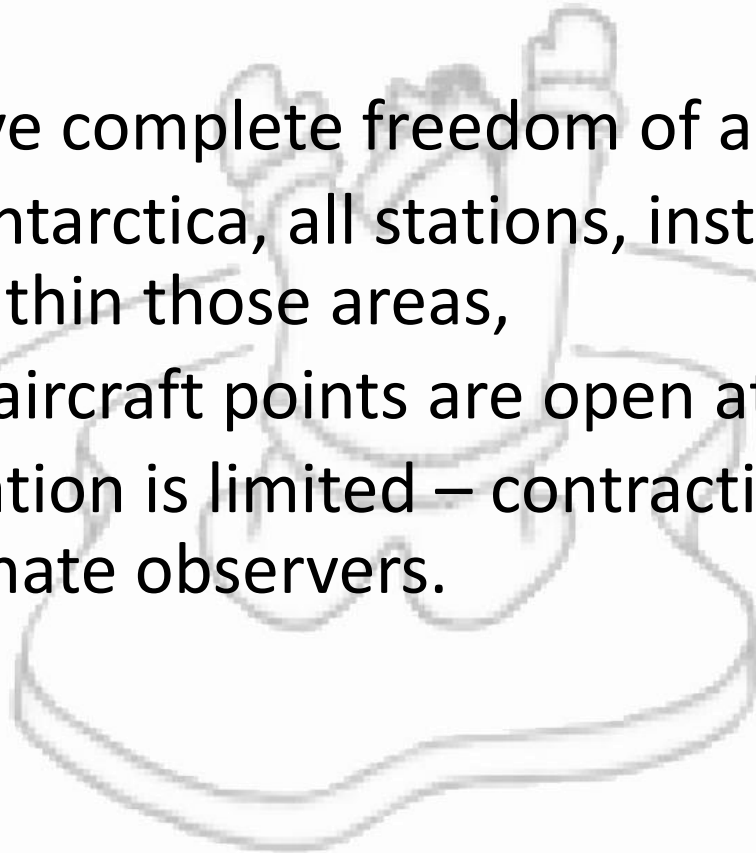
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Rule-Based Comparison

Antarctic Treaty System

- AT Art. VII: - Observers have complete freedom of access
 - All areas of Antarctica, all stations, installations and equipment within those areas,
 - All ships and aircraft points are open at any time.
 - Aerial observation is limited – contracting parties have right to designate observers.



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Rule-Based Comparison

Freedom of Exploration and Use

The UN Space Treaties

OST I – Freedom of use and exploration on the basis of equality for the benefits of mankind.

- Freedom of Scientific investigation by civil or military personnel.

Antarctic Treaty System

AT Art. II – “Freedom of scientific investigation and cooperation ... shall continue...”



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Rule-Based Comparison

Peaceful Use

The UN Space Treaties

- OST Art. IV: Prohibition of nuclear weapons and any other kinds of weapons
- Installation, fortification, testing of any type of weapons, conduct of military activities
- Freedom of scientific research by military personnel

The ATS

- AT Art. I: - Peaceful purposes
 - Any measures of a military nature such as establishment of military bases and fortifications, military maneuvers, testing of any type of weapons.



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Rule-Based Comparison

Exploration, Exploitation and Utilization of Natural resources

The UN Space Treaties

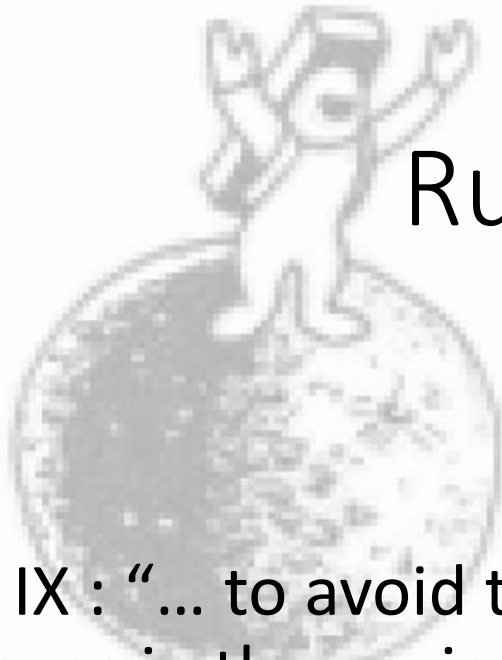
- OST is silent
- The Moon Agreement Art. IX – common heritage of mankind

Antarctic Treaty System

- Madrid Protocol Art. VII: *“Any activity relating to mineral resources, other than scientific research, shall be prohibited.”*



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Rule-Based Comparison

Environmental Protection

The UN Space Treaties

OST IX : “... to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter ... shall adopt appropriate measures...”



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Rule-Based Comparison

Antarctic Treaty System

- AT Art. V – “Any nuclear explosions and disposal there radioactive waste material shall be prohibited.”
- Madrid Protocol – Antarctica as a natural reserve
 - principles for planning and conduct of activities
 - requires prior assessments of environmental impacts of proposed activities.

- Annexes:
- Environmental Impact Assessment
 - Conservation of Antarctica and Fauna
 - Waste disposal and waste management
 - Prevention of Marine pollution
 - Area protection and Management
 - Liability arising from Environmental Emergencies

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Rule-Based Comparison

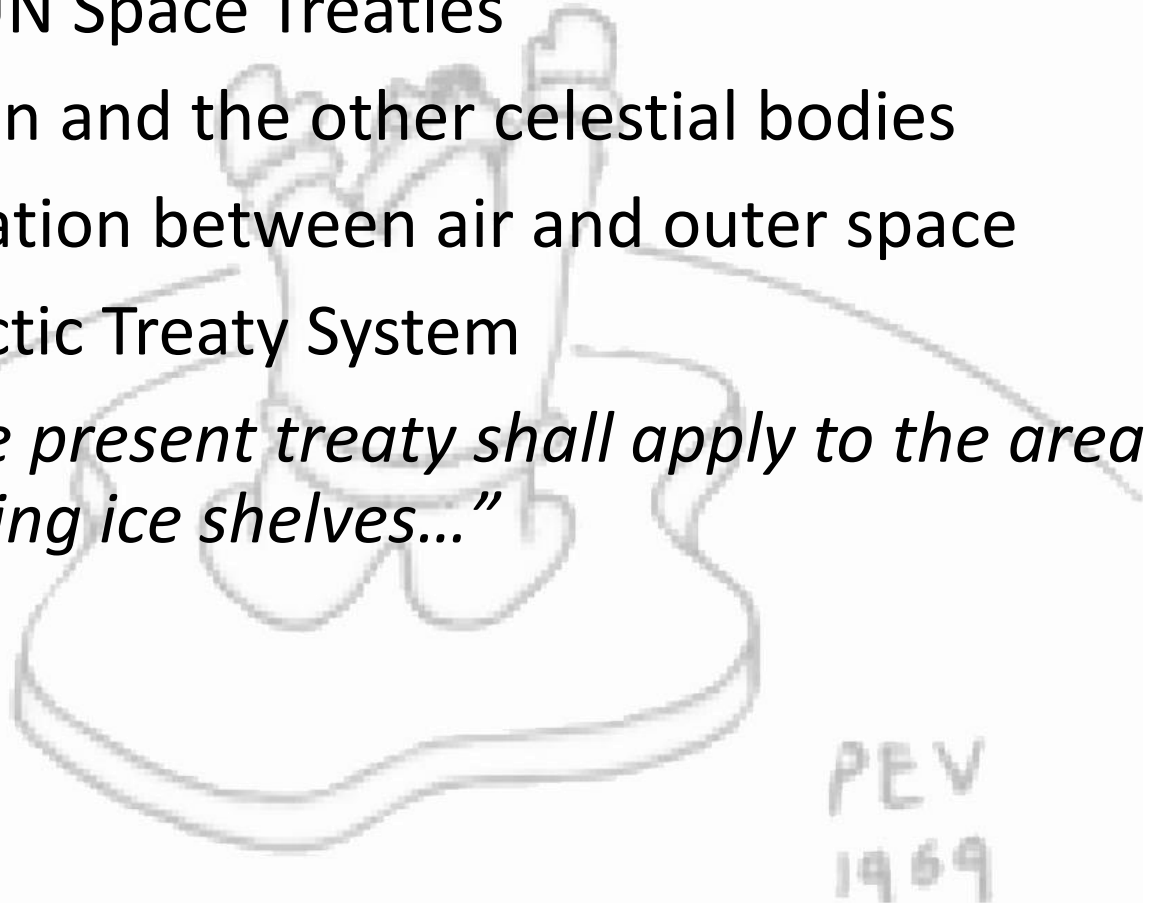
Demarcation

The UN Space Treaties

- Covers outer space, the Moon and the other celestial bodies
- No demarcation and delimitation between air and outer space

Antarctic Treaty System

- AT Art. VI – *“provisions of the present treaty shall apply to the area south of 60⁰ Latitude, including ice shelves...”*



Institution-based Comparison

- UN and UNCOPUOS and other organizations

UN COPUOS → UN GA 4th Committee → UN GA Resolution

- Scientific and Technical Subcommittee
- Legal Subcommittee

Consensus → Report of the Subcommittees → Report of the UNCOPUOS

- 92 member states
- Observers

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Institution-based Comparison

ATCM + CEP + SCAR

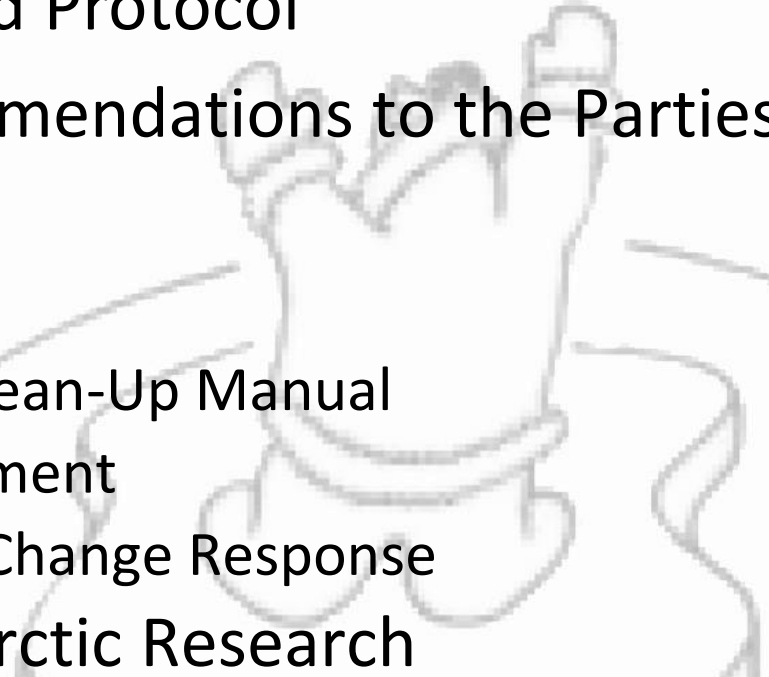
- The Antarctic Treaty Consultative Meeting:
 - 1961 – 1994 every two years, 1994 – present annually
- The meetings consist of:
 - The Consultative parties
 - non-consultative parties
 - observers
 - Invited experts
- Measures, decisions and resolutions – by consensus

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Institution-based Comparison

The Committee for Environmental Protection

- Established Art. 11 by Madrid Protocol
 - Advice and formulate recommendations to the Parties to implement the Protocol
 - Intersessional Groups
 - ICG to review the Antarctic Clean-Up Manual
 - Subsidiary Group on Management
 - Subsidiary Group on Climate Change Response
 - Special Committee on Antarctic Research
- 
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Benefit From Antarctic Experience

- ? Law-making policy
 - Evolution of legal regimes through thick cooperation
 - Natural resources
 - Environmental protection
 - International Cooperation
- ? Institutional governance policy
 - Decision making
 - Effective address to the emerging issues
 - Confidence-building solutions
 - Peaceful problem solving

