Variegated New Political Economies

Biotech and 3D printing technologies in advanced capitalism

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Introduction (1)

• New technologies are increasingly presented as solutions to the most important issues relating to economic, political, social, or ecological crises.

• They create promises but also expectations for governments, industries and social groups with conflicting interests.

• New political economies emerge around new technologies such as biotech or 3D printing.
• STS are paying greater attention to interactions between new technologies and politico-economic orders (e.g. Slaughter and Rhoades 2004, Mirowski and Sent 2008, Lave et al. 2010, Bonneuil and Joly 2013)

• Micro focus of STS vs macro focus of political economics, need for interdisciplinary approach showing co-production processes at work (Jasanoff 2004)
Political economy: a tentative definition

A political economy is a narrative embedded in materialities and supported by public policies, which aims to produce economic and social value by relying on the potential of new technologies.
The Bioeconomy offers Europe a unique opportunity to address complex inter-connected challenges, while achieving economic growth. It can assist Europe in making the transition to a more resource efficient society that relies more strongly on renewable biological resources to satisfy consumers' needs, industry demand and tackle climate change.

European Commission, « Innovating for Sustainable Growth: A Bioeconomy for Europe »
STS studies on biotechnologies and life sciences

• Emphasis on the role of marketization and an enlarged regime of IP rights, or the co-production of biotech and legal/constitutional frameworks (Jasanoff 2011)

• Global bioeconomy in which « biovalue » (Cooper 2008) or « biocapital » (Sunder Rajan 2006) offer new opportunities for economic growth

• Value come from the application of knowledge to nature and its subjection to IP rights (Birch and Tyfield 2013)
The next steps

• What about other knowledge-based global political economies?

• Are there recurrent patterns for technology-related political economies?

• What does it imply for the further development of recent/emerging political economies?
New manufacturing economy

« A once-shuttered warehouse is now a state-of-the-art lab where new workers are mastering the 3-D printing that has the potential to revolutionize the way we make almost everything »

Barack Obama, State of the Union speech, Feb. 2013
Variegated political economies: discussion

- By now, mainly practical or policy-oriented literature on 3D printing, few STS studies (except Robinson and Lagnau 2014)

- Both biotech and 3D printing are **heralded as transforming the world in the 21st century**

- Bioeconomy and new manufacturing economy present **contrasting cases** (different societal embeddings, promises and expectations, or connecting with different master narratives)

- Underlying imperative to invest in, share or protect new knowledge, technologies and human creativity for **increasing market values and competitiveness**

- Proliferation of conflicts and ethical, legal and societal issues (**ELSI**)
Conclusions

• My project aims to contribute to the understanding of the formation of political economies around new technologies and their implications in two domains

• Both domains connect with cornucopian imaginaries of abundant knowledge, natural and creative resources (see Birch et al. 2010 on bioeconomy)

• Emerging tension between empowerment of individuals (e.g. Rose 2007, Rabinow 2009) versus neoliberal colonization of new domains (nature and human creativity)
Thank you for your attention!

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Research objectives

1) Analyze the **global constructions** of the bioeconomy and the new manufacturing economy

2) Carry out case studies to trace the **local conflicts** among national governments, industries and social groups, and the outcomes of such conflicts

3) Identify **recurrent patterns** for technology-related conflicts in new political economies, and **anticipate on what this implies** for further developments
Disciplinary perspectives and methodology

• An **interdisciplinary** project at the crossroads of *science and technology studies* and *political economy*

• An **innovative** approach in terms of *co-production*

• The project **combines** a broad set of *qualitative methods*

• It involves **four field research phases**
Global politico-economic orders

Local practices and contexts of new technologies

Biotech

3D

Analysis and comparison

2 case studies

STS/Pol Eco Interdisciplinary approach

2 case studies
The co-production of new technologies and politico-economic orders:

The domains of biotechnologies and 3D printing

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FNRS CR

2010  2011  2012  2013  2014

FNRS-MINCyT € 25,000 (€12,500)
WBI-CAPES (Brésil) € 95,350 (€38,850)

PACITA (FP7) € 5,512,046 (€299,600)
TASTI (PDR-FNRS): € 586,350 (471,136€)
FNRS CQ

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GIGS (PDR-FNRS): €519,950

FNRS-CONICET €25,000

WSL-Labs (Creative Wallonia): €486,170 (€51,750)

INSOLL (DG06 Germaine Tillion): €653,073

FIRST Spin Off DGO6 Mesydel: €253,600

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A **political economy** is a **narrative** embedded in **materialities** and supported by **public policies**, which aims to produce **economic and social value** by relying on the **potential of new technologies**.