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*The “new”, the “modern” and the  
“innovative”: a historical approach*

**Novelty, modernity, innovation  
have their own historicity**

- The terms emerged in the “early modern” period (ca 1490 – 1730)

**The birth of and the discourse on  
new, innovation, etc. has  
characteristics of timeless nature**

- Spaces
- Sources & factors
- Culture of innovation

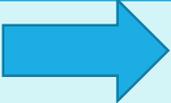
“There was no such thing as *the* scientific *revolution* [...]”

Steven Shapin, *The Scientific Revolution*, p. xv. , Chicago University Press, 1996

### Rethinking “novelty” and “innovation” as products of “revolution”

- There was not any singular, discrete event, localized in time and space that can be pointed as “the” “scientific revolution” that gave birth to “modernity”
- Novelty and innovation were the products of gradual and long-term process of change rather than wholesale innovation happening overnight
- There were diverse cultural practices aimed at understanding, explaining and controlling the natural world, each with its own characteristics and changes
- The issue was the integration of the “new” within the authoritative doctrinal and disciplinary framework

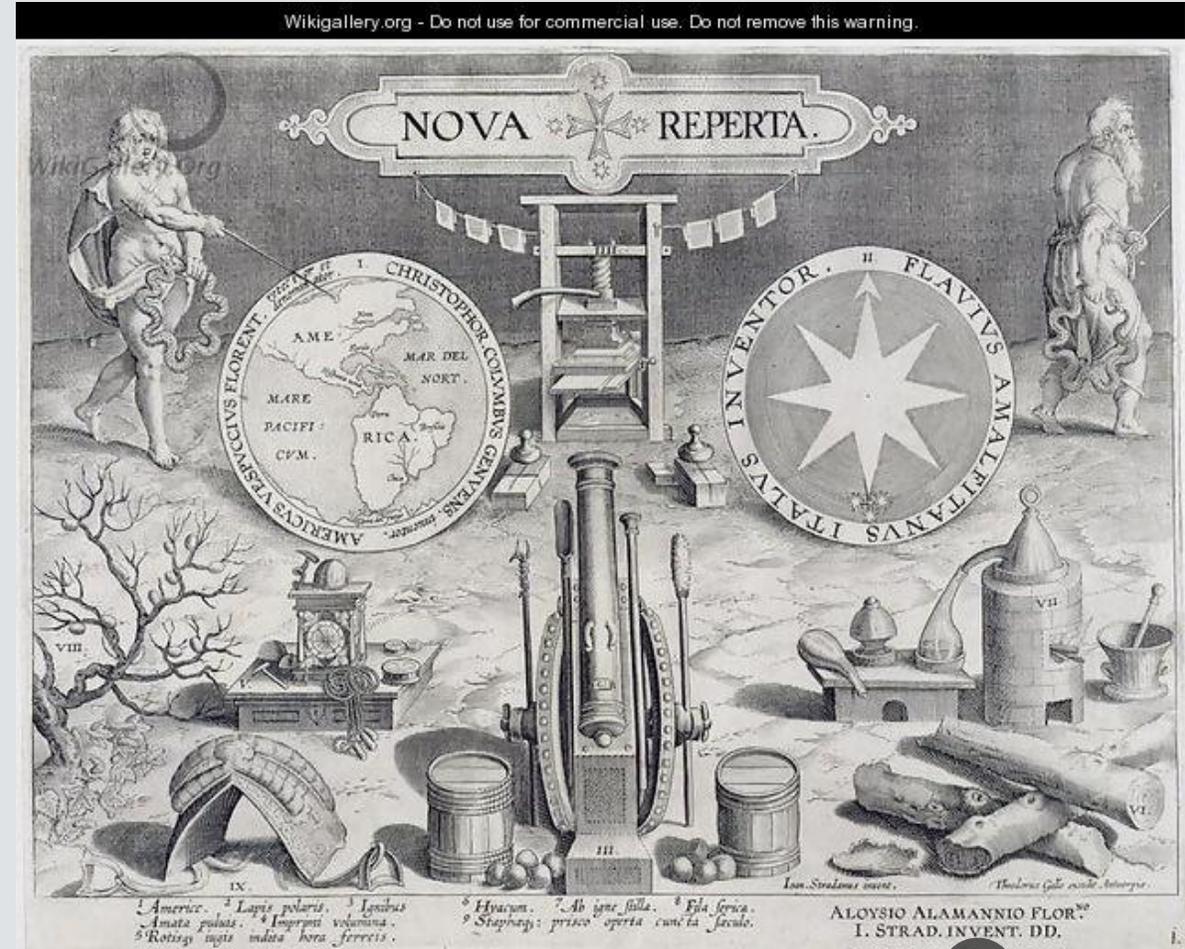
## *Aetas Nova* (New Age) What was “new”?

- ❖ New worlds (East and West) were discovered  new markets and trade routes were opened
- ❖ New devices and instruments were invented (e.g. the telescope)
- ❖ New philosophies advanced with new arguments  new scientific works, whose titles advertised their novelty (e.g. Galileo’s *Dialogues Concerning Two **New** Sciences* [1638] )
- ❖ New artistic techniques exploited

# Nova Reperta ("New Discoveries") (Antwerp, early 17<sup>th</sup> century)



*Americen Americus retexit ;* **AMERICA.** *Semel vocavit inde semper excitam.*



*Americ.* *Lapis polaris.* *Ignibus Amata polaris.* *Impressi volumina.* *Rotary ignis undia hora ferretis.* *Hyacin.* *Ab igne filia.* *Fila serica.* *Staphys: prisco aperta cuncta saculo.* *ALOSIO ALAMANNIO FLOR. I. STRAD. INVENT. DD.*

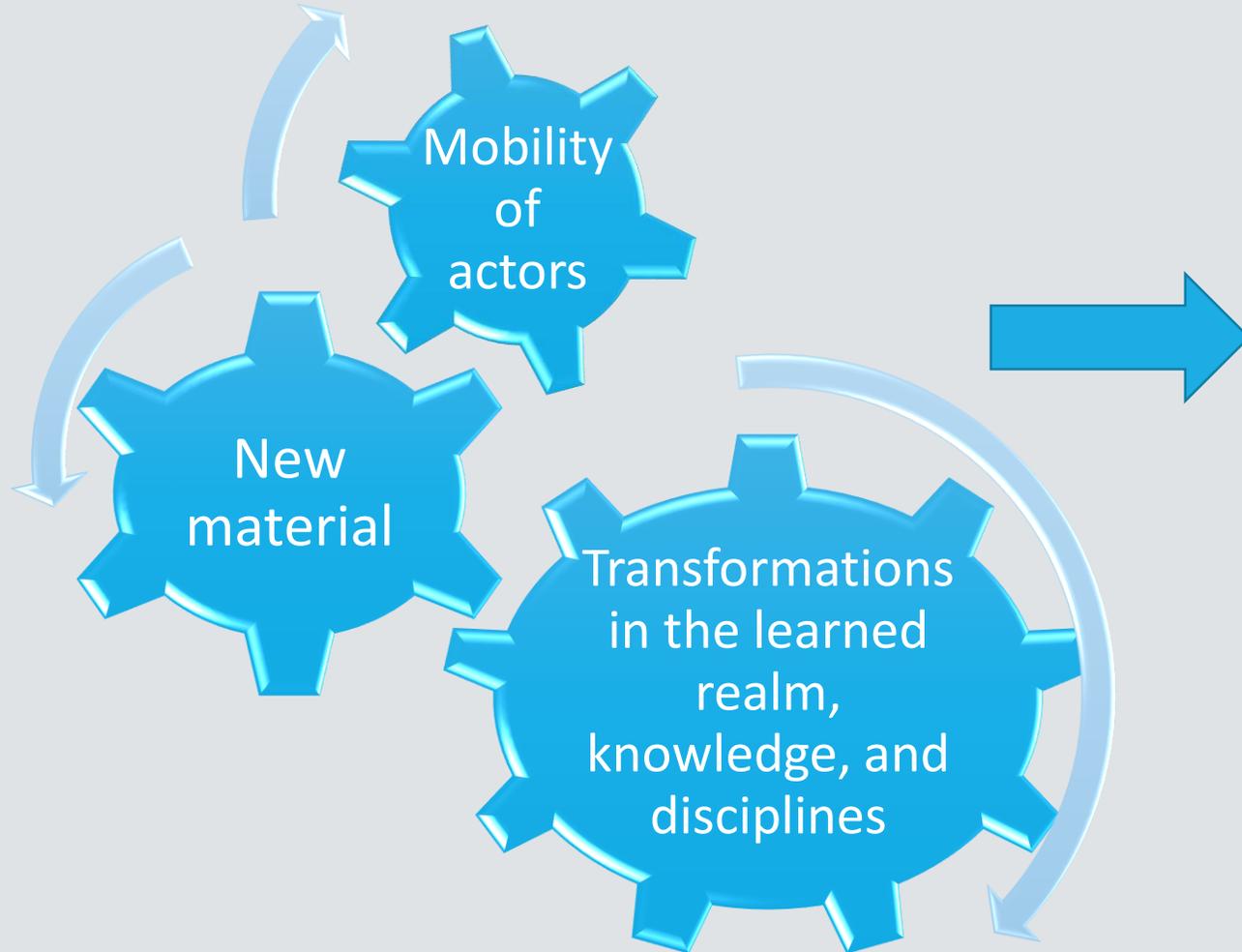
*Innovation (scientific & technological) is a cultural product*

Science(s) follows and serves the needs that stem from cultural changes and shifts

Novelty and innovation are not born in a neutral environment nor in a cultural vacuum

Scientific and technological advances respond to social, economic, political, religious, etc. changes and shifts

# *Factors of scientific innovation*

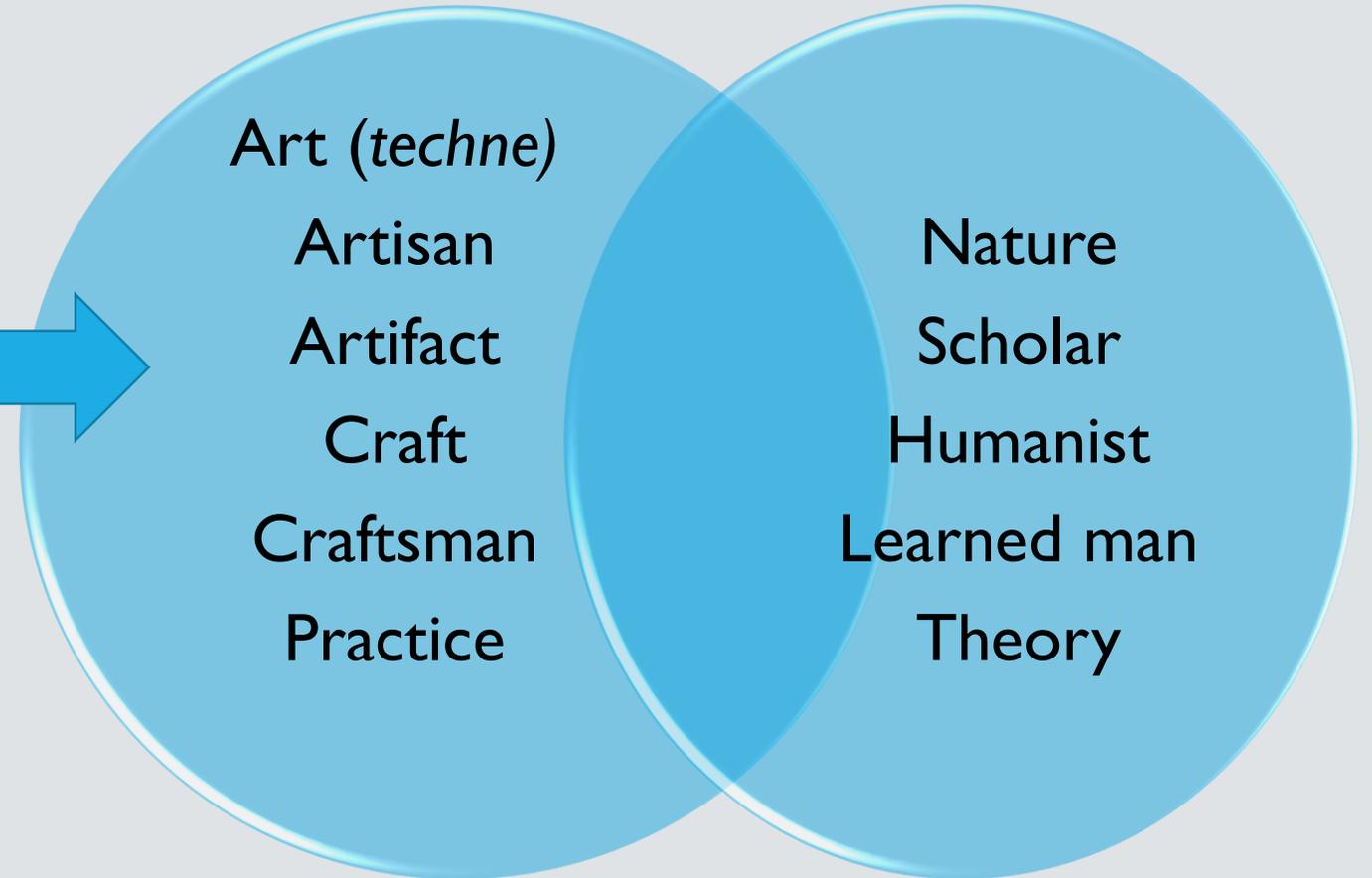


## **Reconfiguration of knowledge and professional careers**

- **New associations between fields of knowledge made possible by new associations between people in new places (e.g. botanical gardens, anatomy theatres, print shops & book shops)**
- **People involved across different fields of knowledge.**

# *“Trading zones” favoring technological innovation*

- ❖ Consumption
- ❖ Cultural value of artefacts
- ❖ Shared values among scholars & artisans
- ❖ Urbanization (rich & powerful cities)



*Where and how was “innovation”  
born?*

*The role of power-knowledge  
networks*

**Scientific networks were modulated on social  
networks**

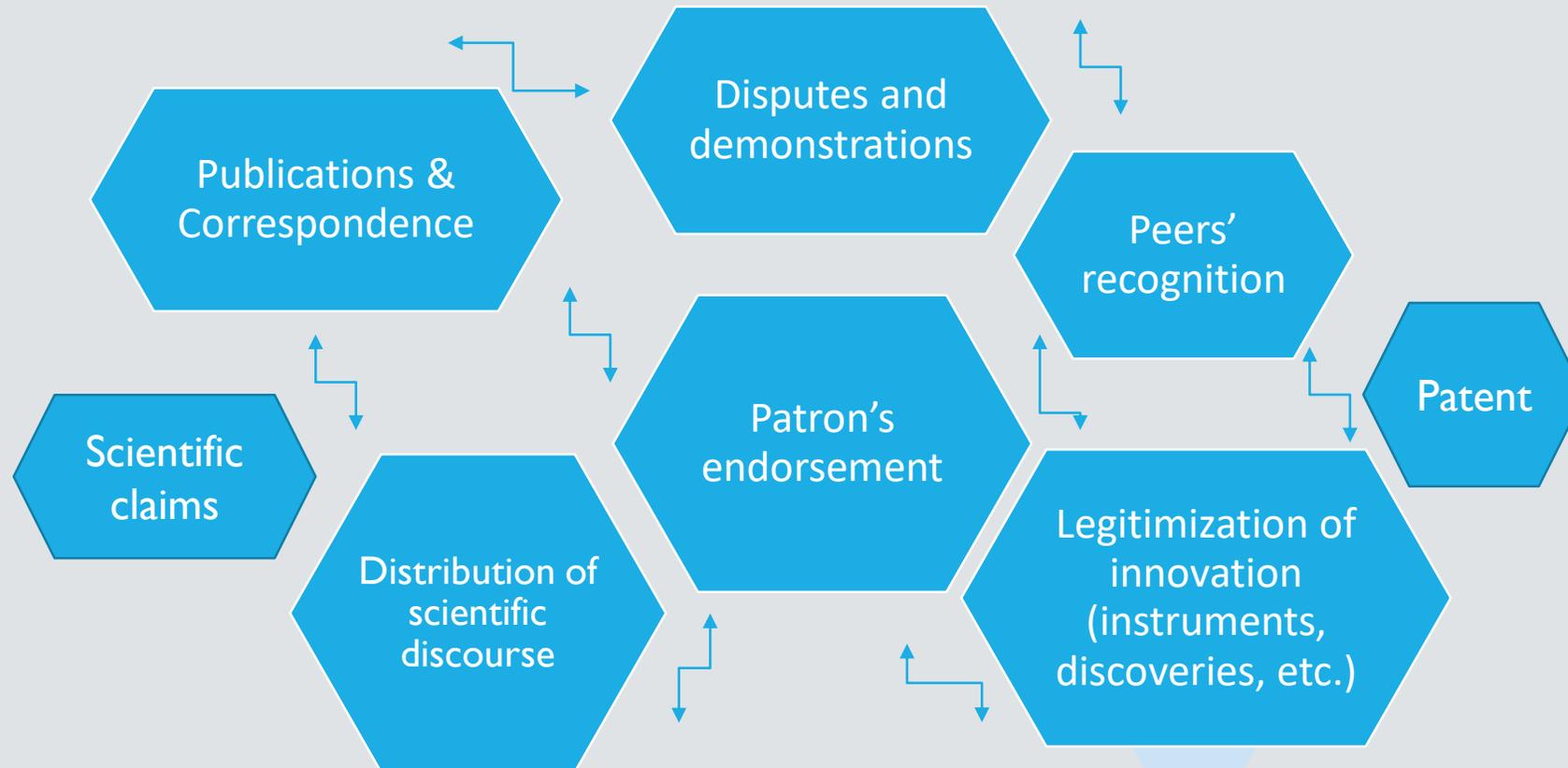
**Social spaces acted as scientific communities and  
spaces of scientific innovation**

### *Spaces of innovation*

- **Universities:** were hostile towards the “new” as it questioned the scientific and social authority of the extant body of knowledge
- **Academies, botanical gardens, anatomical theatres, etc.** acted as “laboratories”
- **Courts:** a power-knowledge network

Provided access to social status, financial advancement, legitimization and credibility of scientific claims, reward and dissemination of innovation and novelty, etc.

# The workings of court as a power-knowledge network leading to the establishment of innovation



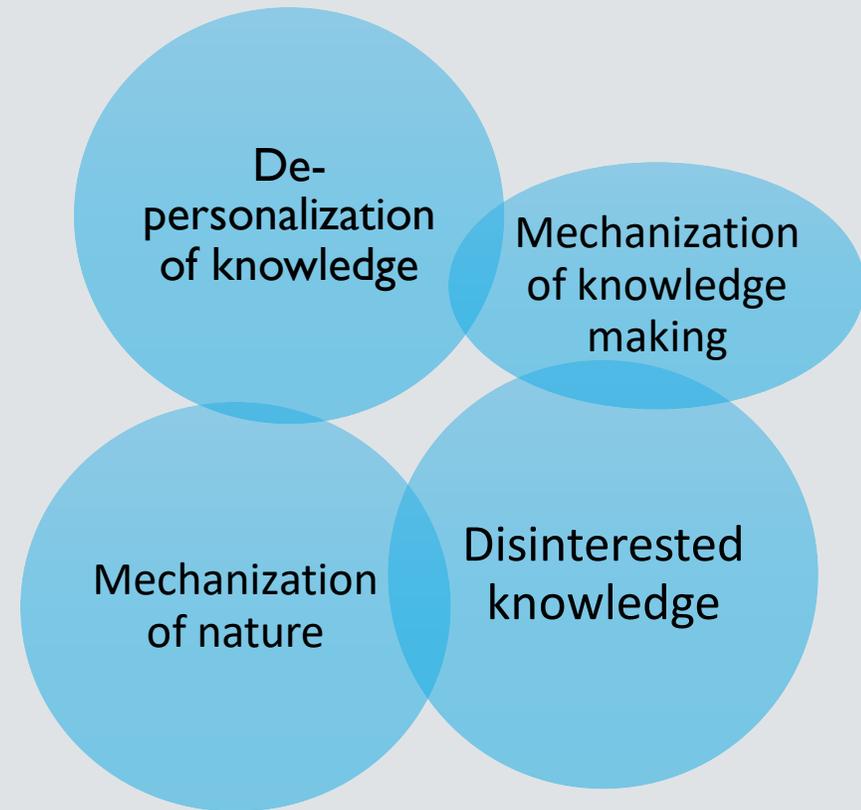
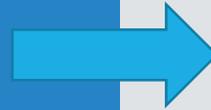
## **“Novelty” and “Innovation”**

*Progress or progressive growth of knowledge?*

*Accretion of new things or deeper understanding of the extant knowledge?*

The result of reforms in the modes of asking, identifying, securing, validating, organizing, communicating knowledge & experience in scientific fields, often entailing discoveries, inventions, new ideas

**Mechanization of nature and  
means of knowing about nature**



# ***Culture of Innovation***

**Institutionalization of innovation**

**Mobility and new associations between experts, from different fields of knowledge, in different spaces of knowledge**

**Pursuit for a wider implementation of values that inform reforms**

(e.g. personal experience, personal observation, belief in the efficacy of instruments and devices, belief in expertise, in difference and identity, collaboration, circulation, openness, control of innovation, readiness for correction, publicity of results, etc. are associated with the concept of progress in a branch of knowledge)