

# Knowledge Commons, Health Innovations and Patent Law

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IASC Regional European Conference  
Commons in a "Glocal" World: Global Connections and Local Responses  
13 May, 2016, University of Bern

# Knowledge as a commons

*Charlotte Hess and Elinor Ostrom, Understanding Knowledge as a Commons: From Theory to Practice, MIT Press 2006*

## Studies of commons

- Commons as shared resources system (economic good) and commons as property rights
- Equity, efficiency, and sustainability principles
- Principles of common-pool resource institutions: boundaries, rules, community/individuals, nested enterprise/multiple layers of activities

## Studies of knowledge

- Public good— non-rivalry resources
- Intellectual enquiry — accumulative experiences
- Epistemic area of interests — intellectual property, transaction cost of information
- Enclosure and openness
- Tragedy of commons and tragedy of anti-commons

# Knowledge commons and patent concerning medical innovations

- Tragedy of Anti-commons (Heller, 1998) (Heller & Eisenburg, 1998)
  - Underuse of science resources due to excessive patenting on biomedical research; consequence of stifling innovation
- Collective actions, self-governing, rules and regulations
- Medical innovations:
  - Shared resources: knowledge of small molecule organic chemistry; experimental data; improvement in clinical use
  - Enclosure through patent: boundary via eligibility and patentability by law; boundary via dissemination and use; boundary via regulation and nested activism
  - Sustainability: relevance to SDG 3 and right to health; impact on innovation

# Intersection with Patent Law Regime

## 1995 Agreement on Trade Related Intellectual Property Rights (TRIPS), WTO



Pre-TRIPS

- Non binding
- Diversified

Patent on pharmaceutical products

Minimum 20 years protection

General criteria for patenting

Right to use compulsory license

Data protection

Parallel Import/ Voluntary License



Post-TRIPS

- Binding
- Unified/flexible

### TRIPS-plus provisions in free trade agreements (FTA)

Patent term extension

Stringent patentability

Limits compulsory license

Data exclusivity

Investment protection/ISDS

Patent linkage

# Intersection with eligibility and patentability

## Global rules vs. local reactions

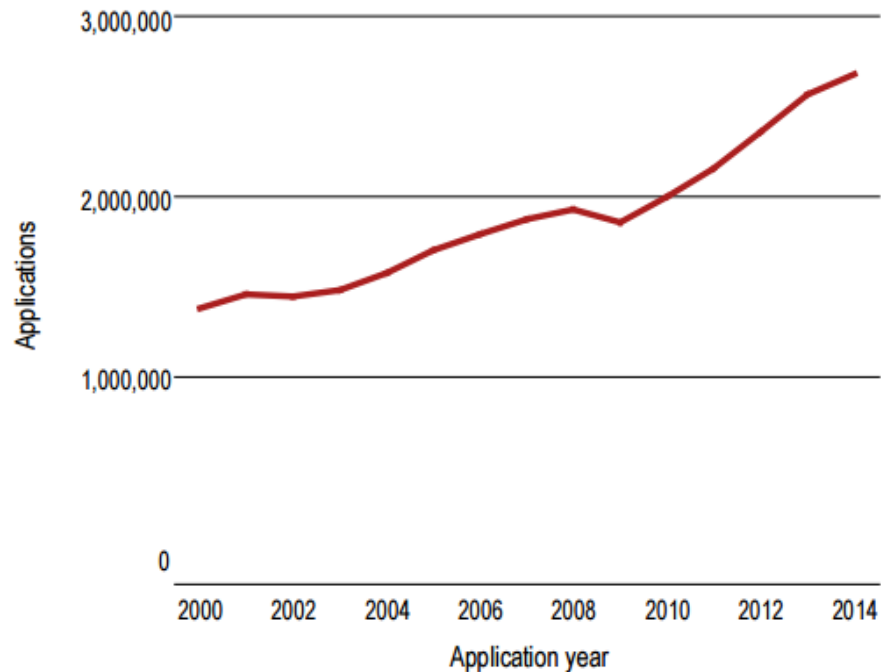
- Global rules:
  - Exceptions to eligibility: method of diagnostic and treatment methods on human and animals
  - Patentability: novelty, inventiveness, industrial applicability
  - Statutory exemptions: non-infringement, research exceptions
  - Procedural: examination, opposition, invalidation
- Reactions by corporates:
  - Eligibility: patenting on method of treatment/diagnostics, patenting on living matters, patenting on genes
  - Patentability: derivatives; new medical use; selective patents; formulations; dosages;
- Reactions by national laws:
  - Expansionism
  - Flexibility --- restrictions

### Variants:

- Free Trade Agreements
- National law leverage: India, Brazil, China, Egypt, etc.

# Intersection with Innovation Narrative

Figure 1. Patent applications worldwide



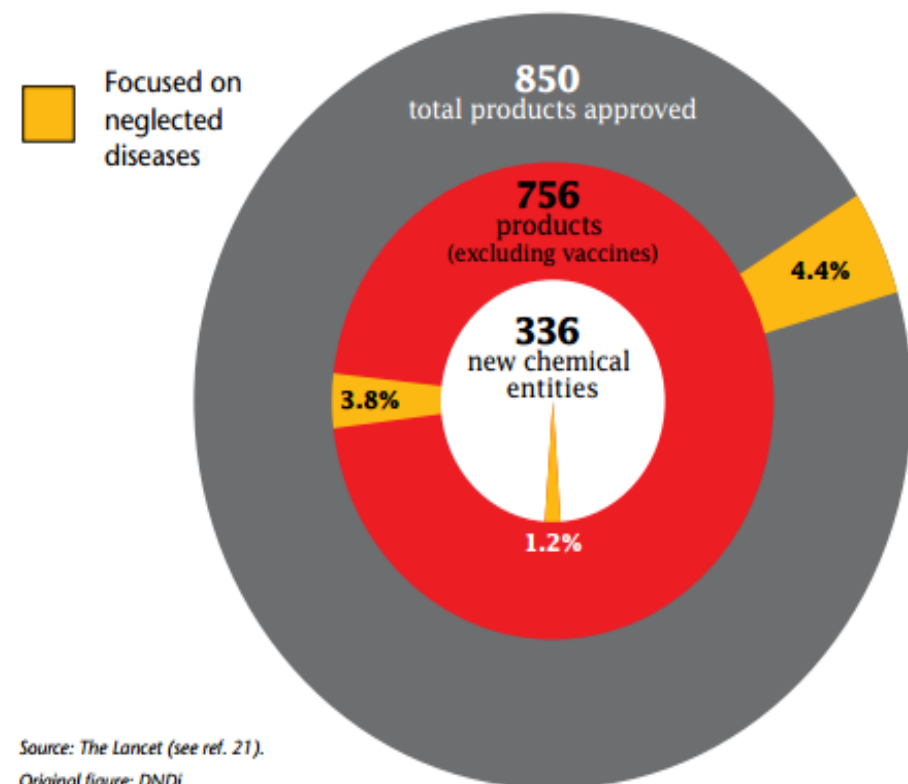
Source: WIPO World Intellectual Property Indicators, 2015

Global patent filings on pharmaceuticals have increased by 7.3% from 1995-2013.

Source: WIPO World Intellectual Property Indicators, 2015

Source: Pedrique B, et al. The drug and vaccine landscape for neglected diseases (2000- 11): a systematic assessment. [Online] Lancet: 2013; 1(6):e371.

FIGURE 1: FATAL IMBALANCE IN HEALTH R&D (2000 TO 2011)

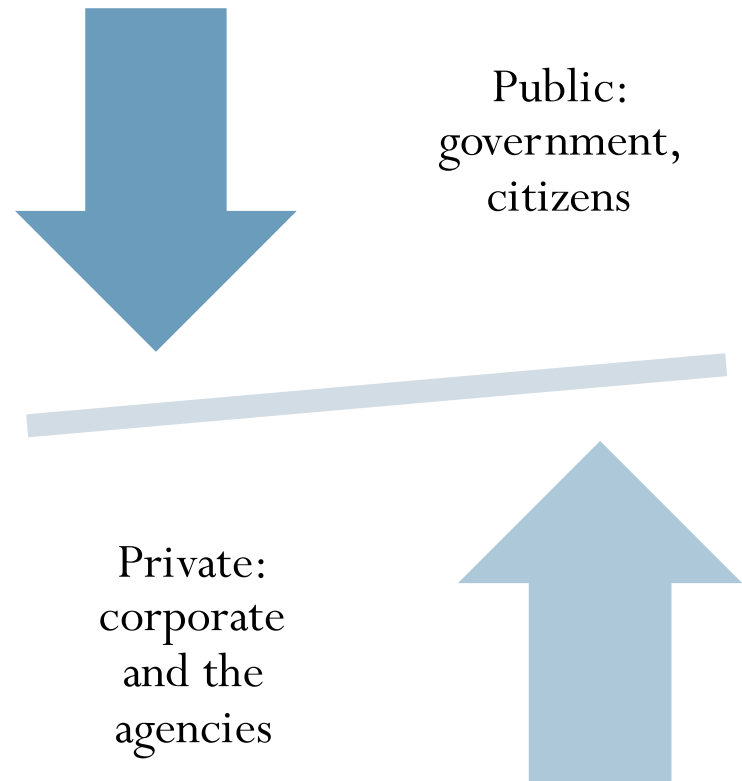


Source: The Lancet (see ref. 21).  
Original figure: DNDi

# Intersection with Licensing Practices

- Compulsory license
  - Non-working of the patent
  - Government use
  - Anti-competition
  - High prices
- Voluntary license
  - Corporate boundaries
  - Stages of powers: international relations; MNCs; geopolitical dilemmas

Defining Boundaries of Dissemination



# Sustainability of the knowledge commons for medical innovation

- Internal expansion and mutation of patent law regime keeps enclosing the common resources for medical innovation
- Nested effects with international political economy deepening the inequity and inequality in resource share and dissemination in medical innovation arena
- Research needed on the interciprosity of collective actions from law and science professions; law and policy makers and social activism
- Realisation of SDG on health requires radical rethinking and reform of the current system



Thank you!

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