Higher Education: Myths and Reality

Department of Computer Science and Engineering,
Indian Institute of Technology, Bombay

March 2021

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- It will address questions such as following
  - What is the role and relevance of higher education?
  - What are the criteria to be considered while opting for higher education?
  - What are some common myths and realities about higher education

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  - I will touch upon MBA at some places in the talk
- The other options are not unnatural or undesirable

  I am not the right person to talk about them

Outline

- The spectrum of higher education
- Planning for higher education
- Life after higher education
- Conclusions

Part 1

The Spectrum of Higher Education

The Relevance of Higher Education

- Strengthening your technical skills
  - Deeper understanding of work area

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The Spectrum of Higher Education Programmes: Pedagogy

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MS by course work

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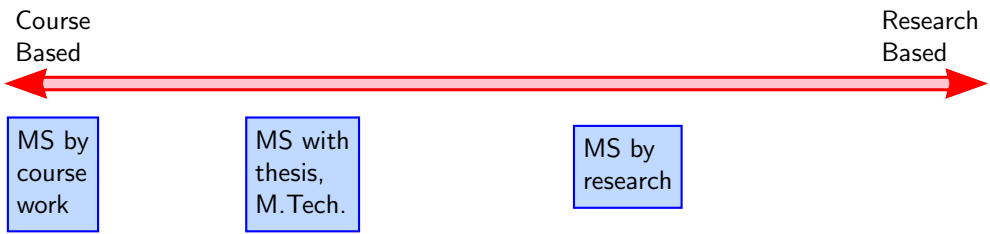

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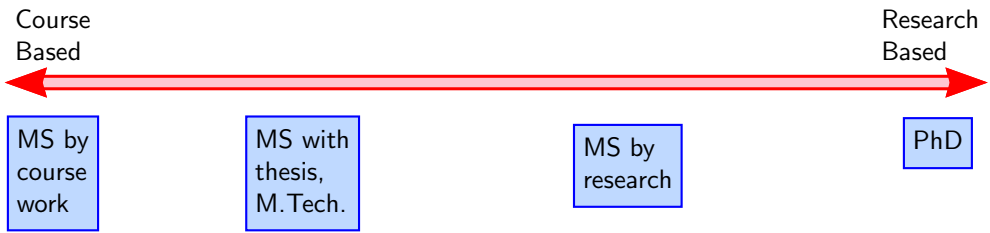

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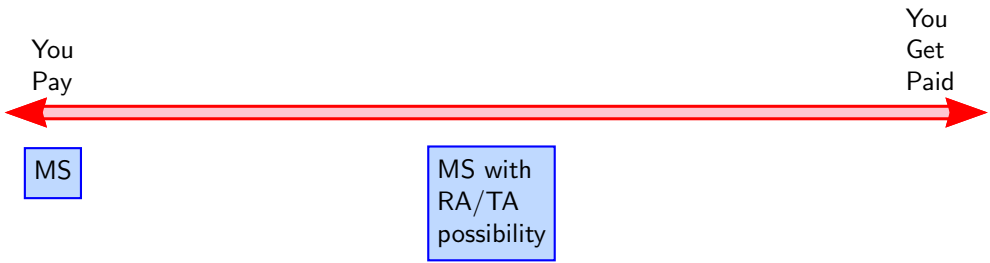

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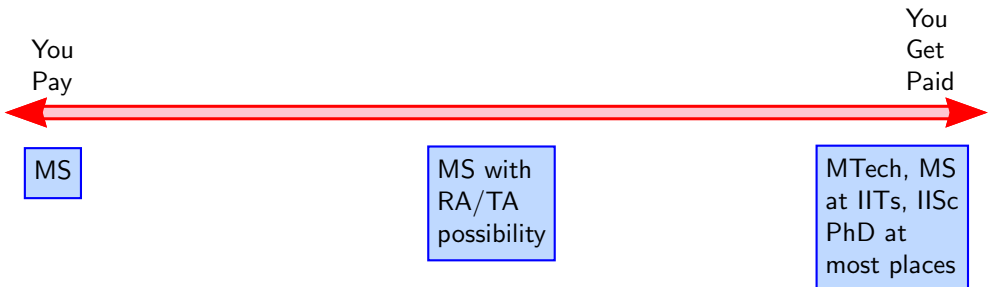

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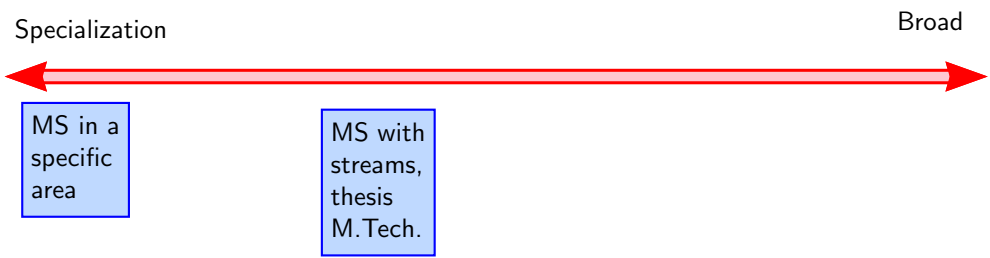

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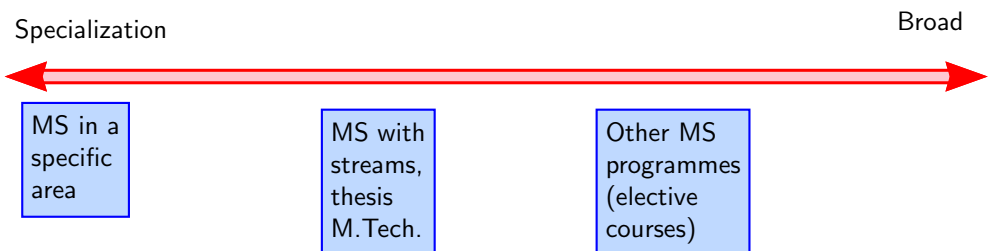

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Part 2

Planning for Higher Education

Criteria of Admission

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	Avoid publishing in predatory journals	More critical for PhD

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- Q. Would I get industry jobs after Ph.D.? Or do I have openings only in academia?
  - Many companies have a thriving research division: Microsoft, IBM, Google, Intel, Facebook, Amazon, Uber, TCS etc.
  - Many other companies welcome PhDs and consider PhD as a value addition
  - In general, specific positions for PhDs are much fewer in industry than other positions

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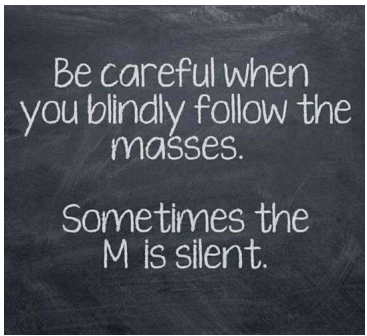

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- If you have done something well, there is always a good chance that you will be useful

Find Your Ikigai

Image Credit: Downloaded from internet

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  - A case for suitability of the background for some other area needs to be made
    The process of having gone through PhD can be useful in exploring other areas too
  - People are known to switch areas over time even after PhD

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The beauty of an area doesn't matter unless it resonates with you within!

It's a joint discovery of an area and yourself

Don't look at them in isolation from each other

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The moral of the story

Do your homework on why they should be interested in responding to you

No chance unless you sound authentic

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  - What is your dream about it
- The moral of the story
  - Do a lot of soul-searching, be brutally honest in convincing yourself
  - Use it as a tool of self-discovery

Choosing an Institute of Higher Learning

- More critical for PhD, less so for Masters
  - Any of the good universities is good enough for Masters
  - A rank of 20 is not much different from a rank of 50 for Masters
  - What may vary is alumni network and it may matter if you wish to start a company

  So choose what seems closest to your interests and finances

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- For PhD
  - Your Interest
  - Active research group with good focus
  - How much time does your advisor have for you
  - How much interest does your advisor have in your project
  - If other things match, ranking may not matter much

Do I have to go to US for Higher Education?

Not necessarily

- Europe offers equally good options
  - UK, France, Germany, Netherlands, Switzerland, Austria, Sweden, Denmark
  - No tuition fees in Germany, UK is expensive with very little funding for outside people
- India offers equally good options
  - IITs, IISc, CMI, IMSc, TIFR, IIITs
  - IIMs for MBA
  - Most Engg/CS institutions need GATE/JEST, interviews
  - Most places offer generous scholarship
  - Very good placements

Part 3

Life After Higher Education

Research in Industry Vs. Research in Academia

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- Research in academia is driven by an idea

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  - Needs to combine results of many idea driven research efforts
  - Must work with a series of well-defined short term goals
- Research in academia is driven by an idea
  - Typically not bound by a particular product
  - Can work with ill-defined long terms goals
  - Deliverables exist but of a different nature
  - Deadlines are usually as strict

What Does a Job in Academia Involve?

Assumption: Post-PhD jobs in prestigious institutes of higher learning

What Does a Job in Academia Involve?

- Teaching
- Research
- Administration
- Extension and outreach activities

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  - Working on research problems of interest, publishing papers
  - Guiding PhD and Masters students
  - Funded research (for industry as well as government), Providing consultancy
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  - Working on research problems of interest, publishing papers
  - Guiding PhD and Masters students
  - Funded research (for industry as well as government), Providing consultancy
- Administration
- Extension and outreach activities
  - Serving on Board of Governors, Board of Studies, Technology advisory boards,
  - PhD examiners, conference PCs, reviewing papers, giving talks, influencing policy decisions through popular articles

What Does a Job in Academia Involve?

- Teaching
  - Teaching courses, guiding students for projects
  - Pioneering new teaching material, new teaching methodologies for specific subjects
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onsultancy

Initially, most effort is spent on research

When you reach a steady state, mix and match as per your liking

Do the minimal quantum in any one and focus on others

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Interaction with curious, energetic, young persons keeps an academic young!

Industry Vs Academic Jobs: Myths and Reality

- We are considering jobs after higher education
  - In better known companies and institutions of higher learning

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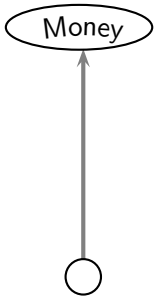
Industry Vs Academic Jobs: Myths and Reality

- We are considering jobs after higher education
  - In better known companies and institutions of higher learning
  - Time and effort for entry are usually different
- We compare the two by creating a multi-dimensional spectrum of value addition
  - Identify relevant parameters of comparison
  - Create a different dimension for each parameter
  - Indicate the magnitude of possible value addition along each dimension

Industry Vs Academic Jobs: Myths and Reality

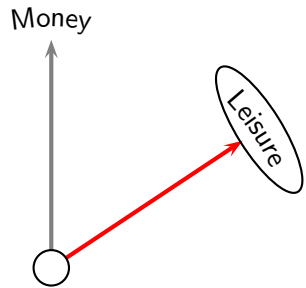
Money earned brings in financial security which is essential



Industry Vs Academic Jobs: Myths and Reality

Leisure or free time is essential to refresh and recharge to get back to work

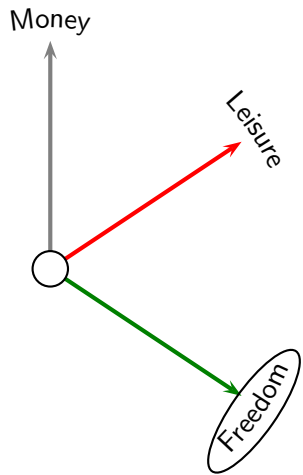
It is as important as sleep



Industry Vs Academic Jobs: Myths and Reality

Freedom to do what one likes to do is a great motivator

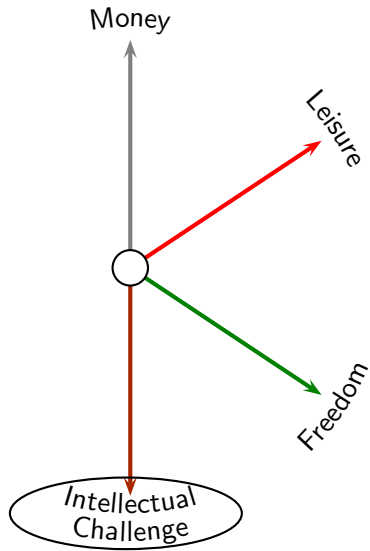
It enables going the extra mile



Industry Vs Academic Jobs: Myths and Reality

Intellectual challenge triggers deep thinking and sharpens intellectual abilities

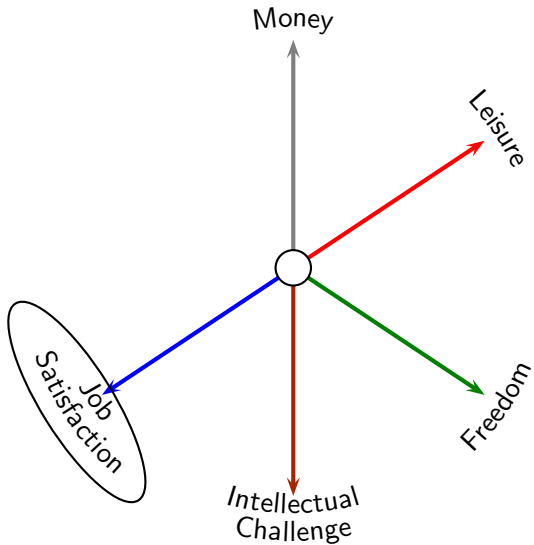
If there is no challenge, boredom sets in lowering the performance



Industry Vs Academic Jobs: Myths and Reality

Job satisfaction gives meaning and purpose to life

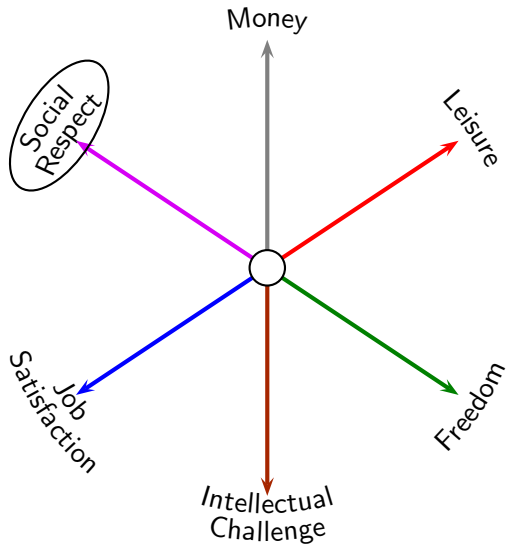
It facilitates perseverance and allows overcoming frustrations



Industry Vs Academic Jobs: Myths and Reality

Social respect and prestige add dignity to life and bring in the "feel good" factor

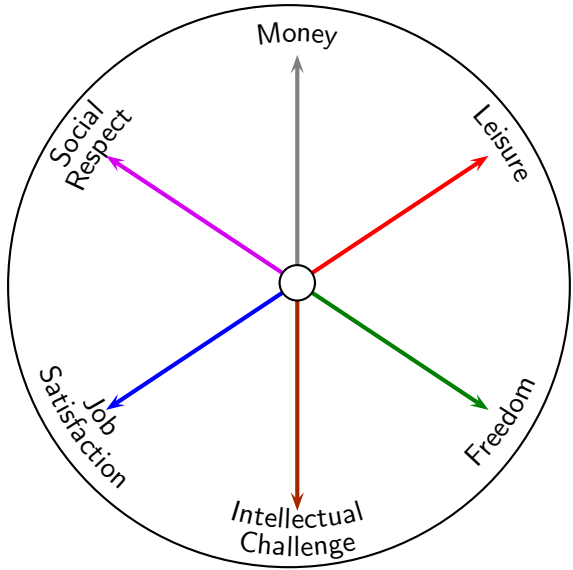
This feel good factor motivates people to continue doing good things



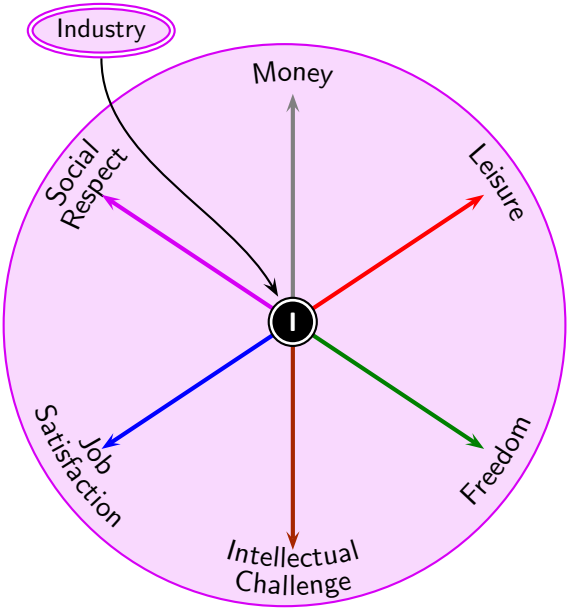
Industry Vs Academic Jobs: Myths and Reality

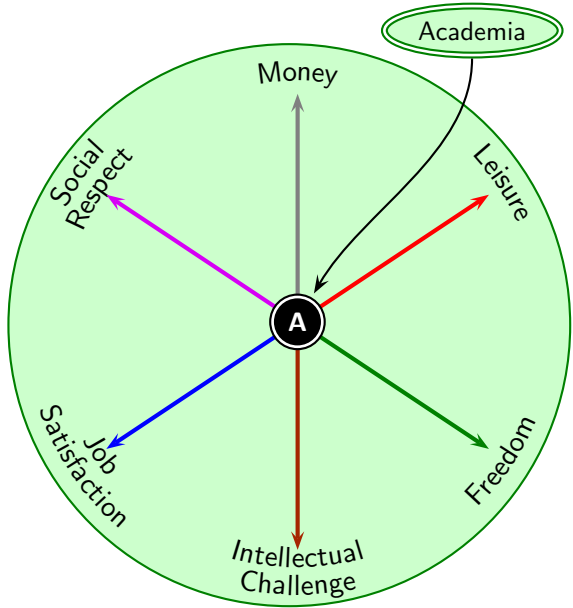
We now compare jobs in industry and academia along the chosen parameters using this framework

We mark a position on each axis to indicate the magnitude of the possible value addition along the parameter

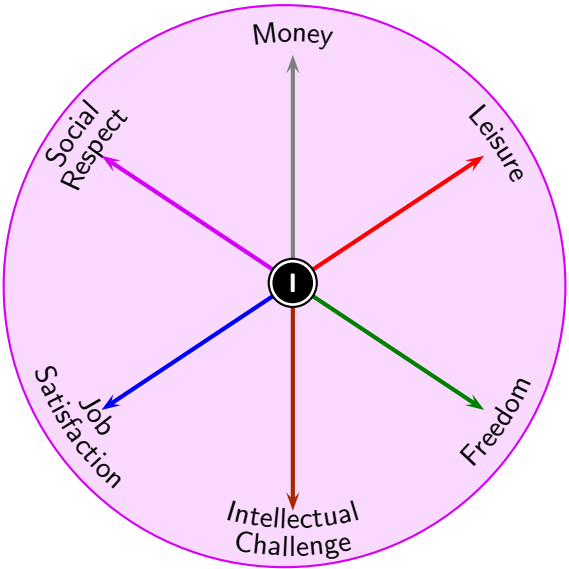


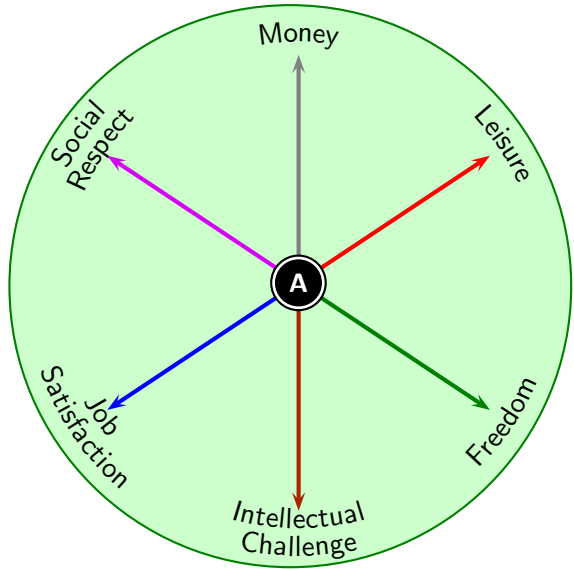
Industry Vs Academic Jobs: Myths and Reality





Industry Vs Academic Jobs: Myths and Reality





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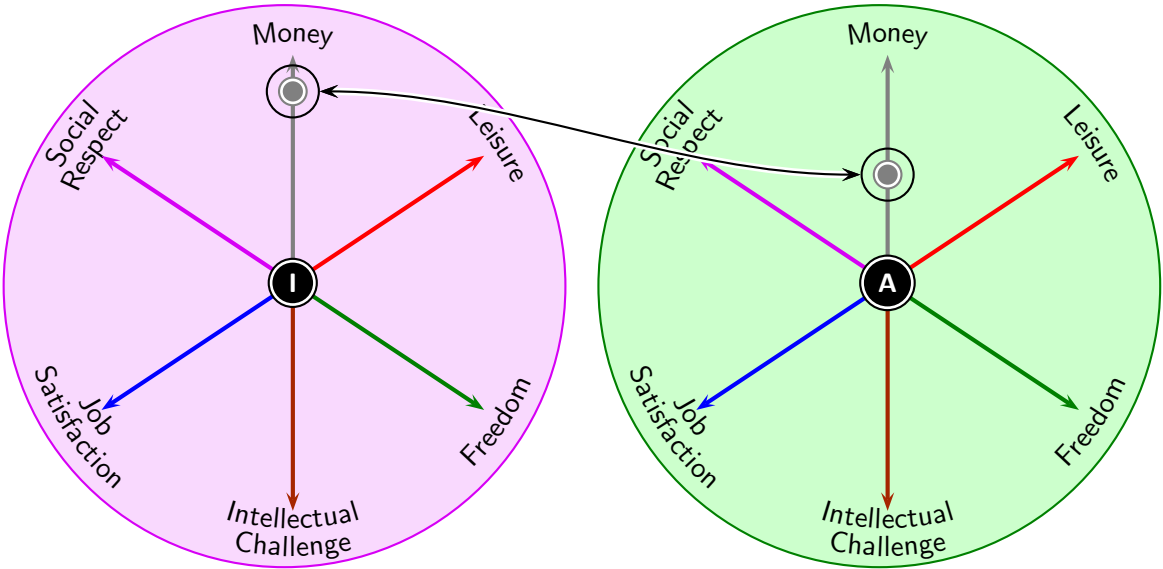

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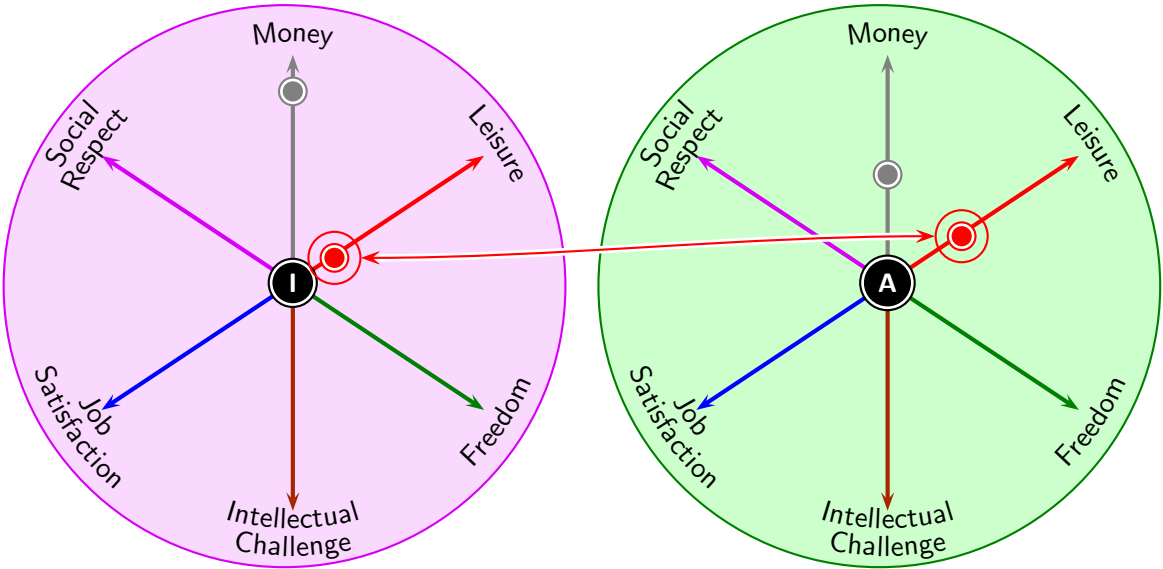

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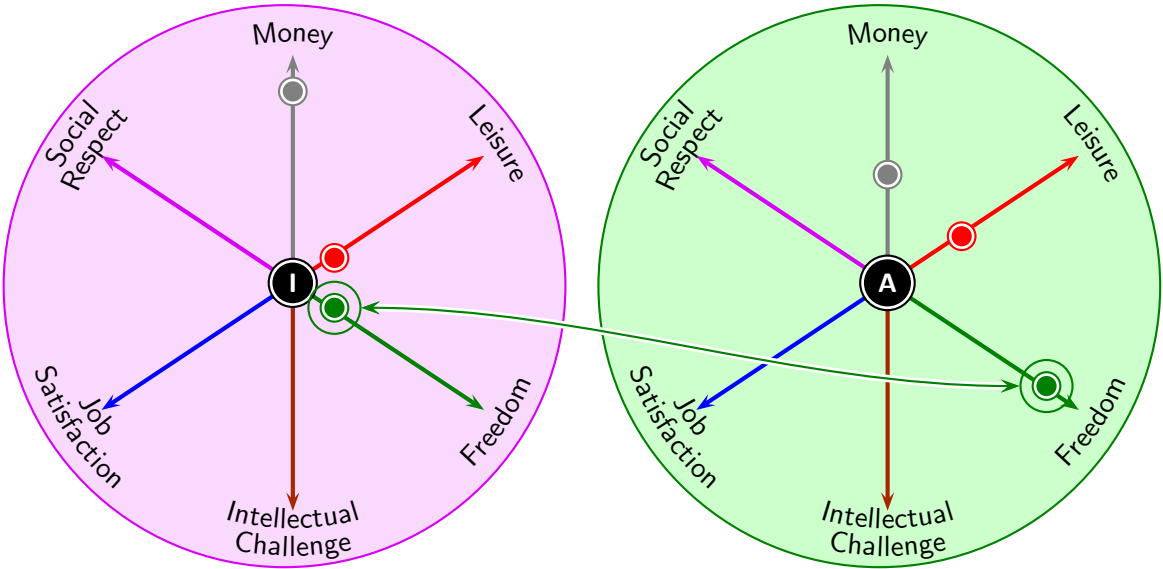

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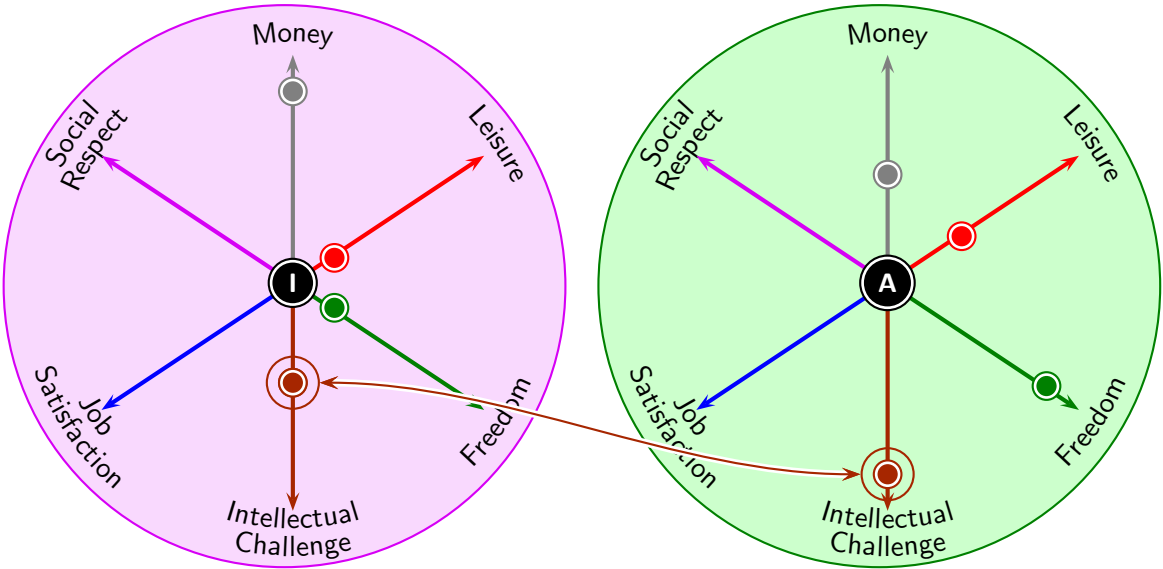

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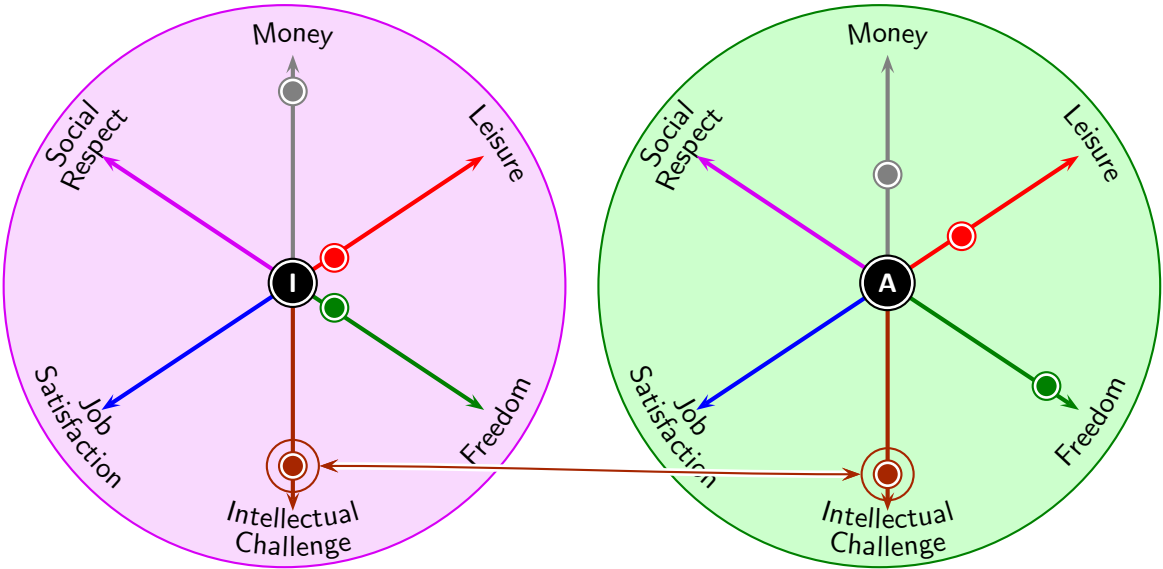

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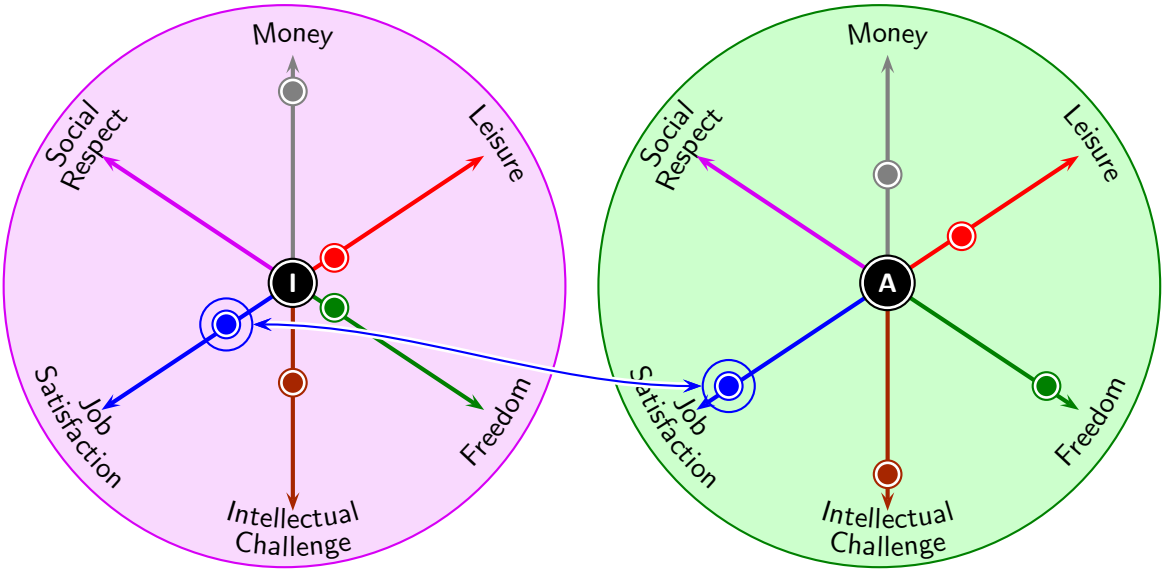

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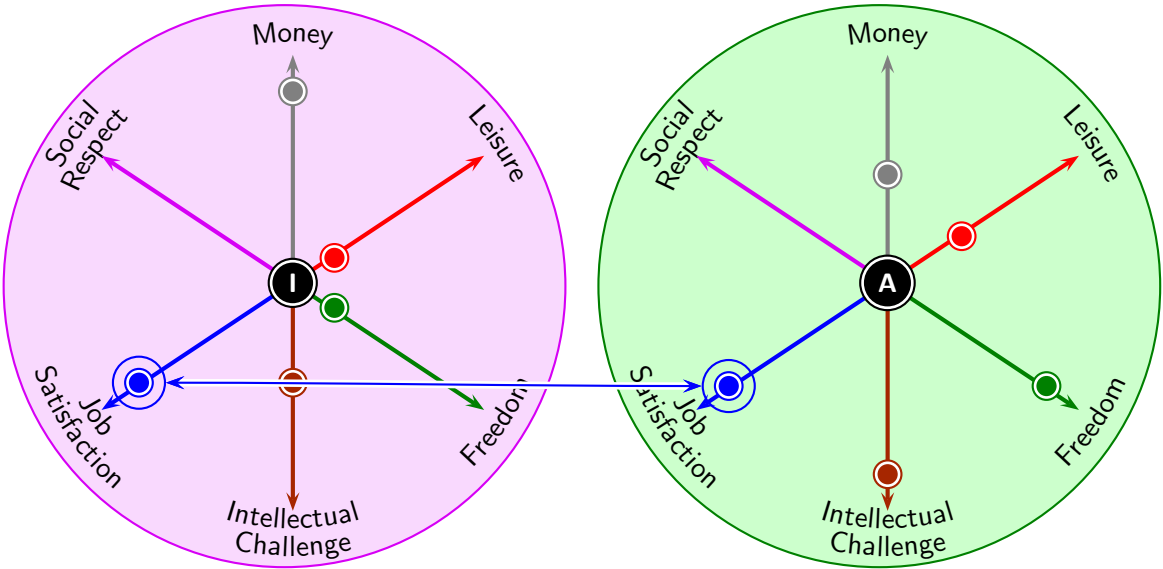

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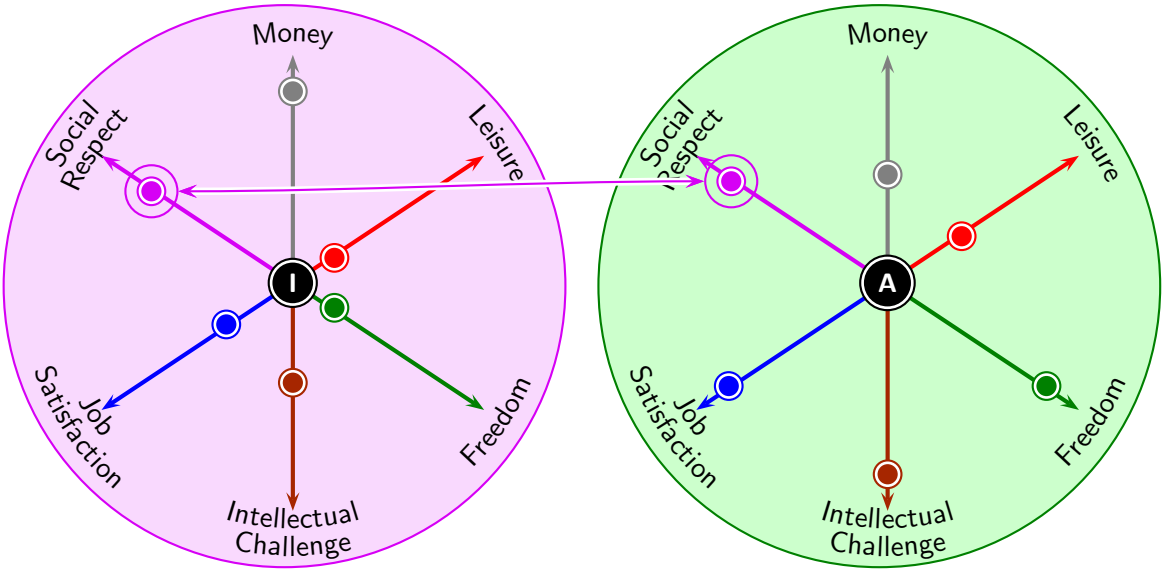

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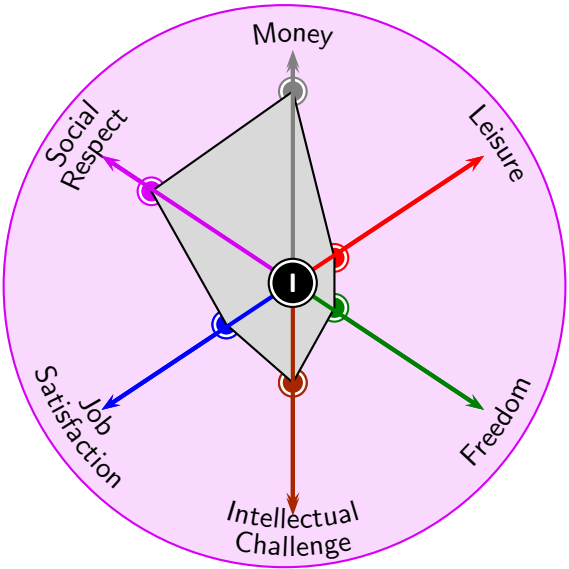

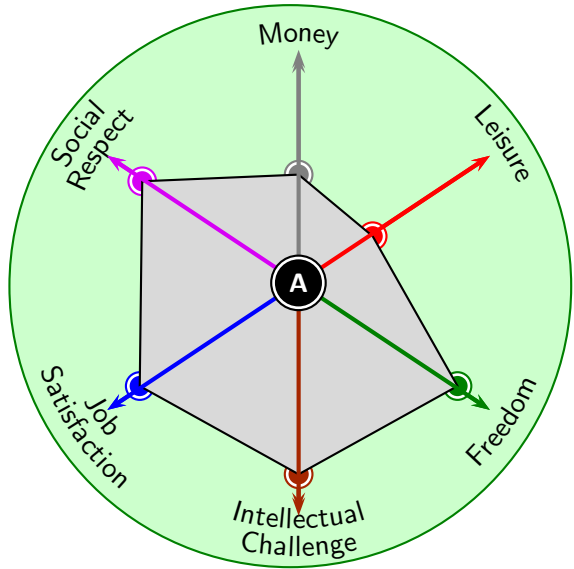

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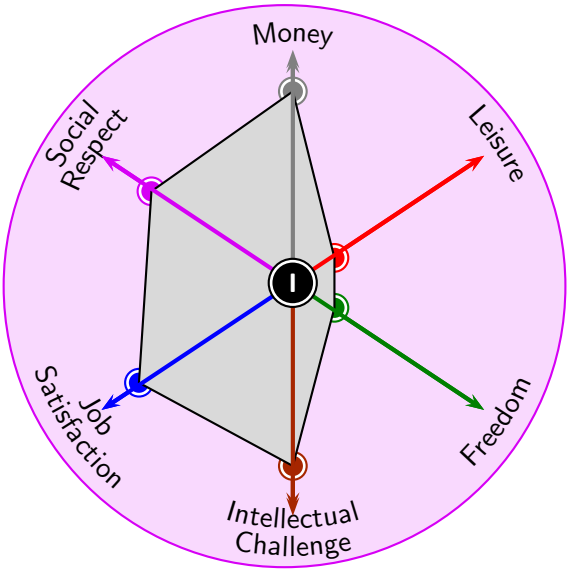

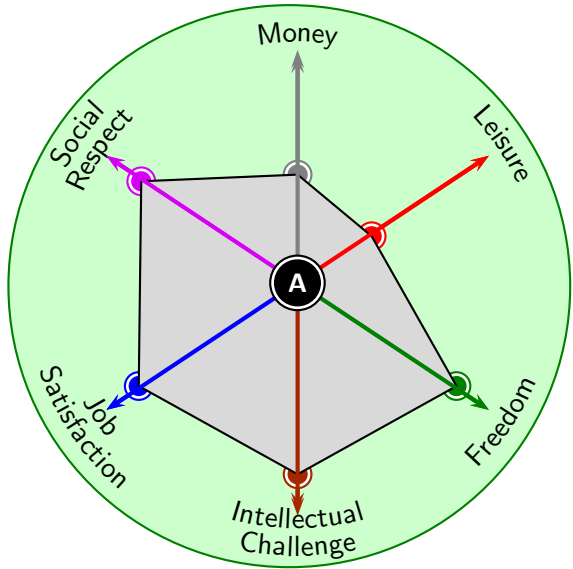

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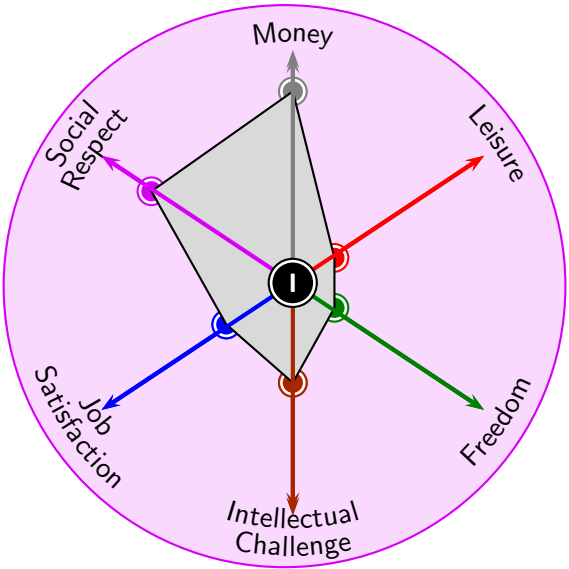

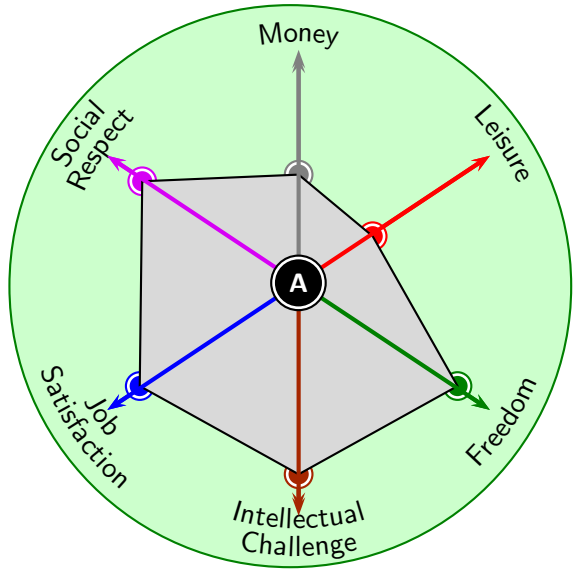

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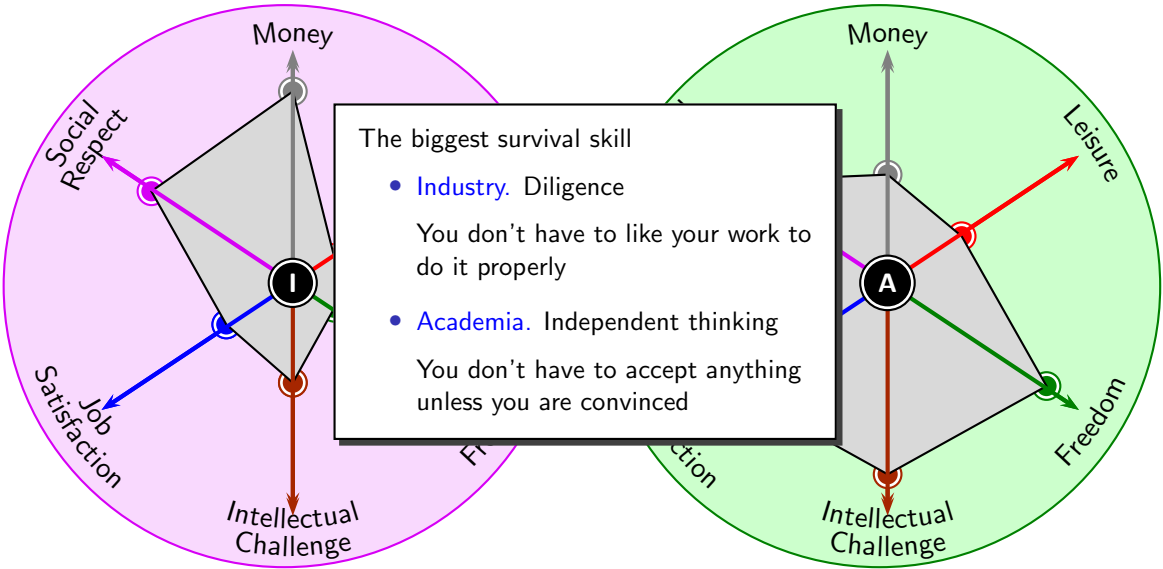


The biggest survival skill

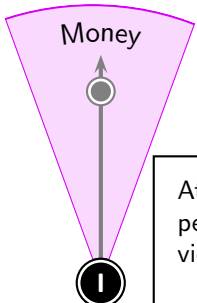
- Industry. Diligence

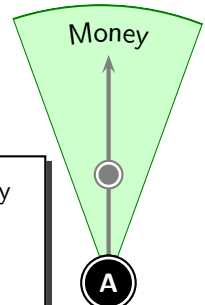
  You don't have to like your work to do it properly

- Academia. Independent thinking

  You don't have to accept anything unless you are convinced

Industry Vs Academic Jobs: Myths and Reality

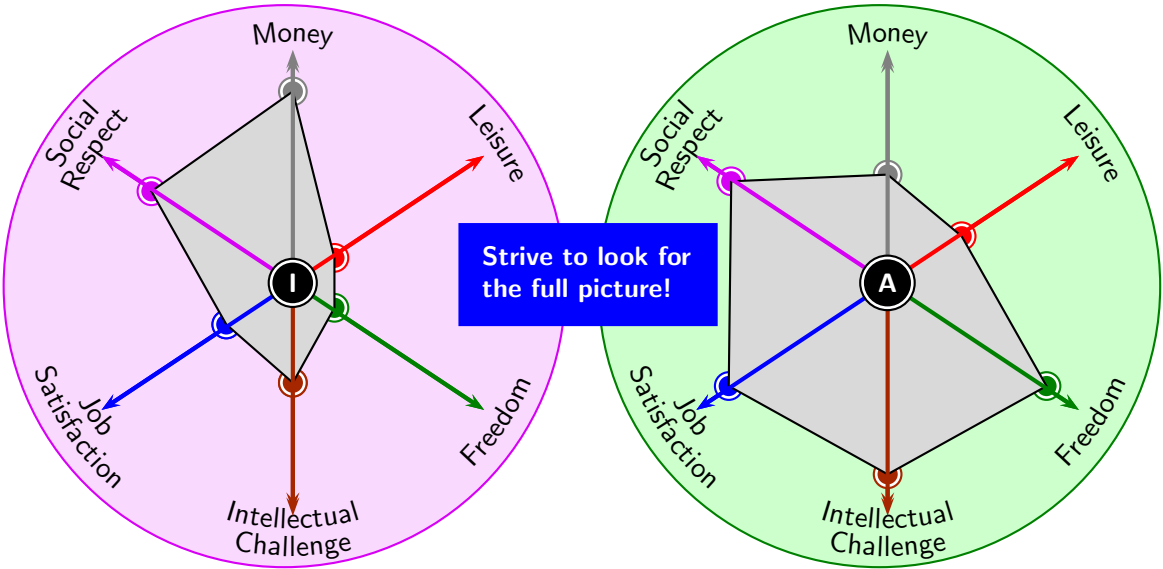




At the time of decision making, many people take a rather unidimensional view of the world!

They miss many important things in their decision making

Industry Vs Academic Jobs: Myths and Reality



Part 4

Conclusions

Conclusions

- Growth in life is a pre-requisite for fulfillment
- Learning how to learn is becoming more and more critical
- Higher education is a good stepping stone for learning how to grow

Thank You!

http://www.cse.iitb.ac.in/~uday

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