Alternatives to peer review

novel approaches to research evaluation
Foundation for Polish Science

the largest non-governmental organization funding research in Poland

• Created in 1991
• Investing in PEOPLE
• Funding based on SCIENTIFIC EXCELLENCE
• Annual spending (2013–2015) around 20 mln
• HARD MONEY principle
Peer review in context

1. Well-known weaknesses of the system (subjective, conservative, discriminating, biased)

2. Polish research system

3. Bibliometric indicators

4. Limited funding
Context 2: Polish research system

Until recently money for research distributed mostly on administrative basis (irregardless of the research quality)

- Foundation for Polish Science – 1991
- The National Centre for Research and Development – 2009
- The National Science Centre – 2010
- Performance-based criteria for institutional funding –
Context 2: Polish research system

• 50% of the Polish scientific output comes from mere 10% of Polish researchers

• 43% of Polish researchers has not published anything for the last 3 years

• 26% of Polish professors have not applied for grants for the last 5 years

• The more dynamic research career, the more activity in securing grants. Younger professors more often apply for grants seeking
Context 3: Bibliometric indicators – how we use them

Bibliometric analysis of FNP’s laureates

• **Main questions:**
  – How do the FNP grantees perform compared to Poland and other EU28 countries, and other relevant countries?
  – What are the thematic strengths of FNP supported research?

• **Sample:** 543 laureates of different funding schemes

• Center for Science and Technology Studies (CWTS)
Context 3: Bibliometric indicators – FNP’s creed

Negative response of our researchers to the bibliometric analysis (inspite of their excellent results)

Foundation does not apply bibliometrics to select and evaluate individual researchers

Peer-review approach with scientific excellence as the most important criterion in awarding support

2014: San Francisco Declaration
Context 3: Bibliometric indicators – not an alternative to peer review

- mechanistic, reductionistic
- very tricky and can be misleading
- not applicable to assessment of individual achievements
- depicts the past
- takes the ability to judge science away from researchers
Context 3: Bibliometric indicators – 

*qualitative study of FNP laureates (2013–15)*

- Research cannot be reduced to a single indicator
  **But:** successful research is about measurable effects

- Indicators can be misleading
  **But:** treated carefully indicators are better than no objective assessment (vide: Polish research system)

- When talking about other scientists, researchers themselves often use bibliometric indicators. The same applies to reviewers

• **Main question:** how do Polish senior researchers perceive the current funding system (and the role of FNP)

• Survey sent to **5832 Polish professors**, up to 70 years old, working in research institutions, available email addresses

• **Return:** 678 surveys – 12%
Context 4: limited funding – quantitative study of Polish professors cont.

• Over 50% declare they had to abort a promising research project because they had no funding

• They mostly blame the research funding system (insufficient institutional funding and low success rates in grant competition)

• Low success rate = lottery or conspiracy. Over 25% feel they had been wronged by the system. 7% even see the system as a conspiracy.

• Grant system and peer review are hold responsible for exclusion of many researchers

• Grant system is based on subjective (mistaken, unfair) opinions (peer review)
Peer review – how to enhance its quality?

• Careful choice of reviewers (over 5,000 reviewers in our database)

• Quality of reviews

• Foreign reviewers (2016): 80%

• Multilevel process (panel → written reviews → panel)

• Number of reviewers/panelists per application (2016): 4–12

• Benefit of a doubt
Peer review – European Charter for researchers from a funder’s perspective

- Transparency
- Reviewers’ responsibility (anonymous reviews?)
- Feedback/discussion with panels
- Rebuttals
Improving of peer review – barriers

• **Time** (How long can the process take? How much time can we allow for discussions, rebuttals)

• **Cost** (how much can you spend on reviews? Should the quality of review depend upon the value of funding?)

• **Reviewers fatigue** (where is the trade-off between having a perfect review and not having it at all)
Evolution of peer review – new challenges

New expectations of research and researchers
- Socio-economic impact of research
- Public engagement

- new criteria in research funding
- new stakeholders
- New selection mechanisms
Thank you for your attention!

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