

# The future of research and innovation policies: Is the intermediate layer what we thought it would be?

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FUTURE OF SCIENCE AND TECHNOLOGY IN  
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# A foreword

- Why did we choose PRIME and then SPRI when considering renaming our ‘speciality’ to highlight:
  - the move from the world of science to the world of research
  - the inadequacy of the linear model
- Because it was difficult to name it RIP!

COULD WE / SHOULD WE  
LABEL A SIGNIFICANT SHARE OF ARIE’S WORK  
AS “POST-MODERN RIP”

# The focus



- Arie has made of repertoires an important concept for looking at practices - And Arie has his own repertoire
- In the policy field, Arie and his colleagues have brought two concepts – intermediate layer, implementation structures – that have driven to a different understanding of ‘research systems’ and their dynamics
- I thus wish to look at recent developments through these lenses and propose the following hypothesis:  
the core dynamics of the intermediate layer has not been via the addition of new processes (of debate and alignment) but rather (as proposed in 1988) by the reinforcement of ‘corporate actors’

# The intermediate layer in perspective (1)



- No specific article nor specific studies as such; but very central to analyses of ‘contextual transformations in contemporary science’ (1988), of transitions in the ‘research system’ (1990, 1996, 1998), of evolving research councils (1994, 2000)
- Located in a ‘research system’ approach with a permanent warning:  
*“Interdependencies define what is part of the system rather than standard items on a checklist. In stable situations interdependencies have crystallised out and a checklist approach is acceptable ... In times of change, the nature of interdependencies and boundaries evolve, and it is dangerous to use a standard classification” (1996)*

## The intermediate layer in perspective (2)



- No definite terminology, but a clear view with 2 dimensions
  - its ecology: institutions (the North way, e.g. institutionalised peer review) & ‘corporate actors’  
*‘the ecology of the intermediate layer has been important all along for the orientation of the research councils. Now the ecology is changing...’ (1994)*
  - its transformation processes: multiple, interacting, with complex aggregations shaping (or not) a given overall pattern of change

# The intermediate layer in perspective (3)



- Coupling both dimensions drives to a multiplication of entry points to study the dynamics of the intermediate layer:
  - the institutionalisation of new practices: peer review, technology assessment
  - changes in traditional actors, in particular research councils becoming 'independent bodies'
  - the emergence of new 'hard' actors, programmes being a lasting focus of analysis (but also driving to personal engagement)
  - new soft forms of governance, enabling coupling with society and embedding of hybrid fora

# The intermediate layer in perspective (4)



- A comment: Are multiple entries a reflection of Arie's will for a systemic view on the intermediate layer, or is there an underlying line of what matters 'here and now' in on-going changes?
- My impression inclines toward the second line: soft governance is what matters (see Arie's beautiful maps of emerging governance in nano)
- And my plea and hypothesis:
  - do not forget the 'corporate actors' in the intermediate layer
  - because the de facto core of PRI has been to reinforce them and to delegate them policymaking (that is actual choices and their implementation).

## 4+1 aspects in my tentative demonstration



- Follow on Arie's diversified entry points and (over)look at changes over the last decade in policies and their fostering / empowering of 'corporate actors'
  - the enlarged space of research councils and institutionalised peer review
  - the stream of university reforms and the growing strategic capabilities of rectors / presidents (and their governing boards)
  - the move toward indirect funding mechanisms and the de facto delegation of steering to large firms
  - a Marshallian rediscovery of the power of 'districts' (as an alternative to concentration)
  - plus a cynical view of public debate as a selection process of 'legitimate' NGO
- With a limitation: a focus on France, with some enlargement



# Funding agencies and institutionalised peer review



- Arie's 1994 point on research councils as not either a parliament of scientists or a government bureaucracy, but as independent bodies, getting their legitimation (both from the top and from the bottom) by peer review as the central allocation mechanism
- What have we witnessed?
  - **generalisation** to countries without such agencies (France, new member states, and now Spain) and EC with ERC
  - continued **professionalisation** (with ANR going as far as being ISO certified for its programming and selection processes)
  - in Arie's 5 scenarios (2000), nothing about the new modes\*, simply '**grafting on existing machines**' (in both directions: e.g. the increase of the responsive mode in France to 50% of an amount that tripled in 4 years)
  - **Institutionalisation** of project-based competition & peer review selection as central mechanisms: ANR is delegated operations for 19B of the 'investissements d'avenir' (2010-2011) by law!

\* Distributed research centre, strategic science market, grabber of floating proposals

# Empowering large firms

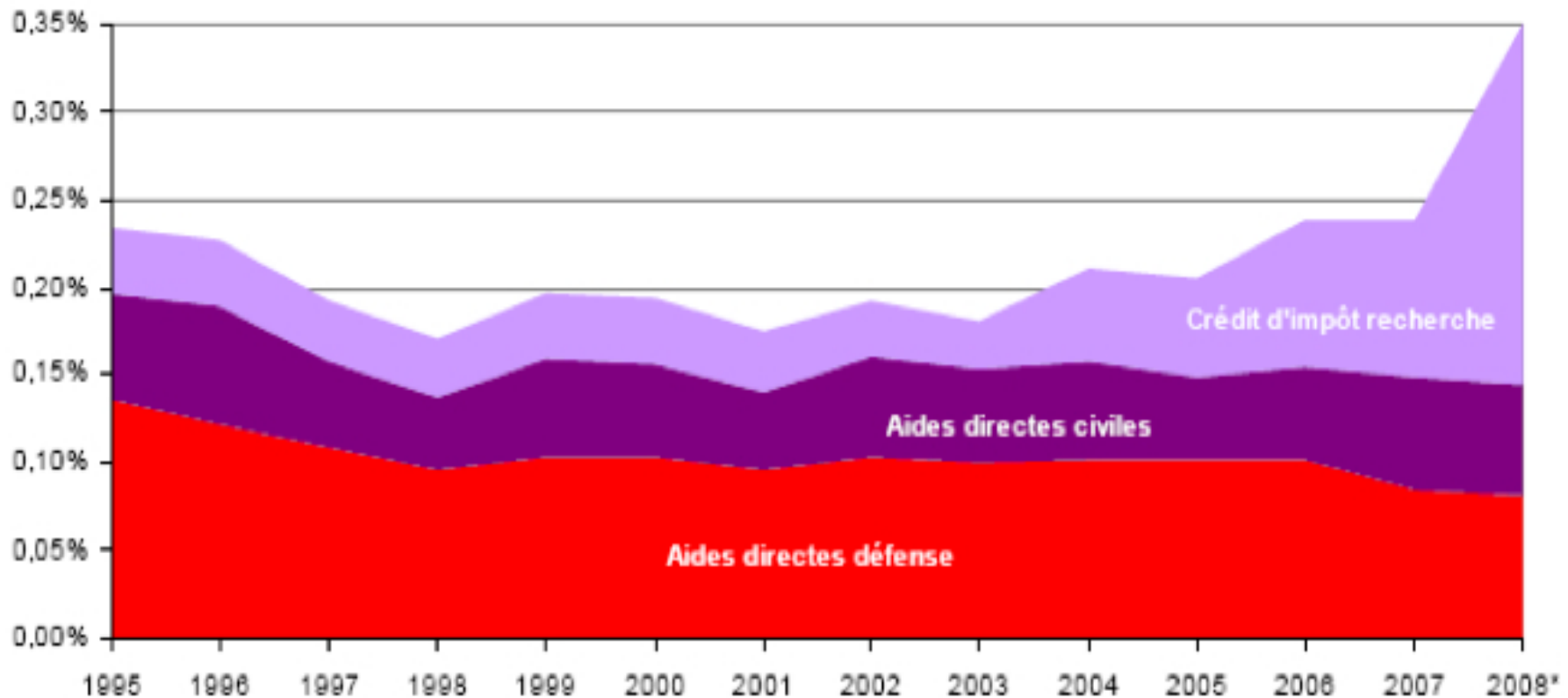


- Industry has never been a central focus of Arie's analyses, and thus not much reflection about their presence in the intermediate layer
- But less than 200 large firms do 50% of world industrial R&D (see the rise of targeted attractiveness policies by regions)
- But many national systems (especially in Nordic countries) depend on a few dominant firms
- In France, a tradition to take it up through large programmes and the construction of high-tech 'national champions' – most of them having become 'European champions' over the last 2 decades
- A complete reversal: from large programmes to tax credit
- What does this mean? A shift in industry influential players from those selected & nurtured by Government policy to those operating at world level

# France: a massive new tax credit



Large firms as main beneficiaries: independent SME (20%), independent ETI (9%) and large groups (over 5000 staff) (71%)



Source: Assemblée Nationale, 2010, Mission d'évaluation et de contrôle sur le crédit d'impôt recherche, doc N°2686

# Universities as growing corporate actors shaping the intermediate level



- A growing centrality in policies in most EU countries & the lasting stream of reforms / rankings as symbols of these changes
- With 2 aspects: growing role in the intermediate layer of representative bodies (e.g. EUA at EU level) /growing hierarchisation within countries (strong & weak actors, e.g. the UK)
- France as an illustration:
  - Bologna approach as empowering universities in shaping their curricula (via accreditation through an independent agency, AERES)
  - Creation of a new legal environment to rethink bottom-up their borders (PRES), to connect with the external world (foundations) and to manage themselves (2007 law on autonomy)
  - Progressive application of the 2001 law on public finance (LOLF) with consolidated budget, full management of their staff & ownership of their lands & buildings
  - Most new investments directed towards a subset of competing universities: plan Campus, Investissements d'avenir,



# New actors (1): clusters

- Remember Marshall: industrial districts as the alternative to vertical integration in large firms
- The explosion of clusters / districts / poles all over Europe
- Associated to a strong 'decentralisation'/'devolution' movement
- France as an illustration with poles de compétitivité
  - a small experiment (10 world level poles) to supporting collective RDI (3 types of poles, doubling anticipated investment, redirecting existing funding routes towards members of poles...)
  - 8 years later, look at their role in shaping regional policies but also national debates

## New Actors (2): NGO



- A cynical view of recent developments looking in France at the role of
  - patient associations (especially AFM – see work by Callon et Rabeharisoa)
  - recent debates, especially the so-called Grenelle debate on sustainable development
  - not speaking of what has happened in nanotechnology
- My hypothesis of their effects: a typical selection mechanism ‘à la Nelson & Winter’, creating new legitimate actors in policy-making processes

# Populating the intermediate layer



- A first conclusion: populating is first and foremost the inclusion of strong ‘corporate actors’ with their own strategic capabilities
  - agencies becoming ‘independent bodies’But also
  - large firms (as global players not nationally bounded)
  - ‘excellent’ research universities
  - new locally rooted ‘districts’ renewing the classical sector-based representation
  - and NGO (‘legitimated’ through organised public debates)
- A second conclusion: this populating movement is strongly associated (co-evolves) with changing PRI

# Populating the intermediate layer



- A strong consequence: policymaking processes with a limited number of strong actors does not work as a model based upon open, wide-ranging public debates.
- The implications are strong for public debates: being posited at both ends (in generating new legitimate actors, in circulating the underlying content of policies already adopted)
- This raises a new set of questions
  - What are the implications of this transformation of the intermediate layer on the direction of research systems?
  - What roles of new 'dispositifs' for embedding emerging technologies in society?
  - Should we revisit our approaches of RIP dynamics and effects?