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Good Actuarial (Function) Report

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Goals of Today's Session

We hope that you will:

- Have greater confidence in how to approach and structure your Actuarial Function Report.
- That you will better understand the gift of Actuarial Science.



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Sub-Topics

- I. AFR Refresher
- II. Report Writing -Actuarial Science to the Rescue
- III. Approaching the Actuarial Function Report
- IV. The AFR Bar –What’s your challenge?



A. AFR: Stakeholders and Goals

Stakeholders:

- Board, Audit Committee, Risk Committees, Senior Management; Finance; Risk Management
- Plus: Pricing, UW, Internal Audit, Claims, Reinsurance, IT, Etc.

Goals:

- “...at least annually ... document all tasks that have been undertaken by the actuarial function and their results, ...
- clearly identify ... deficiencies and give recommendations as to how such deficiencies should be remedied.” (Commission delegated regulation (unnumbered), 2014, article 272, paragraph 8);



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B. Actuarial Function Tasks

- Direct Actuarial Ownership: Reserving, (Pricing Models), Risk Modelling, ORSA and Other ERM duties.
- Soundness check (from actuarial point of view) of: Underwriting, Reinsurance, IT, ?claims, etc.
- Understand the business and organizational changes
- Assess compliance with SII and other requirements
- Reliability assessments for the Board
- Governance
- Etc.



C. Terms of Reference Lead the AFR

- Tasks and delivery plan
- Report timelines and content
- AF composition and qualifications
- Delegation and outsourcing
- Governance
- Interactions
- Etc.



D. The AFR Itself

- Documentation
- Assurance
- Opinions
- Recommendations



Part II: Report Writing -Actuarial Science to the Rescue.

- Heuristics
- Actuarial BAU and Heuristics
- Heuristics in Reports



Heuristics

- What is Heuristics?

“A heuristic technique ... is any approach to problem solving, learning, or discovery that employs a practical method not guaranteed to be optimal or perfect, but sufficient for the immediate goals. “

Where finding an optimal solution is impossible or impractical, heuristic methods can be used to speed up the process of finding a satisfactory solution.”

(<https://en.wikipedia.org/wiki/Heuristic>, accessed on 10 Sep, 2016)



Actuarial BAU and Heuristics

Actuarial Science is a Heuristic discipline. Actuaries rely on heuristics which broadly mirror their understanding of the underlying processes.

When statistical techniques alone are insufficient due to data and complexity issues. Good actuarial method, however, uses statistical validation, back testing and iterative improvement as much as practicable.

(Gerd Gigerenzer terms these heuristics with ecological rationality)



Actuarial Heuristic Examples

- Chain-ladder
- BF Method
- Correlation matrices
- Gamma as Mixture of Exponential Distributions for tail factors
- Averaging averages
- On Level adjustments
- Mack Method



Report Heuristic Examples

Task	Heuristic
Planning	Complexity Heuristic
Report Structure	Nature Reserve Map Analogy
Explanation	Analogy
Clarification	Metaphor
Relationships	Storytelling
Logic	Logic
Meeting Standards	Lever Balance that is Witnessed
Satisfaction of Readers	Value + Trust By All Ecosystem
Hypotheses	Investigative Journalism
Useful conclusions	Silver Tray Delivery Of Cure
Complex subject	Stories From Different Angles



A. Many Stakeholders, Ambiguous Goals and Limitations



Noby Noby Boy: What's the goal? -Limitations are everywhere.

B. Fuzzy webs of Data:



Data to the AFR is the underlying work and its documentation:

- Direct Actuarial Work
- Opinions on UW, Reins, ...
- Reliance's Reviews: IT, ...
- Challenge and Audit
- Governance

None of it truly standalone

All interconnected directly or via underlying assumptions

C. Many, Many Choices and Effects



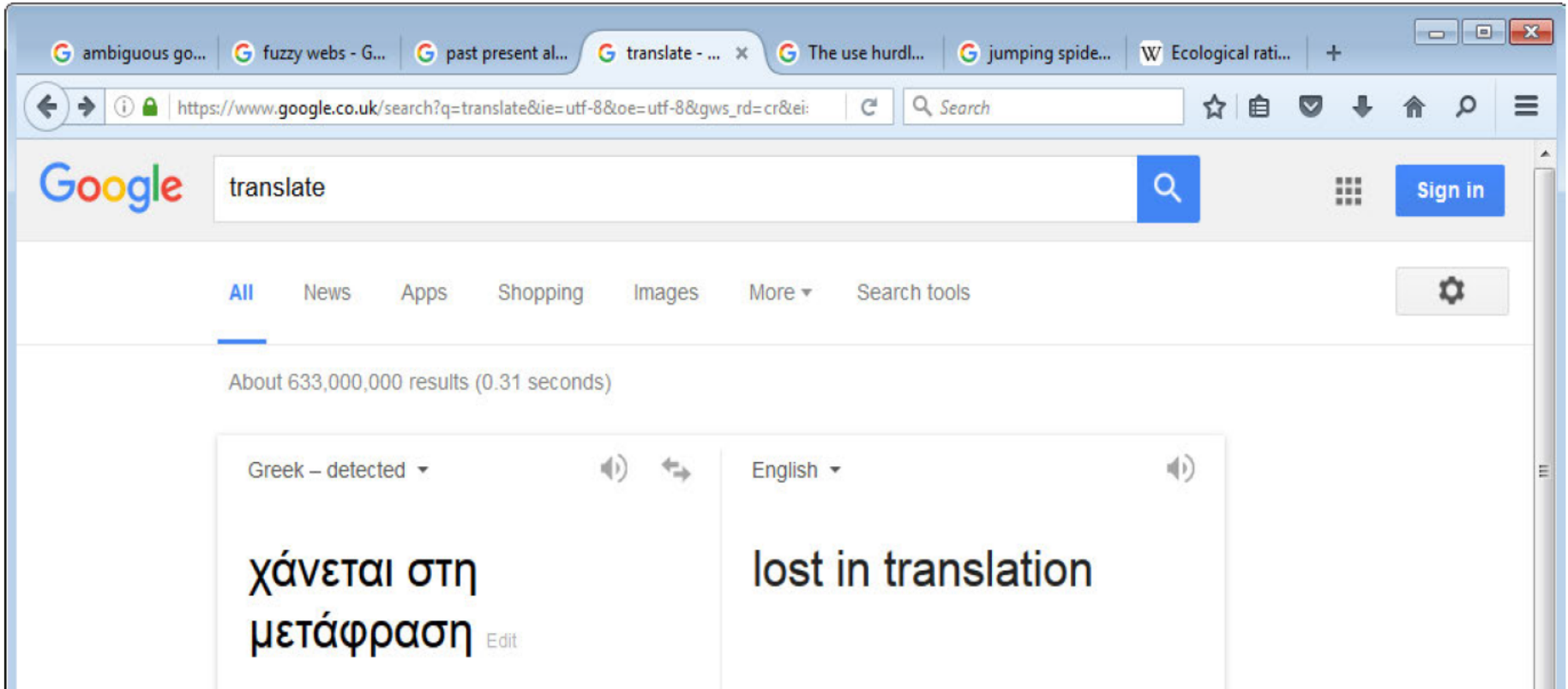
- Different ways of structuring the AF + AFR
- Underlying analyses have many assumption and method options
- Links and interactions:



- External consistency too



D. Understanding Gap



- Actuaries think very analytically as professionals
- Users think from their life experience and responsibilities



E. The Use Hurdle



- Users don't just need to understand the report
- It needs to help them achieve their goals gracefully



Complexity Heuristic

- Stakeholders, Goals and Limitations: Number, Interaction and Ambiguity
- Data: Number, Interaction and Ambiguity
- Process & Approach
 - Number of deliberate action choices
 - Amount of memory or feedback reactions
 - Number & degree of external effects
 - Ambiguity of results
- Communication
 - Understanding gap between writer and audience
 - Type & degree of use of results



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AFR Strategy Example: Stand-Alones

Straightforward		Complex
AVE Waterfall		Demonstrate Compliance
Historic Reins Outcomes		Explain TP Analysis Uncertainty
Fit to Risk Appetite		Discuss Appropriateness
List Things		Discuss Reliability
Process Description		Explain Alternatives
Exception lists		Potential Conflicts of Interest
		Outcome Distributions

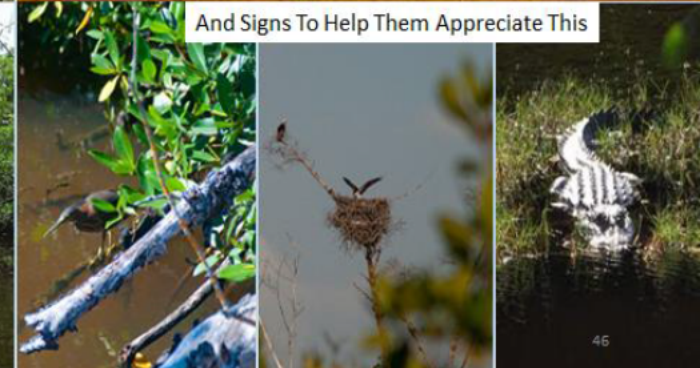


AFR Cross-Over Elements

Primary Area	Description	TP	UW	REI	ERM
TP	TP Uncertainty	X	(X)	(X)	X
TP	Data Limitations (SII Standard)	X			X
TP	TP Adequacy Concerns	X			X
UW	Premium Sufficiency	X	X		X
UW	Pricing Improvements		X		X
UW/REI	Fit to Risk Appetite	X	X	X	X
RI	Reins Gross/Net Profit Dist'n	X	X	X	X
RI	Reinsurance Limitations		X	X	X
RI	Reins Credit Assessment	(X)		X	X
RI	Reinsurance Scenario Tests			X	X
ERM	Risk Modelling	X	X	X	X
ALL	IT, Data, Common Assumptions	X	X	X	X
ALL	(External Inputs & Challenge)	X	X	X	X

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Nature Reserve Heuristic applied to AFR



All visitors should be able to easily choose all the highlights that necessity, time and interests allow.

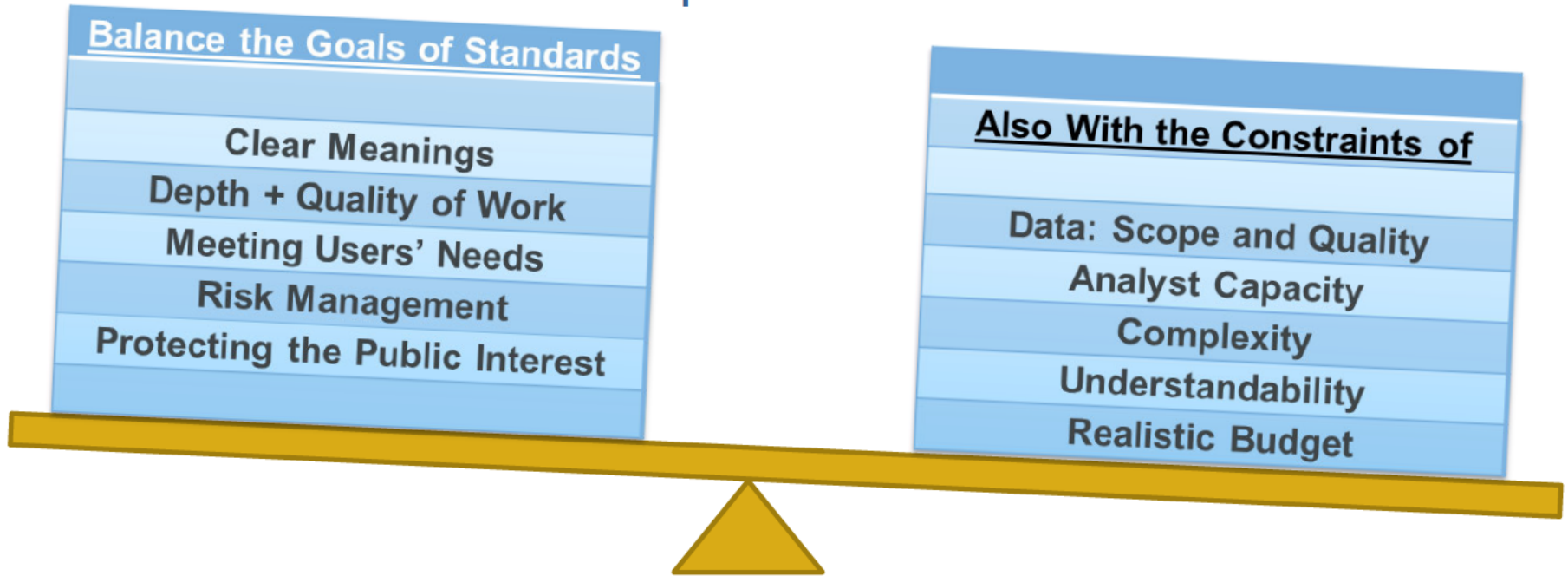
The Appendix Is For Stuff That Is Interesting, But Does Not Form The Main Story



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Satisfying Users While Meeting Standards

Good Compromises need to:



Compromise Levers



Wisdom Levers



Storytelling Heuristic

- Charts and Graphs should tell a simple story on their own. The “action” through comparison should beg for interpretation.
- Gripping story: -start with a topical personal failure, then add more context. Having set the hook, start reeling them in. They want to know how success was found.
- As complexity increases, the variety of voices should too.



Part IV: The AFR Bar

What's your challenge?

