Variegated New Political Economies

Biotech and 3D printing technologies in advanced capitalism

Pierre Delvenne

FNRS Research Associate
SPIRAL Research Centre, STS Unit
Faculty of Law, Political Science and Criminology

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

Introduction (2)

- 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**

Bioeconomy

« 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

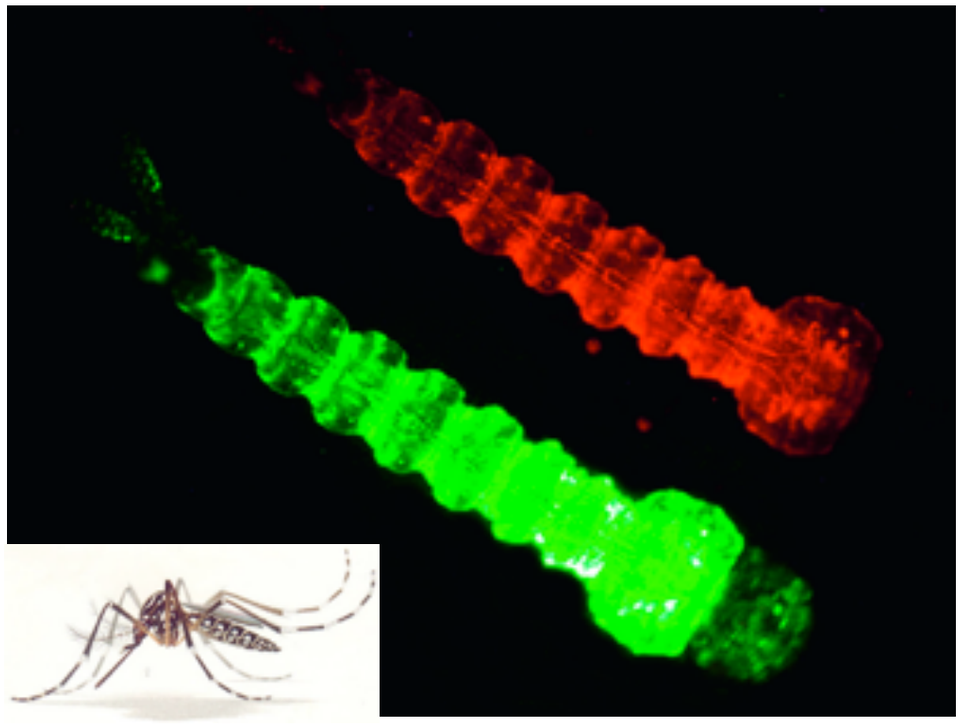
- By now, mainly practical or policy-oriented literature on 3D printing, **few STS studies** (except Robinson and Lagnau 2014)

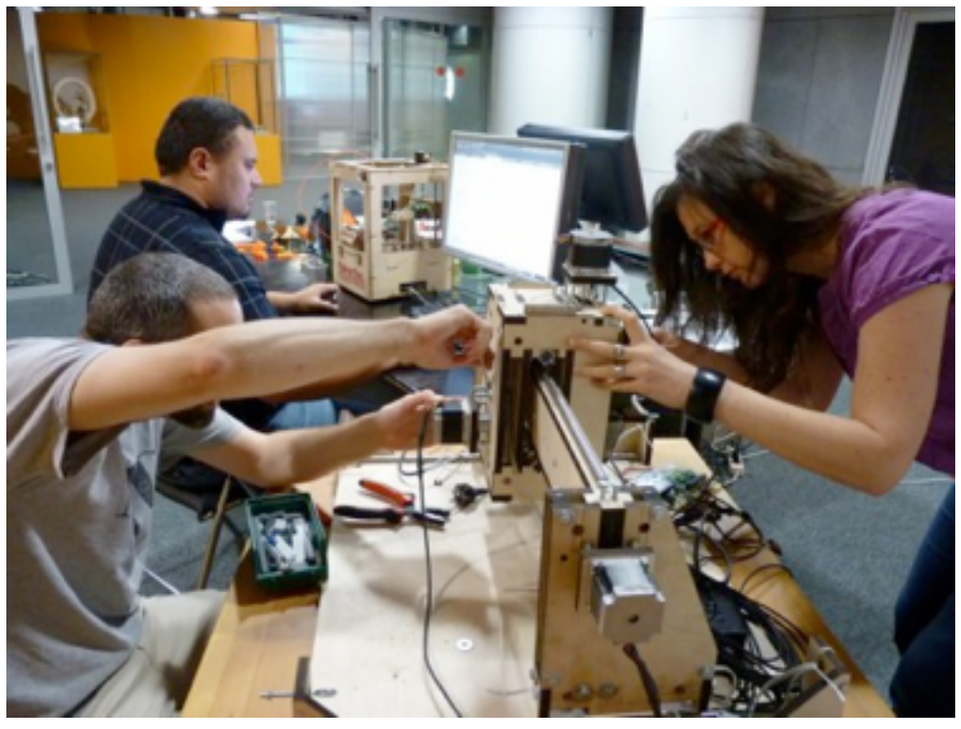
- Both biotech and 3D printing are **heralded as transforming the world in the 21st century**

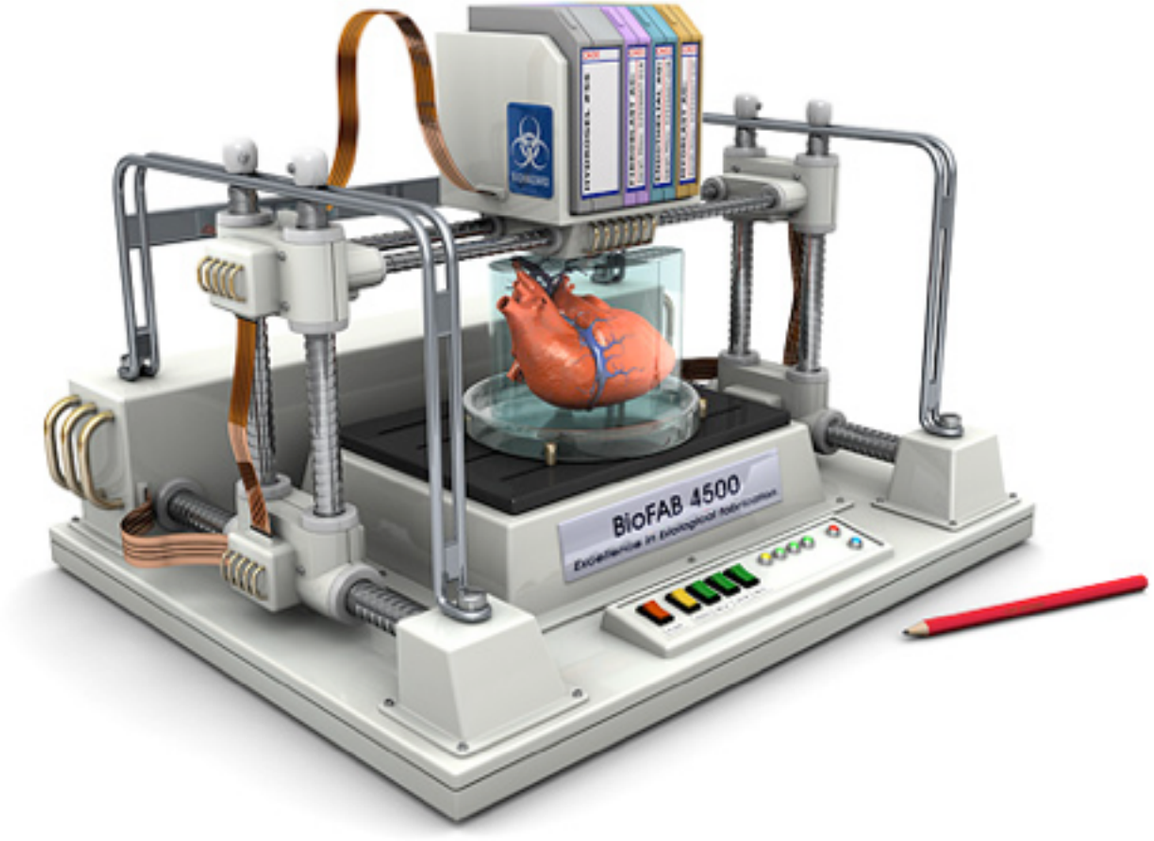
- Bioeconomy and new manufacturing economy present **contrasting cases** (different societal embeddings, promises and expectations, or connecting with different master narratives)

- 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**)






BioFAB 4500

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!

Contact: pierre.delvenne@ulg.ac.be
www.spiral.ulg.ac.be

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

STS/Pol Eco Interdisciplinary approach

2 case studies

Analysis and comparison

2 case studies

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

The domains of biotechnologies and 3D printing

Pierre Delvenne

FNRS Postdoctoral Researcher
SPIRAL Research Centre, STS Unit
Faculty of Law, Political Science and Criminology

fnrs LA LIBERTÉ DE CHERCHER

Université de Liège

dpc FACULTÉ DE DROIT SCIENCE POLITIQUE CRIMINOLOGIE

Spiral

FNRS CR

2010 2011 2012 2013 2014

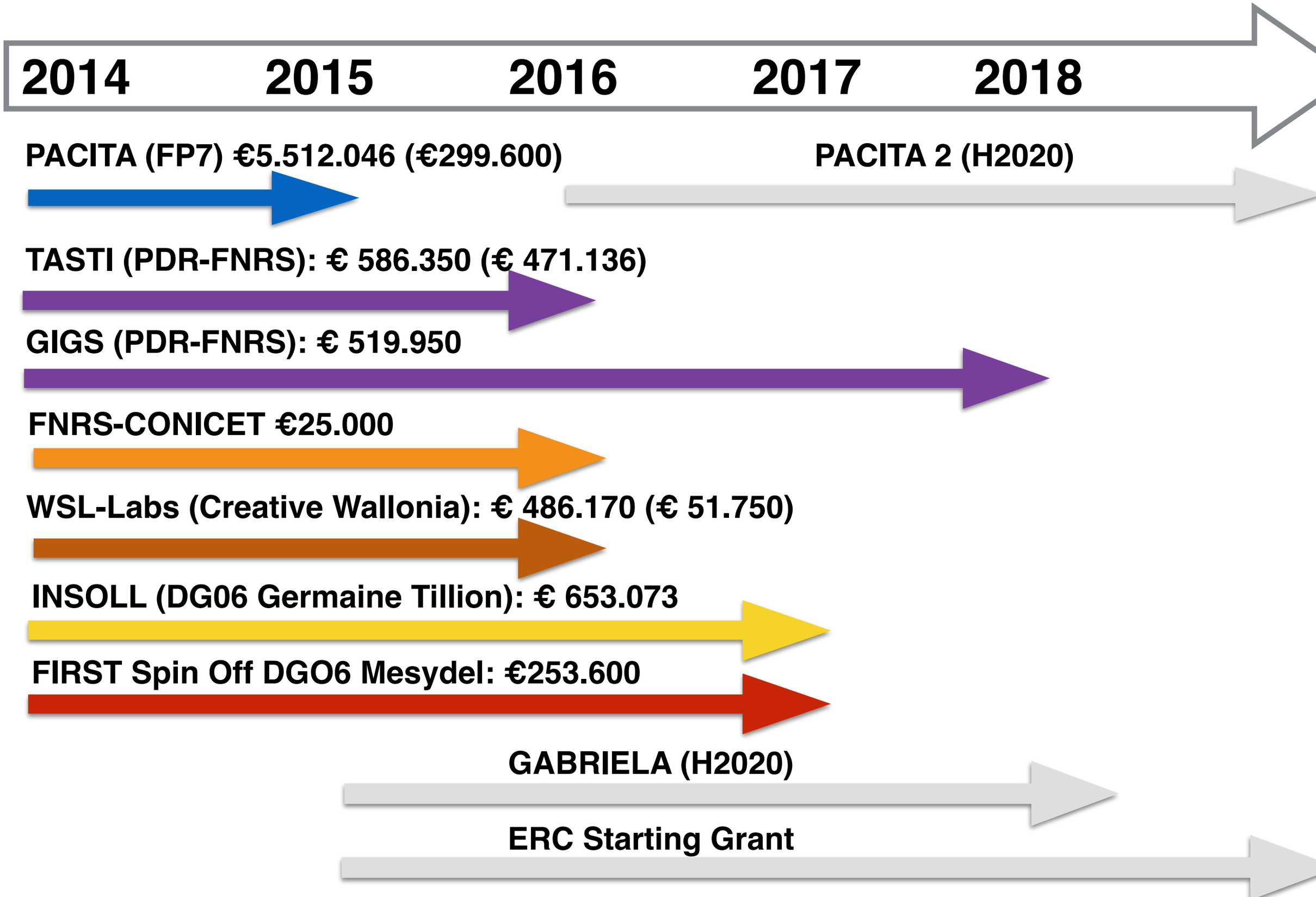
FNRS-MINCyT € 25.000 (€12.500)

WBI-CAPES (Brésil) €95.350 (€38.850)

PACITA (FP7) €5.512.046 (€299.600)

TASTI (PDR-FNRS): € 586.350 (471.136€)

FNRS CQ


2014
2015
2016
2017
2018
PACITA (FP7) €5.512.046 (€299.600)
PACITA 2 (H2020)
TASTI (PDR-FNRS): € 586.350 (€ 471.136)
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
GABRIELA (H2020)
ERC Starting Grant

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**