

A view from below: Perceived 'pressures' towards responsible research and changes in research careers

Nelius Boshoff

CREST, Stellenbosch University, South Africa

SUPER MoRRI Regional Webinar: Africa Session

28 April 2021

Explanation of RRI in the South African White Paper on Science, Technology and Innovation (2019)

2.2.9 Instilling a Responsible Research and Innovation approach to support environmental sustainability and ethical STI

STI can help build a basis for a knowledge-based society and a healthy economy, but it can also cause harm. South Africans should develop a shared normative understanding of what is appropriate for our reality. A South African RRI approach would rest on the following pillars, based on the European Union's RRI framework: (i) engagement of all societal actors throughout the process of framing societal challenges and developing joint solutions; (ii) addressing racial and gender transformation to unlock the full potential of South African society; (iii) improving the educational and skills profile of South Africans; (iv) increasing open access to STI; (v) maintaining a high level of ethics in terms of the relevance and acceptability of STI to society and environmental sustainability; and (vi) developing the required governance framework to drive the RRI agenda across the NSI.

South African researchers perceive aspects of RRI as different sets of pressures

- Pressures to transform the research workforce
 - Profiles of postgraduate students (emerging researchers)
 - Profiles of research teams and research collaborators
- Pressures for research-stakeholder engagement and impact, e.g.
 - Engagements with business/industry, government, communities, etc.
 - Contribution to people's lives, policy, economy, environment
 - Orientation towards SDGs
- Pressures to 'open up' research, e.g.
 - Data repositories
- Pressures to satisfy institutional research compliance requirements, e.g.
 - Research ethics
 - Institutional screening of project applications
 - Responsibility to publish in non-predatory journal outlets
- Pressures to satisfy institutional performance appraisal requirements

**Perceived as
funding
pressures**

**Perceived as
organisational
(e.g. university)
pressures**

SUMMARY OF STUDENTS PER LEVEL										
Supported Students/Researcher/Other		Black		Coloured		Indian		White		
Level	Total	Female	Male	Female	Male	Female	Male	Female	Male	
Other student not supported by the NRF		Black		Coloured		Indian		White		
Level	Total	Female	Male	Female	Male	Female	Male	Female	Male	
Student supervised by other members on the project			Black		Coloured		Indian		White	
Level	Total	Female	Male	Female	Male	Female	Male	Female	Male	

NRF: Example of reporting on Science Engagement and Impact

Instructions

- For the purposes of this application/report, the use of the overarching term science engagement is inclusive of all aspects of public engagement with science, science communication, science literacy as well as science outreach and awareness. It includes all participation by targeted groups of society in a programme aimed at generating mutual understanding and responses to science, including but not limited to awareness, accumulation of knowledge, enjoyment, opinion formulation and scientific literacy.
- It also embraces a broad understanding of "science" and "the sciences", encompassing systematic knowledge spanning natural and physical sciences, engineering sciences, medical sciences, agricultural sciences, mathematics, social sciences and humanities, technology, all aspects of the innovation chain and indigenous knowledge.
- Broader impact considers the impact of the activities/project on the public and/or targeted participants in terms of knowledge and/or awareness, behavioural and/or attitudinal change, skills acquisition etc.
- For more information, [click here](#).

Explanation of Categories

Category	Objectives	Delivery mode and content	Engagement experiences	Intended audience	Actual number reached	Broader impact	Edit	Delete
----------	------------	---------------------------	------------------------	-------------------	-----------------------	----------------	------	--------

Instructions

- "Impact" refers to both the tangible and intangible influence derived and/or caused by the research outcomes/outputs. "Impact" statements indicate what the researcher hopes to achieve, without introducing any bias, through his/her research (i.e. impact on Global Change and/or Bio-economy, etc.).

Winetech: Example of Science Engagement and Impact requirements

23. The results of all WINETECH funded research projects must be:

1. presented to the end-users in the industry (Information days, Conferences)
2. published in at least one scientific journal (Support to SAJEV is recommended)
3. published in one popular magazine (Winetech Technical/Wineland magazine).

24. Researchers to liaise with the WINETECH Knowledge Transfer specialists before presenting WINETECH funded work to industry to ensure scientific communication is translated into a clear take-home message for improved engagement.

10. PROJECT OUTCOME AND IMPACT

New Knowledge	Benefits Supply Chain	Direct Grower Application	Direct Packhouse/Winery/Cellar Application	Other

Other is:

.....

Argument

- The perceived pressures (and the power of their ‘controls’/‘checks’) have potential to modify the ‘collective career scripts’ of researchers
- By modifying the research career scripts, new forms of research careers can emerge, better tailored to address the needs of South African society as envisaged in policy documents?
- Next: What is meant by ‘career script’?

The idea of a career script

**Script =
interpretive
scheme**

Interpretive schemes are “specific cognitive structures that provide knowledge about situations and proven solutions for typical problems” (p .937)

**Collective script = collective
interpretive scheme that
encodes appropriate
behaviour in a given context**

**Career script = collective
script that encodes sequences
of stages in a career and
decisions that produce these
sequences**

Collective scripts, of which career scripts are examples, “mediate between institutions [rules and norms] and individual actions because they describe patterns emerging from individual actions that are shaped by these institutions” (p. 938)

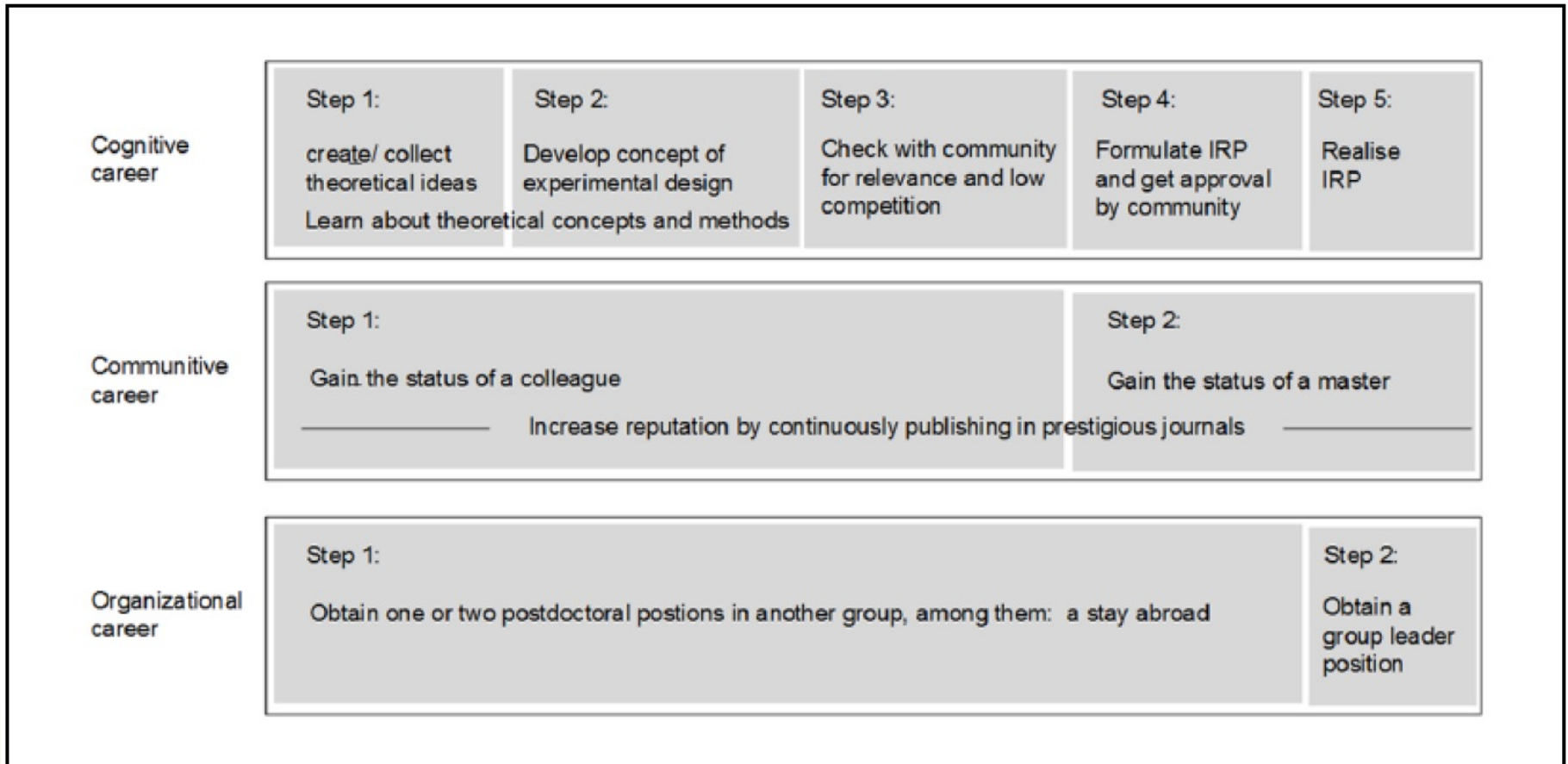
Three academic careers and their associated career scripts

	Description of career	Content of career script
Cognitive career	Sequence of thematically interconnected research processes	Dynamics of originality, relevance, durability and thematic breadth of research
Community career	Sequence of statutes and associated work roles in one's scientific community	Accumulation of reputation and sequence of statuses in one's scientific community
Organizational career	Sequence of organizational positions as sets of rather unspecific work roles	Sequence of organizational positions which support a stable academic career and success in all three careers

Source: Laudel, G., Bielick, J. & Gläser, J. 2019. 'Ultimately the question always is: "What do I have to do to do it right?"' Scripts as explanatory factors of career decisions. *Human Relations*, 72(5), 932-961. (Table 1, p. 939)

Example of a specific career script

(for experimental atomic and molecular optics physic)



Some possible changes in research career scripts based on RRI ‘pressures’

Community career	Cognitive career	Organisational career
<p>Change in meaning of ‘community’ – no longer scientific community only?</p> <p>How is reputation gained in such an expanded community – no longer through publication in prestigious journals only?</p> <p>New forms of ‘quality’ in research-related work?</p>	<p>Expanded community and engagement with expanded community will set research agendas?</p> <p>Perceived ‘hassle’ of research ethics clearance facilitating a shift towards research topics and research approaches that will ‘easily pass’ ethics clearance?</p>	<p>New performance appraisal criteria for promotion (e.g. criteria for recognition of social impact)?</p>

Question

- In what ways are the practices and careers of (university) researchers expected to change as a result of RRI and its compliance/evaluation/assessment?

Thank you
