




The Human Face of Economic Geology : Your Career

Colorado School of Mines Presentation

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Thanks to my Co-Authors

Maeve Boland

Leigh Freeman

The Human Face of Economic Geology: Education,
Careers, and Innovation”

7

Society of Economic Geologists Special Publication 12,
2006, pp. 171-192



“I have to be careful not to preach.

I can't pretend that I can teach.

And yet, I've lived your future out...”

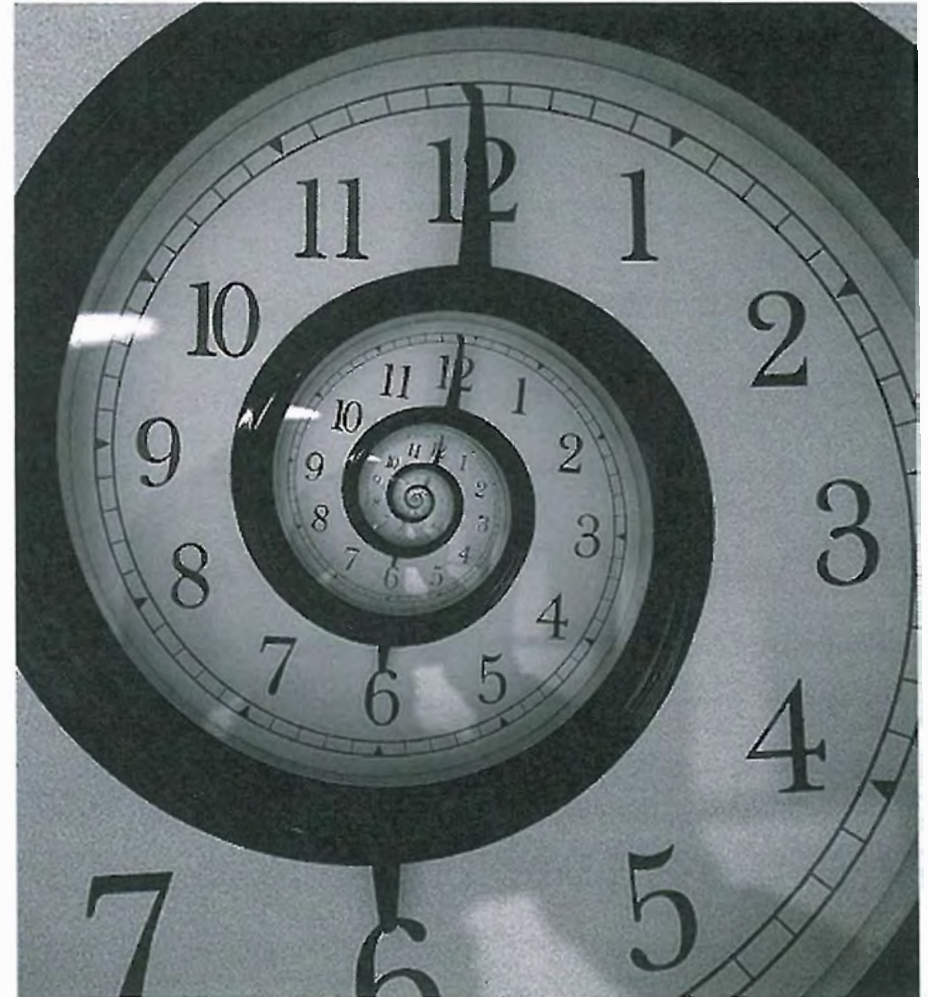
P. Townsend

The 10,000 Hour Rule (Malcolm Gladwell)

It takes approximately
10,000 hours of practice in
order to become an expert
in a chosen field.

10,000 hours =
40 hours/week X
50 weeks/year X

5 years





Examples of the 10,000 Hour Rule

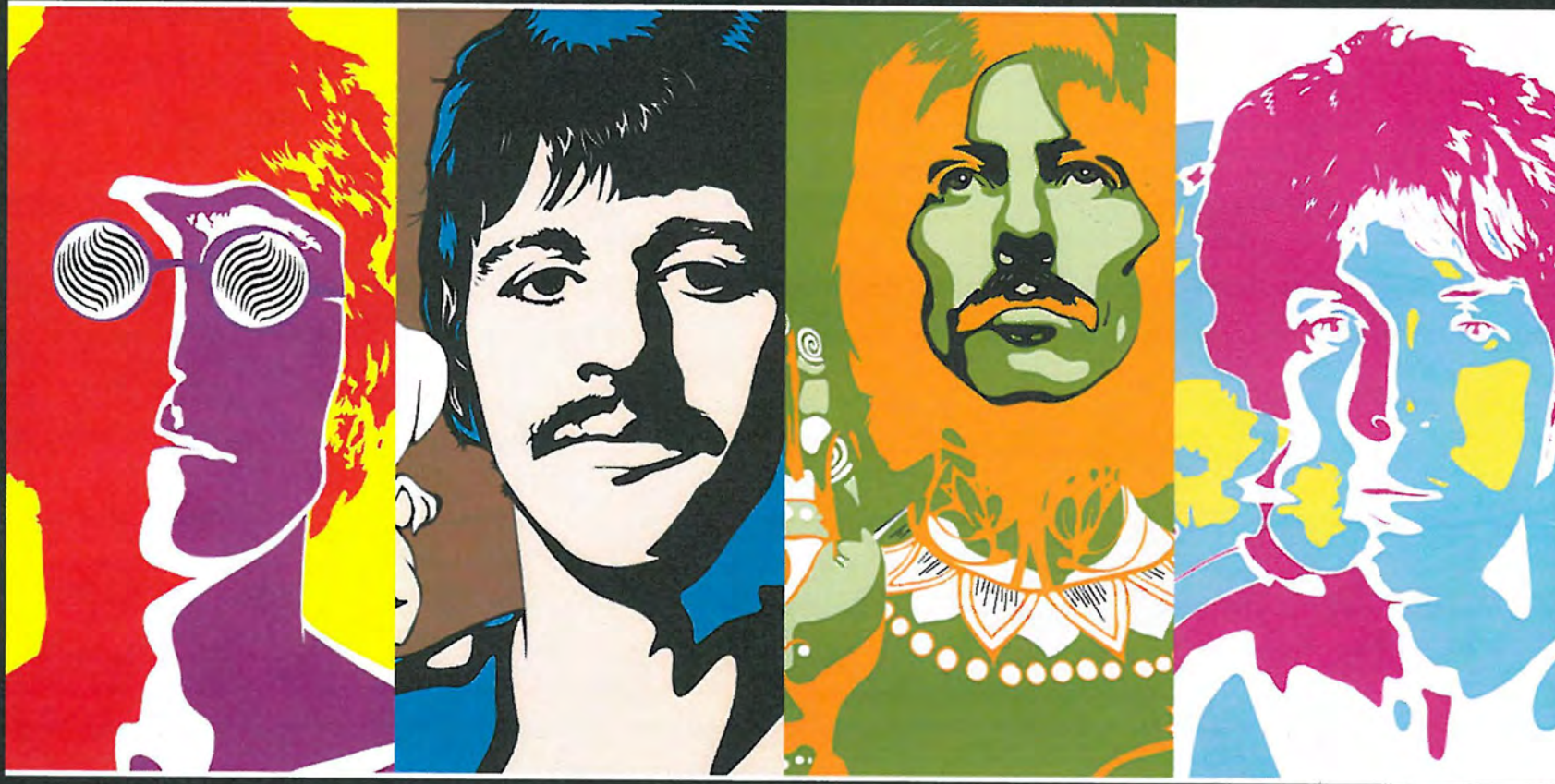
Time needed to become partner in a legal firm: ~ 5 years

Time needed to complete residency as a medical doctor: 3-7 years

Time needed to get tenure as a university professor: 6 years

Q: What were The Beatles before they became
The Beatles?

THE BEATLES



A: A Mediocre Bar Band



In 1960, Allan Williams arranged a season of bookings for the group in Hamburg, starting on 17 August 1960, but complained that he was not impressed with them as a musical group, and hoped that he could find a better act to follow them.



Is your "Best" a Beatle or a baker?

MERSEY BEAT

MERSEY BEAT EXCLUSIVE STORY

BEATLES CHANGE DRUMMER!

Ringo Starr (former drummer with Rory Storm and the Hurricanes) has joined The Beatles, replacing Pete Best on drums.



PETE BEST

Photo by Arthur Miller

Ringo has admired The Beatles for years and is delighted with his new engagement. Naturally he is tremendously excited about the future.

The Beatles comment: "Pete left the group by mutual agreement. There were no arguments or difficulties, and this has been an entirely amicable decision."

On Tuesday, September 11th, The Beatles will fly to London to make recordings at EMI Studios. They will be recording numbers that have been specially written for the group, which they have received from their recording manager George Martin (Parrish).

THE BEATLES TO PLAY SWITZER

As a result of the successful live offer made by The Beatles during their recent season of Monday nights at the Flare Theatre, DC, London, the directors of Swissair, Switzerland, controllers of the airlines, have engaged The Beatles for a series of four Thursday night sessions at the Liverpool Theatre, Liverpool, which commenced on 10th August.

(ie -Some Have It
(And Some Don't)



Beatle or baker?

Number of discoveries made by the average explorationist in his/her career: 0

Q: So how does the company treat the cumulative salary expense of that explorationist?

Companies aren't interested in the "average" explorationist. We need the "Beatles".

The Typical Career Path

0-2 years: Apprenticeship

6-8 years: Management Track

11-13 years: Executive Track



Advancement to a different career track is accomplished by acquiring additional competencies.

It takes about 5 years (10,000 hours!) to acquire these competencies, learn to employ them effectively, and to be recognized that you have them.



Competencies – The Building Blocks of Any Job

Three types:

Technical – (Knowledge and Application)

Business – (Time value of money, Accounting, Commercial acumen {What makes a mine as opposed to an occurrence})

Social – (Leadership, Salesmanship, Empathy, Deal-making, Strategic Thinking)

Competencies

- Competencies are additive; they build upon each other
- The percentage of competency type changes as one advances upward on the career ladder:

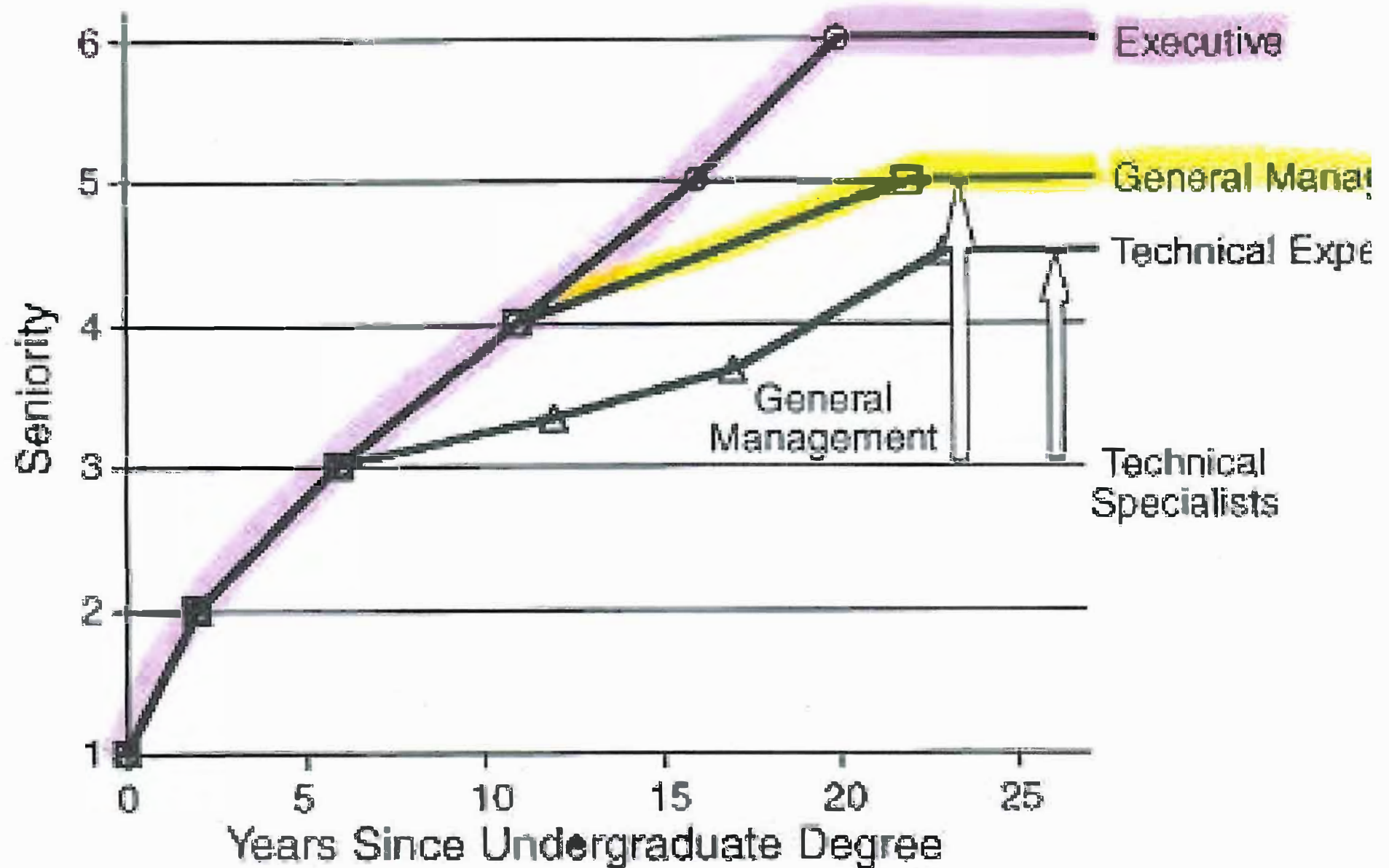
➤ Entry Geologist: 100% Technical Competency

➤ Exploration Manager: 60% Technical
20% Business
20% Social

➤ Exploration Executive: 10% Technical
35% Business
55% Social



The Typical Career Ladder (Applies to All Sorts of Technical Fields)





Q: So what happens if your career path is interrupted?

A: Very simply, you are off-track. Others whose career paths haven't been interrupted will most likely supersede you.

There is a limited time window – If you have not been placed into the next level track within a reasonable amount of time, then the assumption is made that you lack the prerequisite skills.

Now let's talk about Exploration!

"His ass will kick your ass!"

A FILM BY SRDJAN SPASOJEVIĆ

The PROSPECTOR



IN CINEMAS DECEMBER 10

CONTRAFILM PRESENTS A FILM BY SRDJAN SPASOJEVIĆ "A SERBIAN FILM"
SRDJAN TODOROVIC SERGEJ TRIFUNOVIC NIKOLA PANTELAC NEMANJA JOVANOVIĆ
SKY WIKIJI ALEXANDER RADIVOJEVIC SRDJAN SPASOJEVIC SRDJAN SPASOJEVIC

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ANGLO GOLD ASHAN

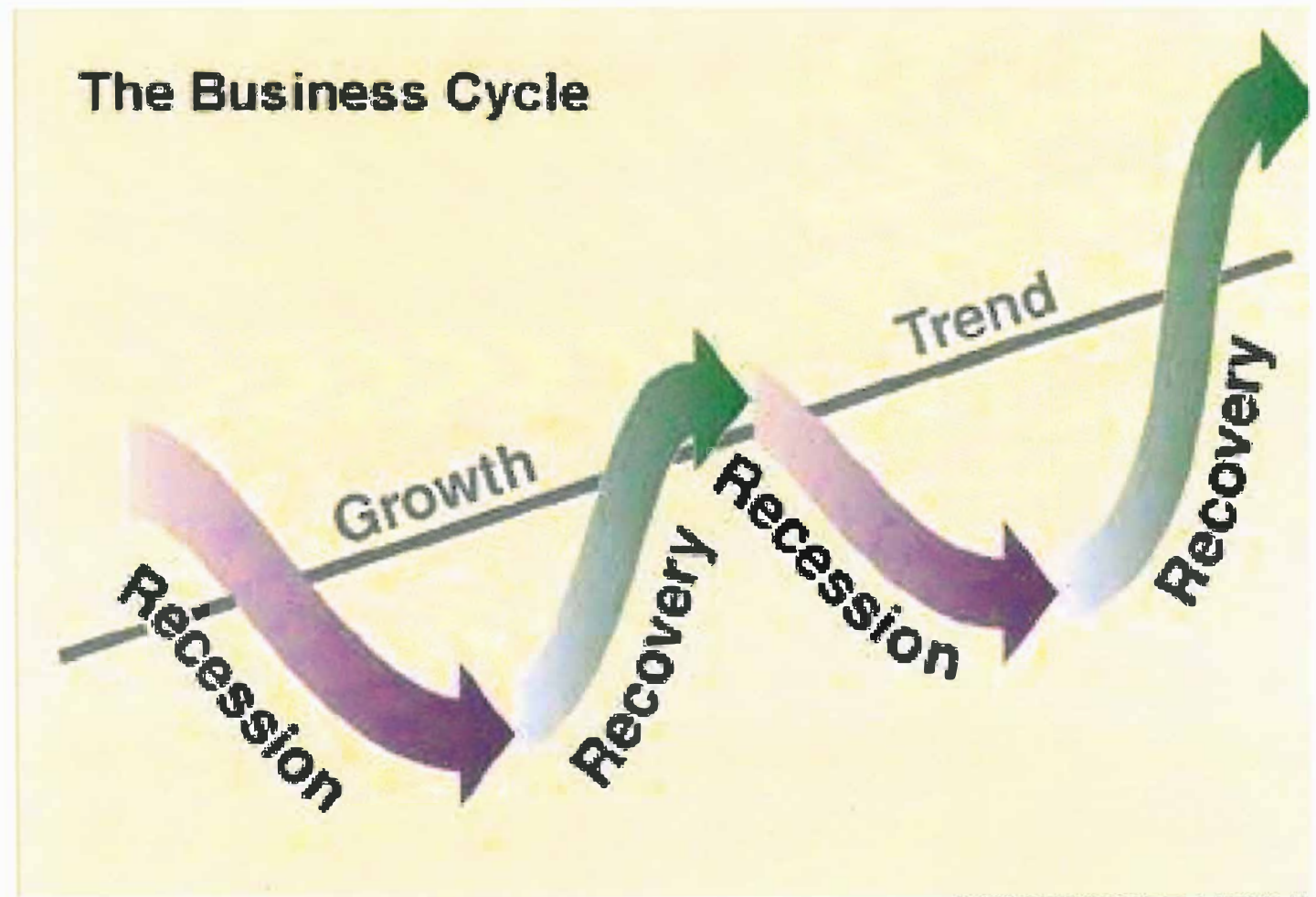
Exploration is a Life-Style not just a Career



The Exploration Industry Is

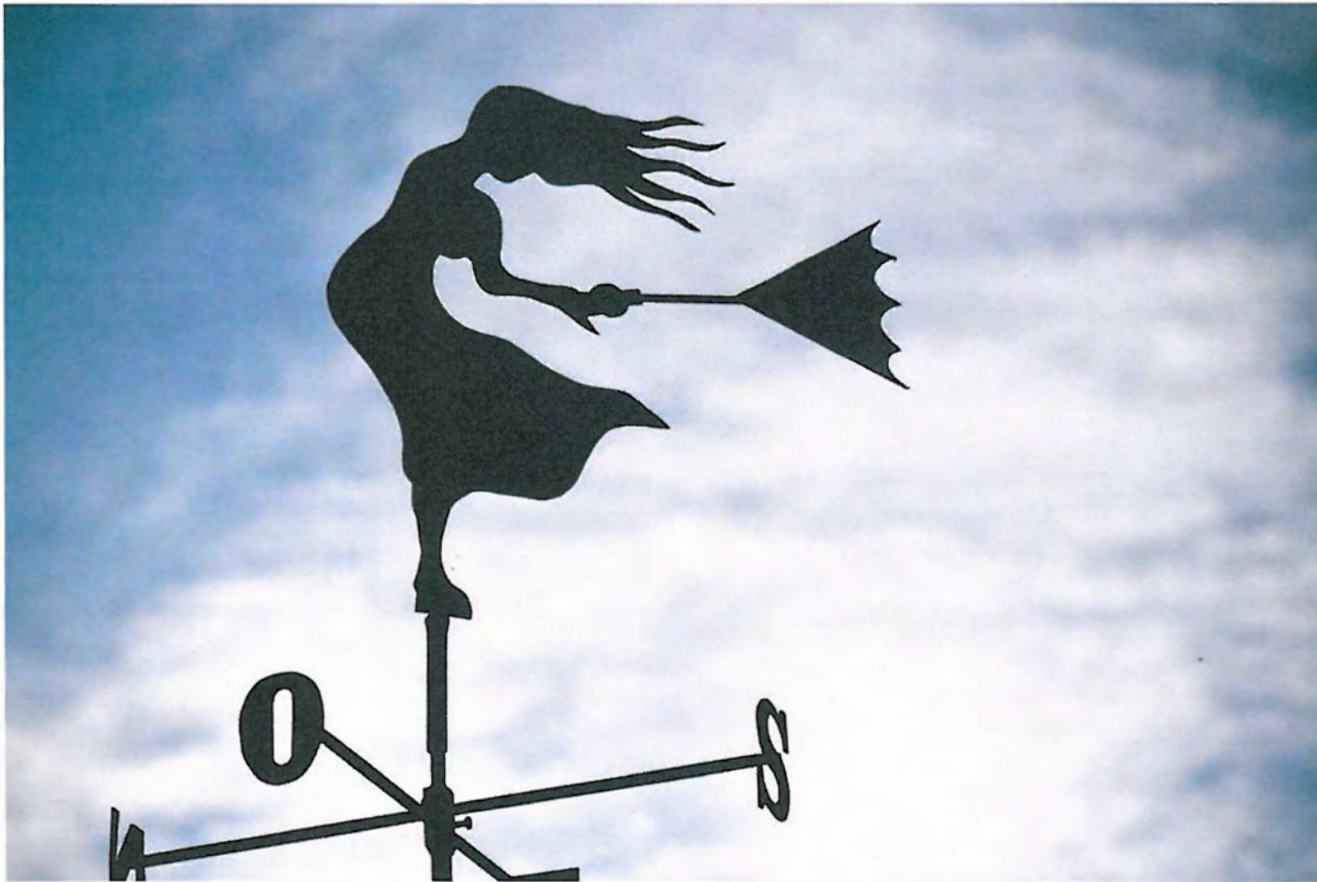
Extremely Cyclic

– You Will be Laid Off



Exploration

Explorationists are periodically buffeted by the disruptive winds of job loss, relocations, family issues, and/or lifestyle choices all in the context of varying degrees of opportunity.



A Typical Exploration Career Path

Years since graduation

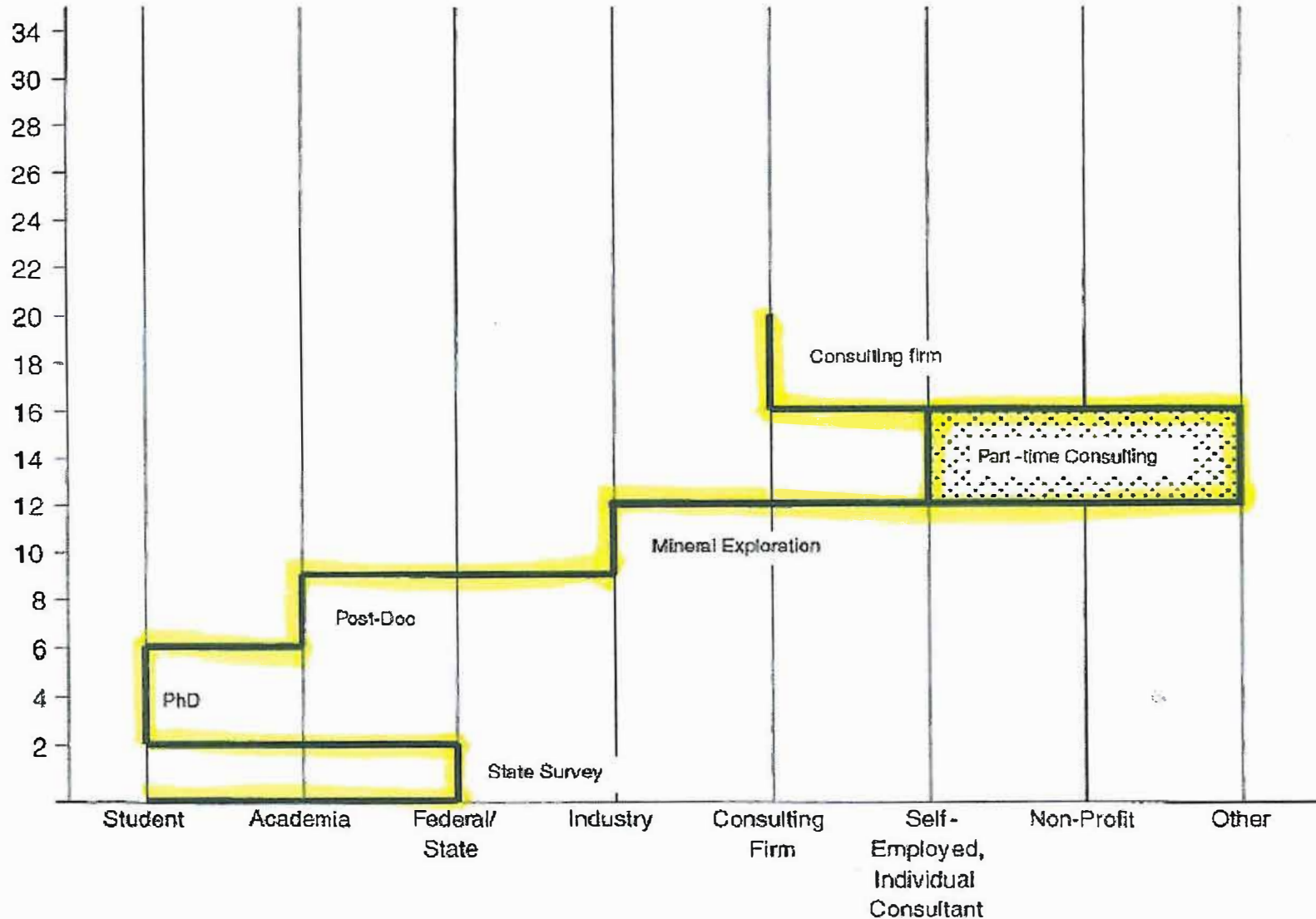
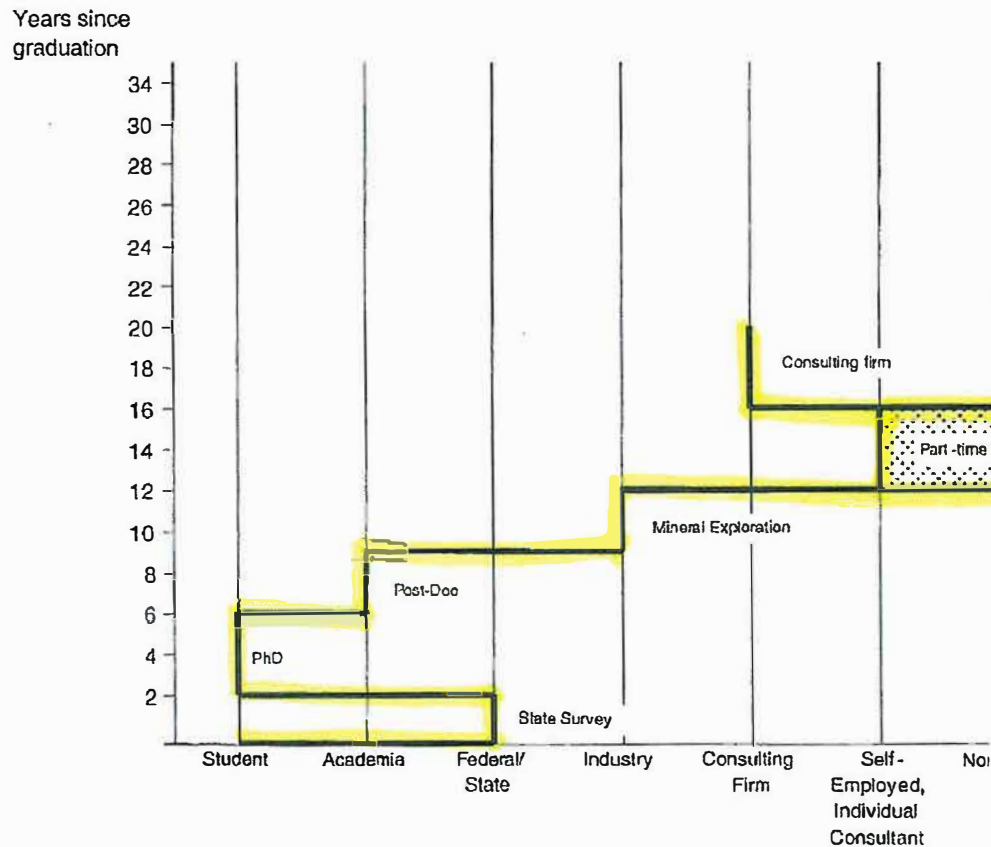


FIG. 3. One person's zig-zag career path. Paths such as these can now be viewed as the norm for industry exploration geologists.

(Bartos et al, 2006)

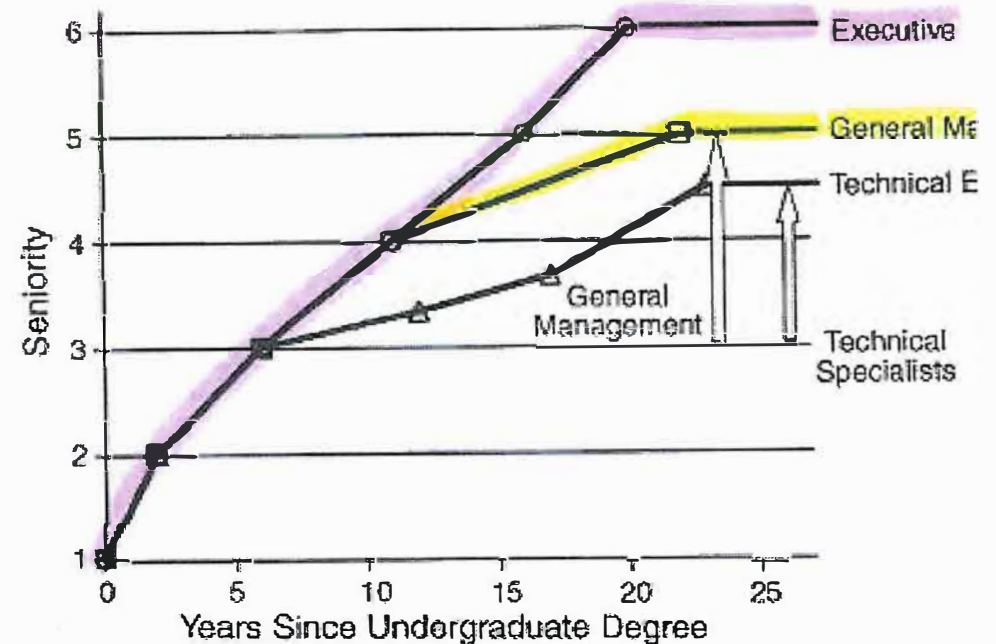
Q: So how does the typical disrupted exploration career path reconcile with the limited time window of opportunity for advancement?



*Not done
in isolation
always
relative to
others!*

FIG. 3. One person's zig-zag career path. Paths such as these can now be viewed as the norm for geologists.

(Bartos et al, 2006)



• **A:** Not very well.



The Exploration Industry Today

There are approximately 1600 junior companies in the gold exploration space.

An estimated one third of these have less than \$200,000 cash on hand.

Survival, not hiring new geologists, is clearly the priority for them

The View from PDAC

PDAC CONVENTION

Miners gather amid gloom, uncertainty



Prospectors Clayton and Sara Larche flog mining claims the old-fashioned way. MICHELLE SIU FOR THE GLOBE AND MAIL

'Only the strong will survive' as writedowns and market woes hit metals producers

Plagued by the worst outlook in recent memory, global miners are thinking about one thing more than any other as they gather for the industry's largest annual gathering: survival.

The Prospectors and Developers

majority that rely on it to discover assets for them to develop.

"Only the strong will survive," said Ioannis Tsitos, chief executive officer of Vancouver-based Eagle Mountain Gold Corp.,

which owns a small gold mine

als demand, add to the bleak outlook. Equally large cost overruns and massive asset divestitures by industry leaders show that the industry is in clear retrenchment.

The message was loud and clear at the the conference on

and his wife are selling mining claims to lots ranging in size from 40 acres to 40,000 acres in Northern Ontario. "I've been getting a lot of attention," he said.

As many as 30,000 industry professionals, explorers, drill



So Who Is Being Hired Today?

People who can step in immediately and get the job done **now** (i.e. “**experts**”)

In Demand:

Resource (Computer) Modelers

**Accomplished Field Geologists
(to significantly lesser degree)**

Those who can do the things the sixty and fifty-year-olds cannot”

10,000 Hours Continued

A good explorationist is first and foremost a
Field Geologist

How many hours in the field
do you have?

Most students have < 1 year.



Q: So where will you add the most value to your employer?

A: In the Field!



The Geo-Job of the Future

The Integrator of Data
using “Machine Learning”
and pattern recognition

Not just overlaying like a
light table – (the next step
beyond GIS)

“We are drowning in a sea
of data”





What are you worth? (2013 Annual Salaries)

Junior Geologist (minimal experience):	\$63,000
Project Geologist (1-2 years experience)	\$70,000
Senior Geologist (3-5 years experience)	\$85,000 – \$90,000
Country/ Major Project Manager	\$110,000 - \$130,000
Regional Manager (junior company)	\$120,000 - \$140,000
V.P. Exploration (junior company)	\$180,000 - \$200,000
CEO (junior company)	\$240,000 - \$250,000



Final (Nagging) Thought

“Recent College Grads Lack Professionalism”

– Wall Street Journal 3/20/13

Level of professionalism among new hires decreased in last 5 years

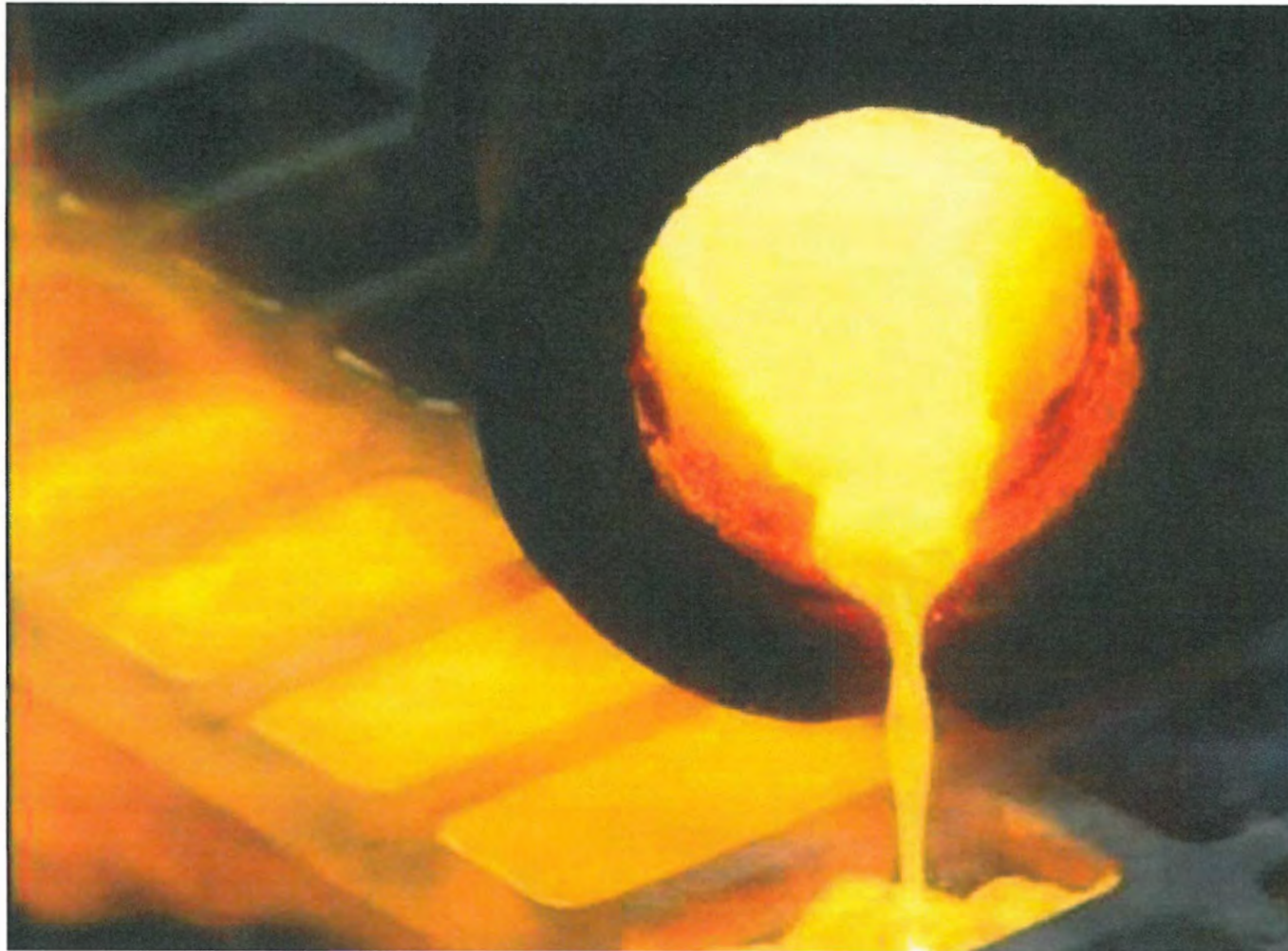
New employees’ work ethic has worsened

“Arrogant, with an air of entitlement”

Inappropriate use of technology while on the job (texting, Facebook)



Good Luck!



Happy Hunting!

ANGLOGOLD ASHAN