ASTRON

The academic life: pros and cons

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DARA
DEVELOPMENT IN AFRICA WITH RADIO ASTRONOMY

Long road, but worth it?

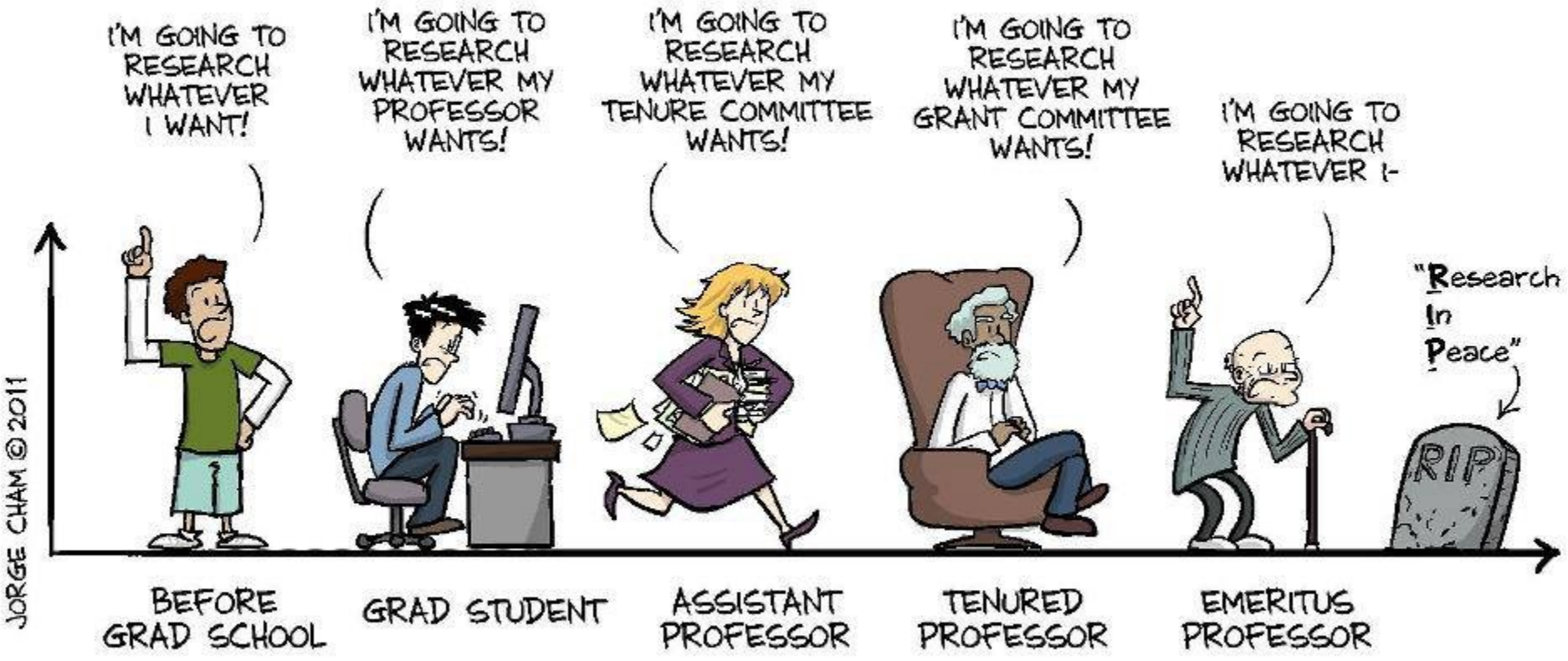
› Academic lifestyle is unique and one that only a very number of people get to experience. Nearly every lifestyle feature can be a pro or con depending on the person

Career Path

› What I first going to focus on is the standard academic career path from a PhD. Note that this is Western European/North American/Australian focused

› I will try to point out the differences in the African context

THE EVOLUTION OF INTELLECTUAL FREEDOM



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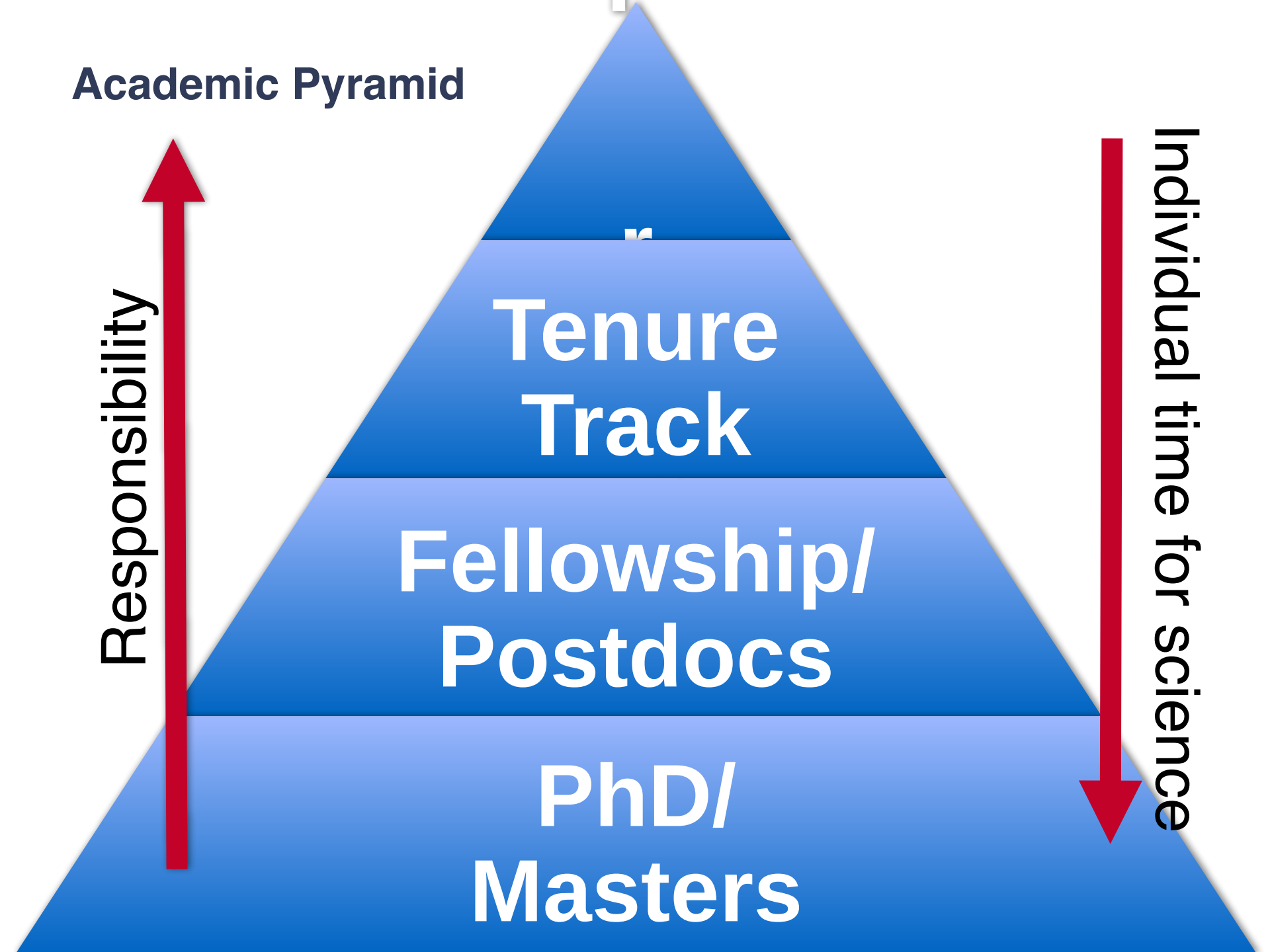

Academic Pyramid
Responsibility
Individual time for science
Tenure Track
Fellowship/ Postdocs
PhD/ Masters

ACADEMIC CAREER PATHWAY

- Professor Level
- Associate Professor Level
- Senior Research Fellow Level
- Research Fellow Level
- Student Level

ERC Grants

FP7 Cooperation Grant (as lead)

Centre Grants

Professorial Fellowship Schemes

Large Grants

FP7 Cooperation Grant (as partner)

Standard Grant

Priority Network Grants

Research Council Funding

Future Leaders Schemes

Seminar Competitions

Postdoctoral Fellowship

Networking Grant

Small Grant Schemes

Charity Funding Schemes

EU Marie Curie Fellowship

Research Masters

PhD Studentship

Conference Grant

Travel Grant

Aspects of an academic lifestyle

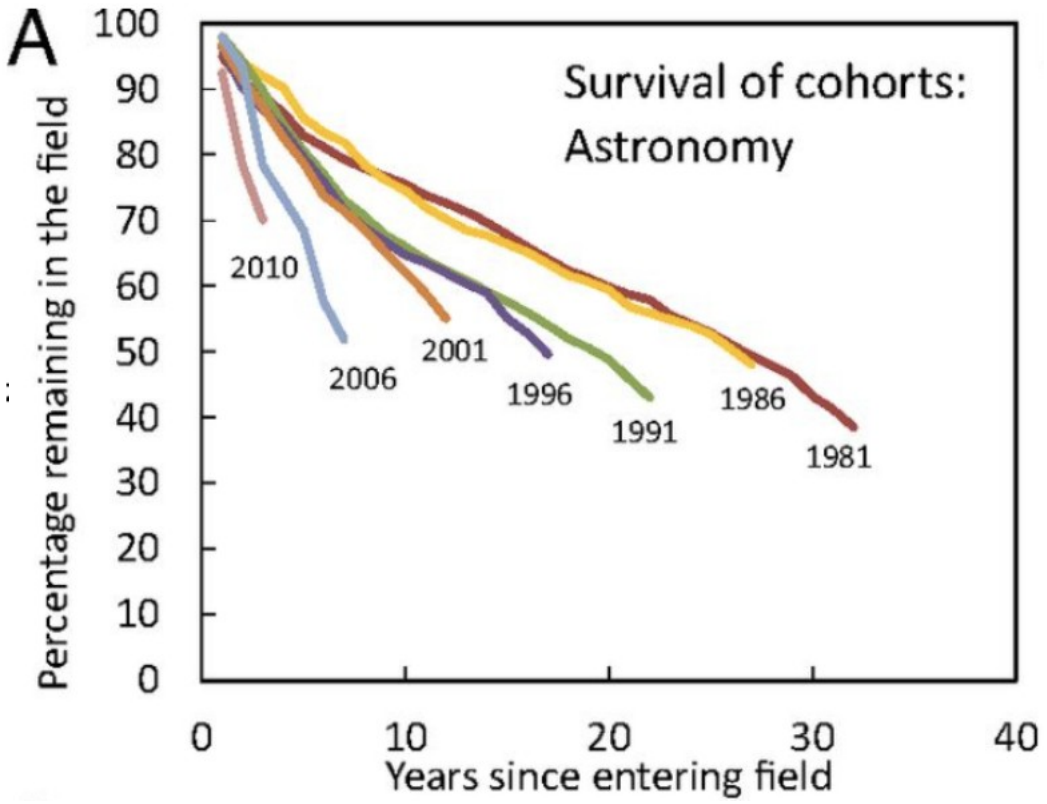
Lifestyle Factor	Pro	Con
Flexible Lifestyle	Free range over hours worked, self-imposed goals etc	Lack of clear boundaries/directions, (can) work 24/7
Extensive Travel	Exploring the world!	Missing family/friend events, routine disruption
Living in other countries	Get to intimately know another culture(s)	Not in own culture, friend group/family disruption
Money	Middle (even upper-middle) class in most countries. Tech. perks	Not as much as you could earn outside academia (mostly)
Friends all over the globe	Always a place to stay when travelling	Friends not close when you need them
White, Male, English-speaking dominated	N/A (built-in feature)	Difficult as a minority (but slowly changing)
Career Uncertainty	None (unless you like living on the edge!)	Possible you will have to shift careers completely


For the
pursuit of higher knowledge

Leaving the field

› As high as 30% of PhDs leave academia at the end of their study
› Constant trickle of people leaving after the PhD. No clear bottle neck but the jump from post-doc to tenure track is the rate-limiting step
› Getting first post-doc not hard but fellowships (which increase chance of staying in the field) are.

Flaherty (2018)



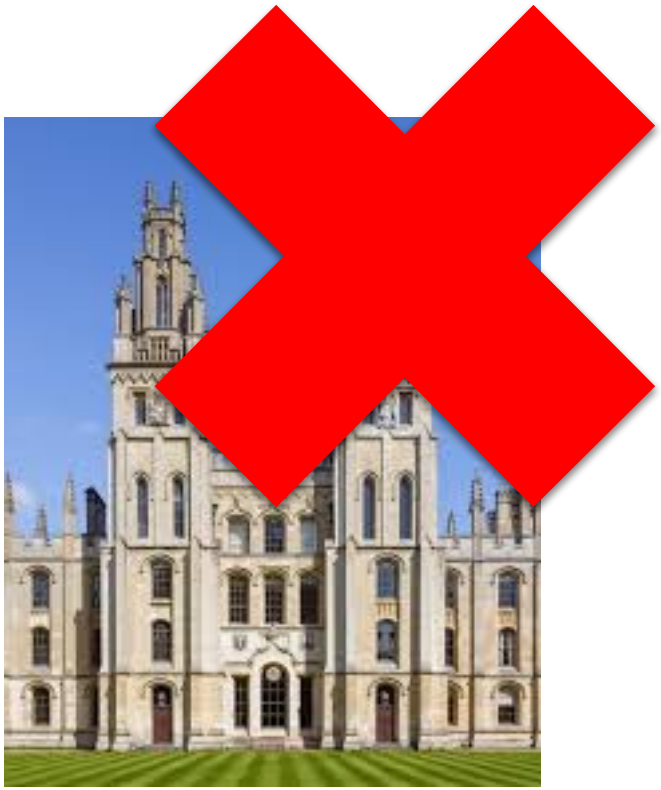
Milojević et al. (2018)

Skills an astronomy PhD provides

- Unemployment of Astro PhDs is negligible
- An astronomy PhD provides some high-level skills that are very attractive to other sectors:
  - Data/statisical analysis (especially with ‘big data’) and familiarity
  - Analytical thinking
  - Critical thinking
  - Ability to communicate complex ideas simply
  - Self-direction/motivation
  - Computational knowledge
  - Getting a PhD demonstrates you can achieve a long-term difficult task

Options outside academia

- Examples of sectors outside of academia that people go into (vary depending on focus of PhD too):
  - Government
  - Data Science sector (e.g. Google, Atalassian)
  - Consultancy (e.g. Mackenzie)
  - Start-ups (often tech based)
  - Banks (quant skills)
  - Insurance companies (quant skills again)
  - Patent Office
  - Sport science
  - Web development
  - Medical imaging
  - Space tech sector



Getting a Masters/PhD position

- Prospective professors will look for the following skills (varies professor to professor how they weight them)
  - Coding ability
  - Statistical knowledge
  - Extensive experience/degree with physics and exposure to astronomy
  - Good writing/communication skills
  - Good time/expectation management

Remember that they do not want to take on a risk, so emphasising your proficiency of general skills (through interactions) is a big positive

Maximising your chance a Masters/PhD position

› Building on the skills mentioned before, a professor will look closely at:

1. Research experience (such as DARA)
2. Reference letter and whether they know them
3. Research potential/original thinking in statements
4. Grades (meet the bar at least, no fails etc)

› I recommend to email prospective professors. Star strongly about who you are, why you are contacting them (say their research area interests you, do a bit of time researching them and their science) and spend time composing --> if the email is difficult to read it will more likely be canned (viewed as too risky).

› What time of year to apply? Varies – in the Northern Hemisphere is it usually October/November (same for Australia). Check the job registry but pretty incomplete for Masters/PhD (demo).

Conclusions and tips

› Academia is a great career if you go in eyes wide open to the potential pro's and con's

› A PhD in astronomy is never a waste – you add to the knowledge of humankind and come away with some very marketable skills

› Jack and I are here to help you find positions (through reference letters and advice) if you want (callingham@astron.nl and jack.f.radcliffe@gmail.com)