Forskningsrådet

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Peer review and alternative review methods

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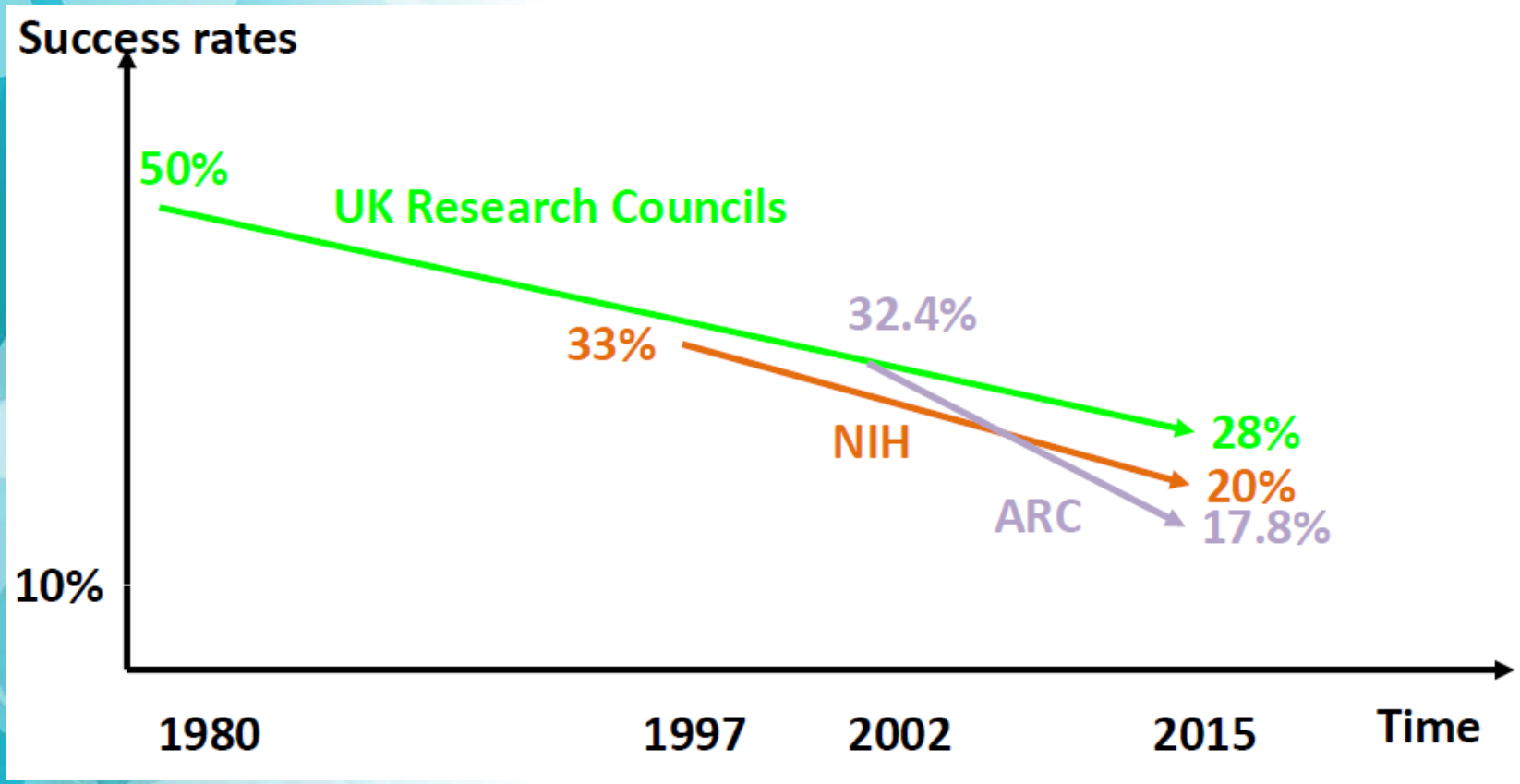

Source: Gläser 2016


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"When proposals are abundant and money is scarce, […] a large number of proposals are rejected that are statistically indistinguishable from an equal number accepted"
Thorngate (2002)

«Ample budgets give leeway for innovative/risky projects. Tight budgets tend to strenghten established research."

Langfeldt (2001)

Change needed

- Improve ability to identify and fund groundbreaking research
- Improve efficiency
- Improve reliability

Improve efficiency

- Introduce restrictive measures
  - Constraints on possibility to re-apply
  - Institutional-level sifting
- Benefits:
  - Improved success rates
  - Higher quality applications
- Risks:
  - Transfer of peer review effort into universities
  - May lead to greater conservatism in proposal submission
  - Could compromise the ability to fund research in a timely manner

Improve efficiency

- Reduce restrictions
  - Eliminate grant deadlines
- Benefits:
  - Improved success rates
  - Higher quality applications
- Risks:
  - None apparent

Improve efficiency

Overall Competition Success Rate Scenario (%)	C (Reject without further review)	B (Further review required)	A (Success without further review)
5	75	25	0
15	60	40	0
25	45	50	5
35	30	60	10
50	15	70	15

Source: Snell (2015)

Improve reliability

Use panels of sufficient size

- Decisions will vary widely with the number of reviewers
- Mayo et al (2006):“Ten reviewers provided optimal consistency
- Marsh et al (2008): “require at least 6 assessors per proposal to achieve more acceptable reliability”
- Snell (2015):“Five reviewers per application represents a practical trade-off”
- International peer review expert panel (2017): “Applications should be assigned to a minimum of five individuals”
- ESF (2011): “provide at least three expert assessments before a final decision is made”

Improve reliability

Use diverse panels

	Cognitive constraints	Interests
Scholarly/ professional bias	*A: The constraints of a professional platform:* Preconceptions of good and valuable research. *Selective perceptions* = looking through 'the glasses' of your *'school'*/scholarly view-point/profession.[57]	*B: Research interests:* Taking effects on economic and political standing of the field/research area into con-sideration.[58] *Nepotism* = helping 'heirs' or other colleagues because of *'school'*/scholarly viewpoint or research topic.
Non-professional/ personal bias	*C: General or personal cognitive constraints:* Sub-optimal thoroughness and information seeking. *Selective perceptions* = dis-regarding information due to routines/limited capacity for handling information.[59]	*D: Personal interests:* Taking effects on personal situation or situation of friends, partners or competitors into consideration. *Nepotism* = helping colleagues because of friendship.

Improve reliability

Make the most of broad and diverse panels

- Avoid the traditional method of assigning the application to two main reviewers
  - Amplifies negative group dynamics
  - Increases the impact of extreme reviews
- Ensure well structured, detailed discussions
  - Limits sampling bias in favor of shared information
  - Ensures a more equal treatment of applications
- Ensure sufficient time for discussions
  - Limits groupthink
  - Limits drive for cognitive closure

Improve ability to fund groundbreaking research

- Use broad, heterogeneous panels
- Avoid rating scales that are too fine-grained
- Avoid consensus-based decisions
- Avoid traditional peer review althogether

Alternatives to peer review

- Single person selection
  - DARPA
  - NSF small grants for exploratory research
- Sandpit selection

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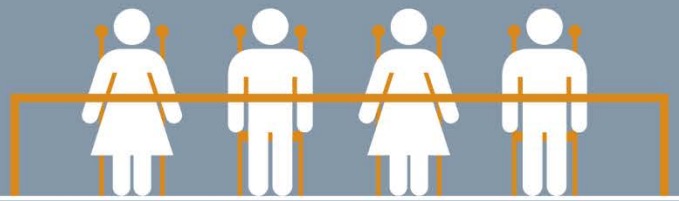

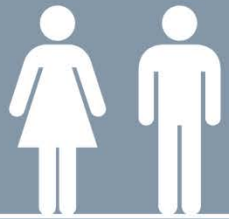

Utvelgelse

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