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Anticipating the Future: The Mapping of Risk and Uncertainty in the National Security and Defence Planning of the Netherlands

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European Foresight Policy Wo[illegible] Bruxelles October 26, 2011

Claims Up Front

- **“Black Swans” = Bogus Term**

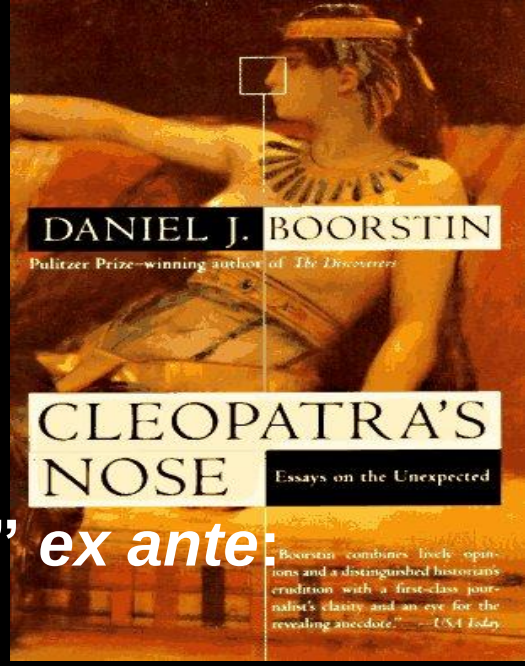
=> Black Swan!

- **Our ability to assess “Weak Signals” *ex ante*:**

  I have my doubts

- **Utility of “Orientation” conducted separately from “Navigation” is low**

- **(Naturally:) We need to (continue to) rethink our approach towards “mapping” the future**



Overview

- **Foresight and Risk Assessment within** the Netherlands
- **National Security Strategy and National Risk Assessment**
- **Some (potentially interesting) Methods employed in NL foresight and risk assessment**
- **Conclusion**

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Dutch very active in foresight

International	145	67
Europe		
EU-related	83	79
Austria	6	10
Belgium	8	17
Bulgaria	1	3
Cyprus	0	1
Czech Republic	0	5
Denmark	21	19
Estonia	1	8
Finland	23	52
France	134	64
Germany	89	42
Greece	1	8
Hungary	1	2
Iceland	7	1
Ireland	6	8
Italy	13	9
Latvia	3	2
Lithuania	0	1
Luxembourg	2	4
Malta	1	3
Netherlands	124	148
Norway	26	11
Poland	9	7
Portugal	4	5
Romania	2	4
Russia	10	10
Slovakia	2	2
Slovenia	1	4
Spain	12	39
Sweden	10	11
Switzerland	10	1
Turkey	1	6
Ukraine	1	2
United Kingdom	145	125

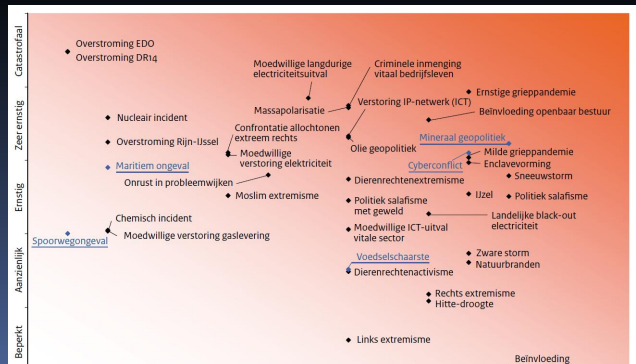
Latin America		
Argentina	0	7
Bolivia	1	1
Brazil	1	14
Chile	0	10
Colombia	0	35
Cuba	0	1
Ecuador	2	1
Mexico	1	2
Panama	0	1
Paraguay	0	1
Peru	0	10
Venezuela	8	37
North America		
Canada	16	11
United States	76	98
Asia		
Asia	15	29
China	21	8
India	8	7
Japan	7	37
Singapore	2	0
South Korea	2	8
Oceania		
Australia	27	14
New Zealand	9	1
Total	1 098	1 113

EFMN
European Foresight Monitoring Network

The EFMN is financed by the European Commission Directorate General for Research as part of a series of initiatives intended to provide a Foresight Knowledge Sharing Platform for foresight practitioners and policy makers in the European Union.

Foresight and Risk Assessment in the Netherlands' Government

- Various intradepartmental and cross departmental foresight exercises:
  - e.g: **Future Defence Survey** (a joint exercise by the Ministries of Defence, Foreign Affairs, Interior, Justice, Finance);
- One whole-of-government foresight AND risk assesment exercise:
  - Strategy National Security
  - National Risk Assessment

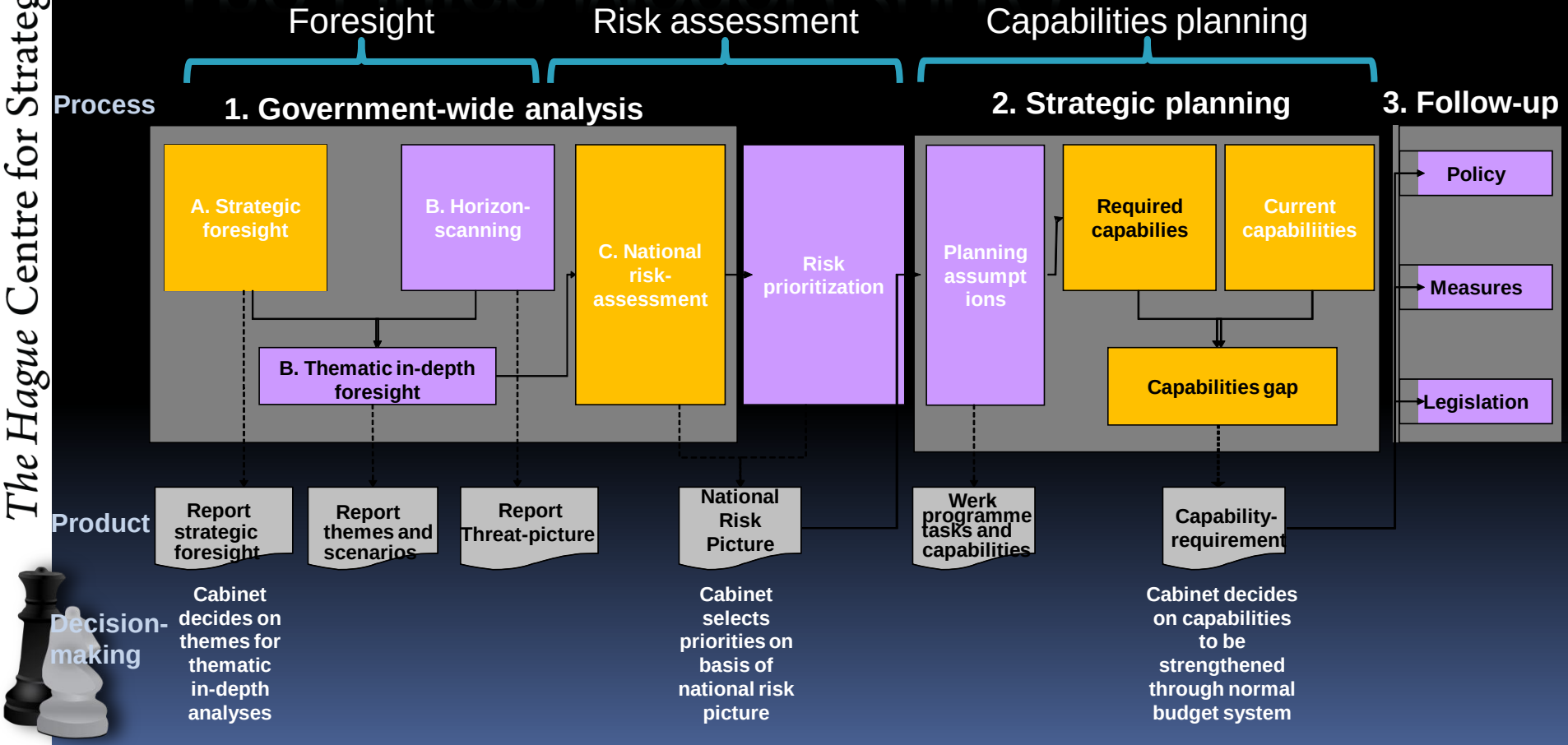


Dutch National Security Strategy (2007)

- **Formulated Five Vital Interests plus Definition of National Security:**
  - Territorial
  - Physical
  - Economic
  - Ecological
  - Political-Social Stability

- **Not a Grand Vision but a "living" document: a planning procedure**

Planning for National Security – The Dutch Model (2007)



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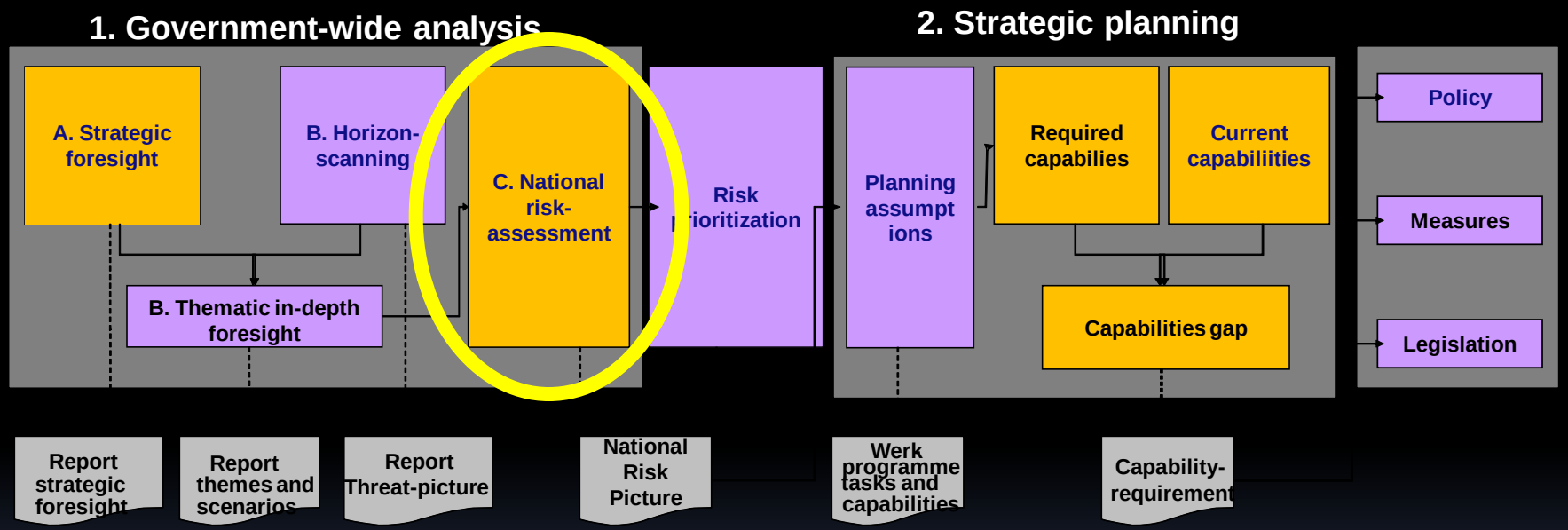
Forward Planning for National Security



Process

Product

Decision-making

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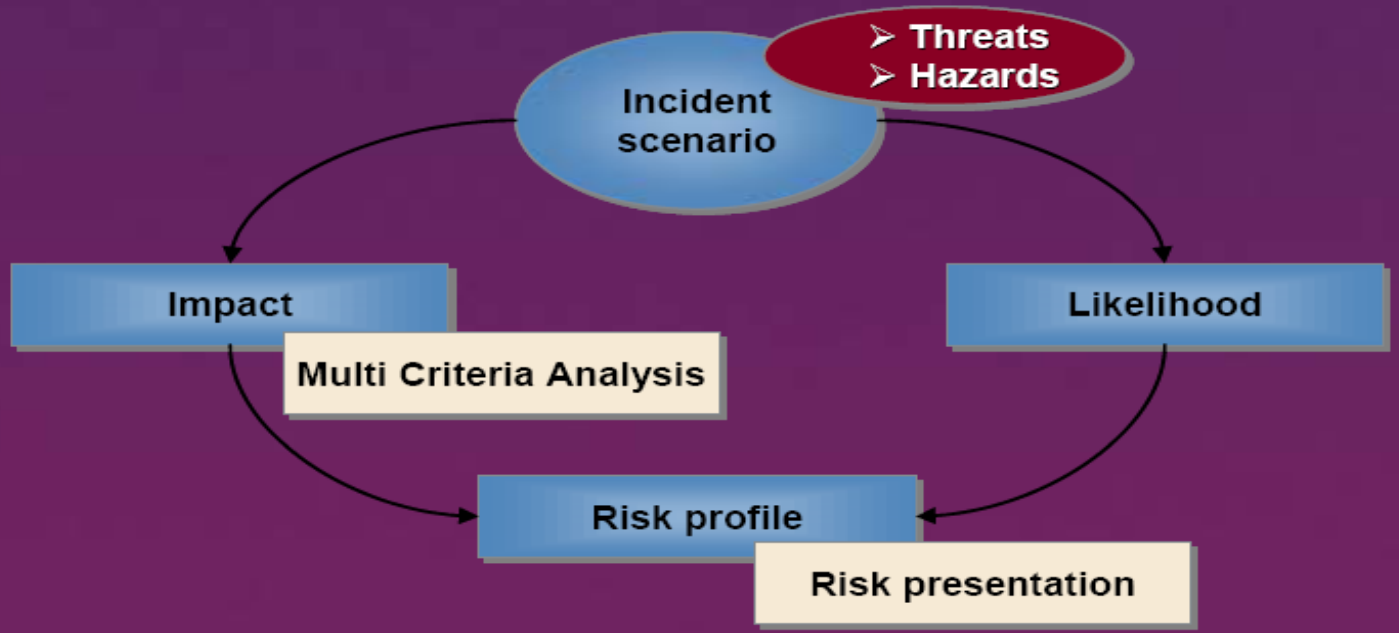
Government-Wide National Risk Assessment Methodology

National Risk Assessment (NRA) Methodology:



⇒ A. Likelihood of Risk Scenarios

⇒ B. Impact of Risk Scenarios

Government-Wide National Risk Assessment- – Assessing likelihood

Hazards		
Class	Quantitative (%)	Qualitative description of danger
A	< 0,05	Highly improbable
B	0.05 – 0.5	Improbable
C	0.5 – 5	Possible
D	5 – 50	Probable
E	50 – 100	Highly probable

Dangers	
Class	Qualitative description of danger
A	No concrete indication, and event is thought to be inconceivable
B	No concrete indication, but event is conceivable
C	No concrete indication, but event is conceivable
D	Event is thought to be quite probable
E	Concrete indication event will occur

Government-Wide National Risk Assessment – Assessing Impact

B. Impact of Risk Scenarios

1. Development of worst credible scenarios
2. Impact assessment on 10 impact criteria
   - Expected value (+ highest & lowest values)
   - Subcriteria & indices -> 10 criteria scores
   - Scores in outlined classes 0, A-E

area → / duration ↓	local (< 0.1 %)	regional (< 1 %)	provincial (< 10 %)	national (> 10 %)
Days	A	(X)	(X)	(X)
1-4 weeks	(X)	(X)	(X)	(X)
1-6 months	(X)	(X)	(X)	(X)
> 6 months	(X)	(X)	(X)	E

(X) ∈ {A, B, C, D, E}
large population density: +1; small population density: -1

National interests	Impact dimensions		Rating score (0-A-B-C-D-E)	Scenario S01
Territorial safety	Territory	m², t		0
	International position	#		0
Human safety	Fatalities	#		D
	Casualties	#		C
	Suffering	#,t		A
Economic safety	Costs	€		E
Ecological safety	Long term disruption	m², t		0
Political & social stability	Disruption to daily life	#, t		A
	Integrity of democracy	#, t		A
	Outrage & anxiety	#, t		E

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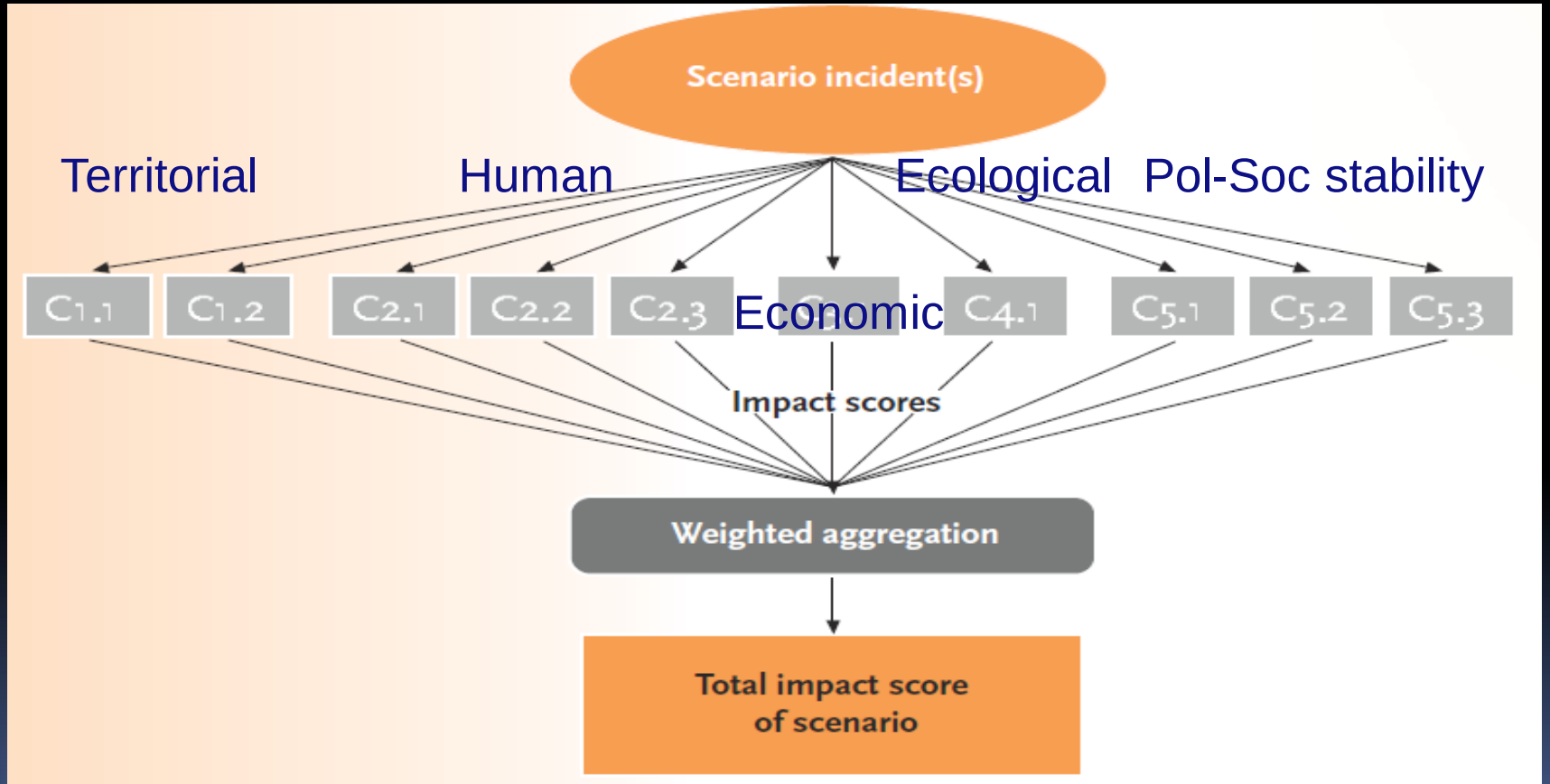
Impact assessment



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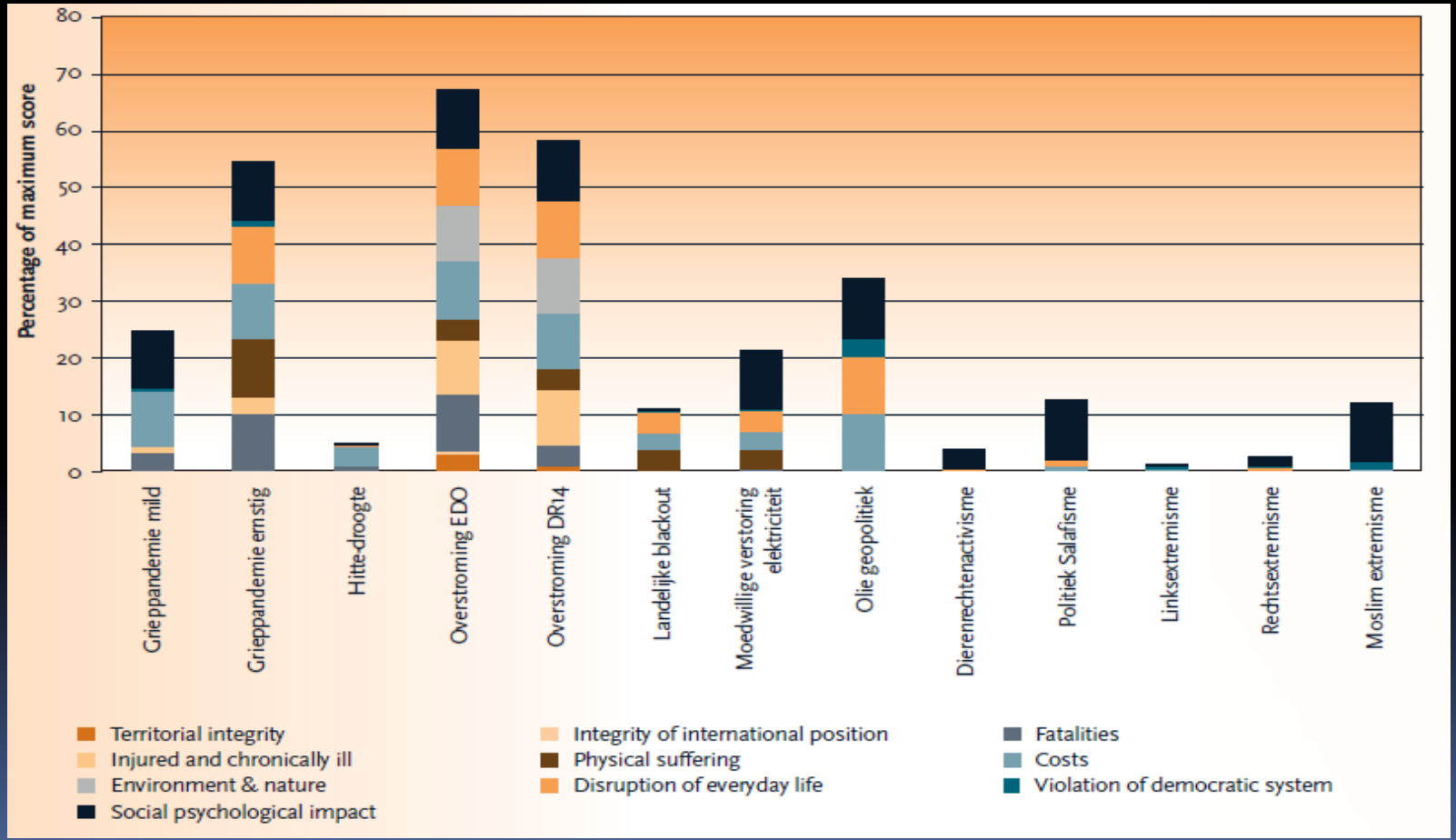
Impact scores



NRA overview of risks 2008-2010

- 39 scenarios over 7 themes:
- Climate Change (9 scenarios)
- Energy Security (5)
- Polarisation and Radicalisation (11)
- Organized Crime (3)
- ICT-Blackout (4)
- Massive Disaster (5)
- Scarcity(2)

Government-Wide National Risk Assessment

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2008

- **13 threat scenarios**
- Flu Pandemic / Mild
- Flu Pandemic / Serious
- Heatwave/drought
- Flooding EDO
- Flooding DR14
- Country-wide blackout
- Intentional electricity disruption
- Oil geopolitical
- Animal activism
- Poltical salafism
- Left extremism
- Right extremism
- Muslim extremism

2009

- **33 threat scenarios**, clustered in **6 'themes'** :
- Climate change (+flooding and flu));
- Security of energy supply;
- Polarisation and radicalization;
- Disruption of ICT-infrastructure;
- Interweaving of under- and upperworld;
- Serious accidents (+ chemical and nuclear accident).

2010

- **6 new ones/3 themes**
- Cyberconflict
- Disruption Internet exchange
- Food scarcity
- Mineral scarcity
- Rail accident
- Maritime accident

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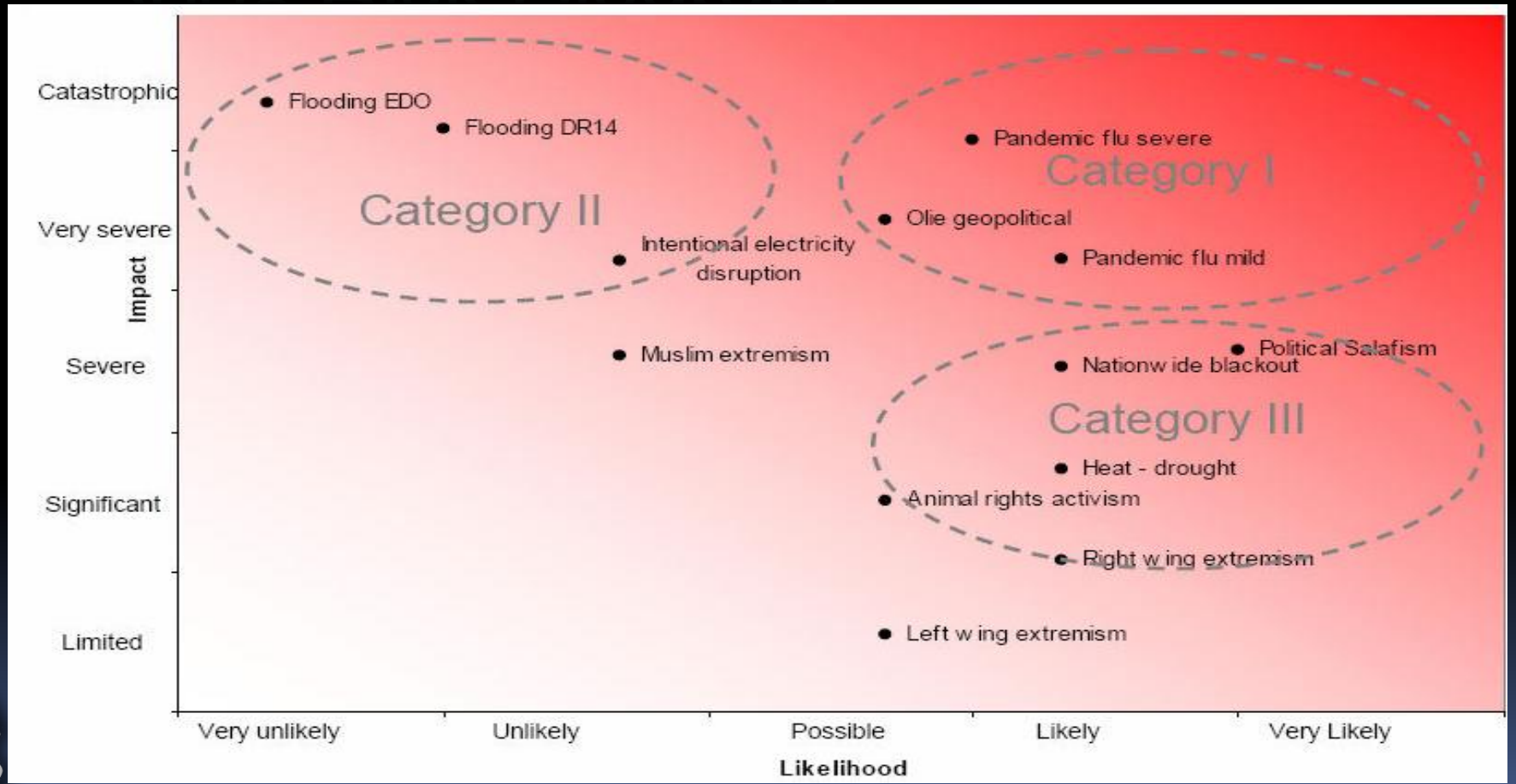
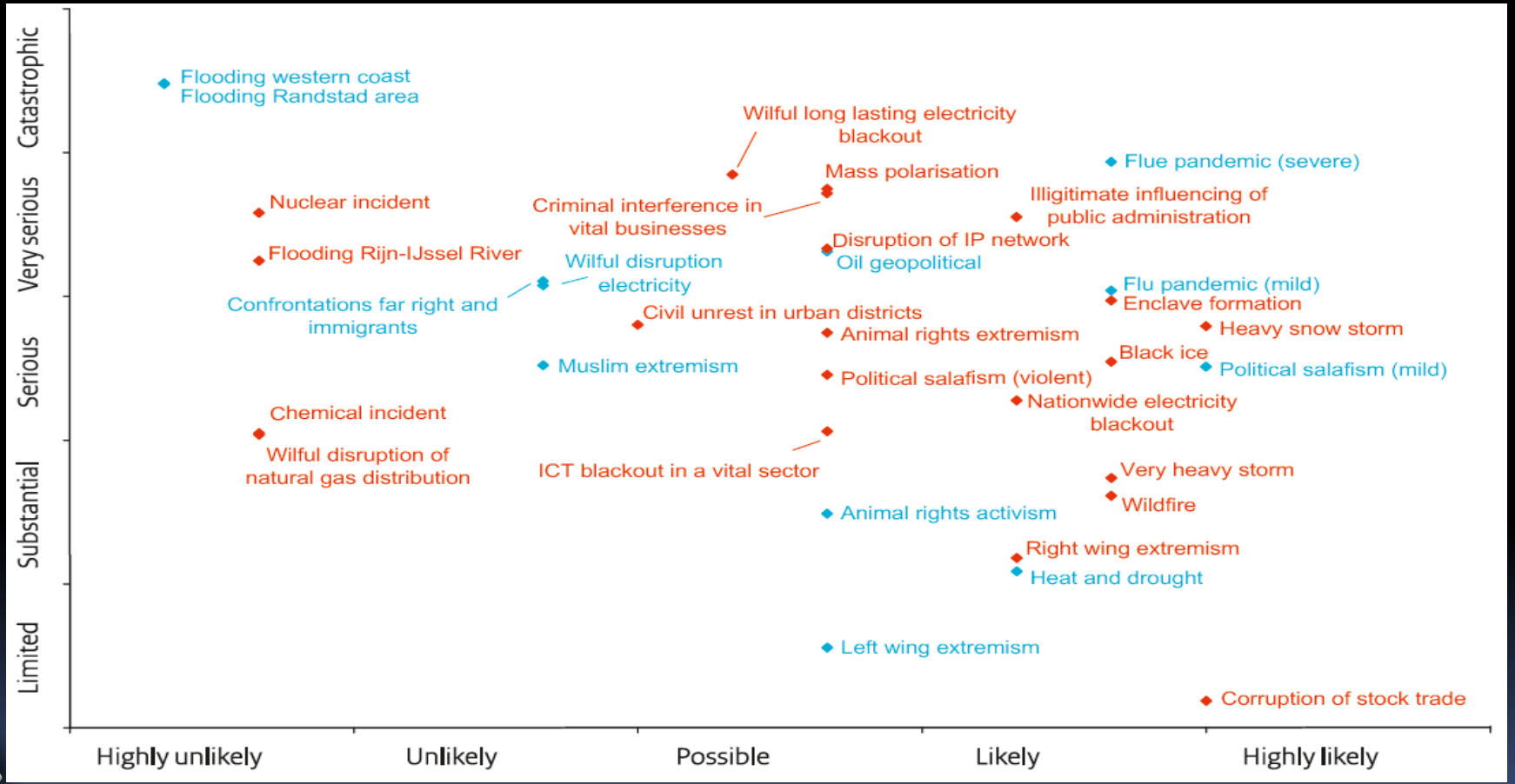
2008 Risk Diagram



2009 Risk Diagram



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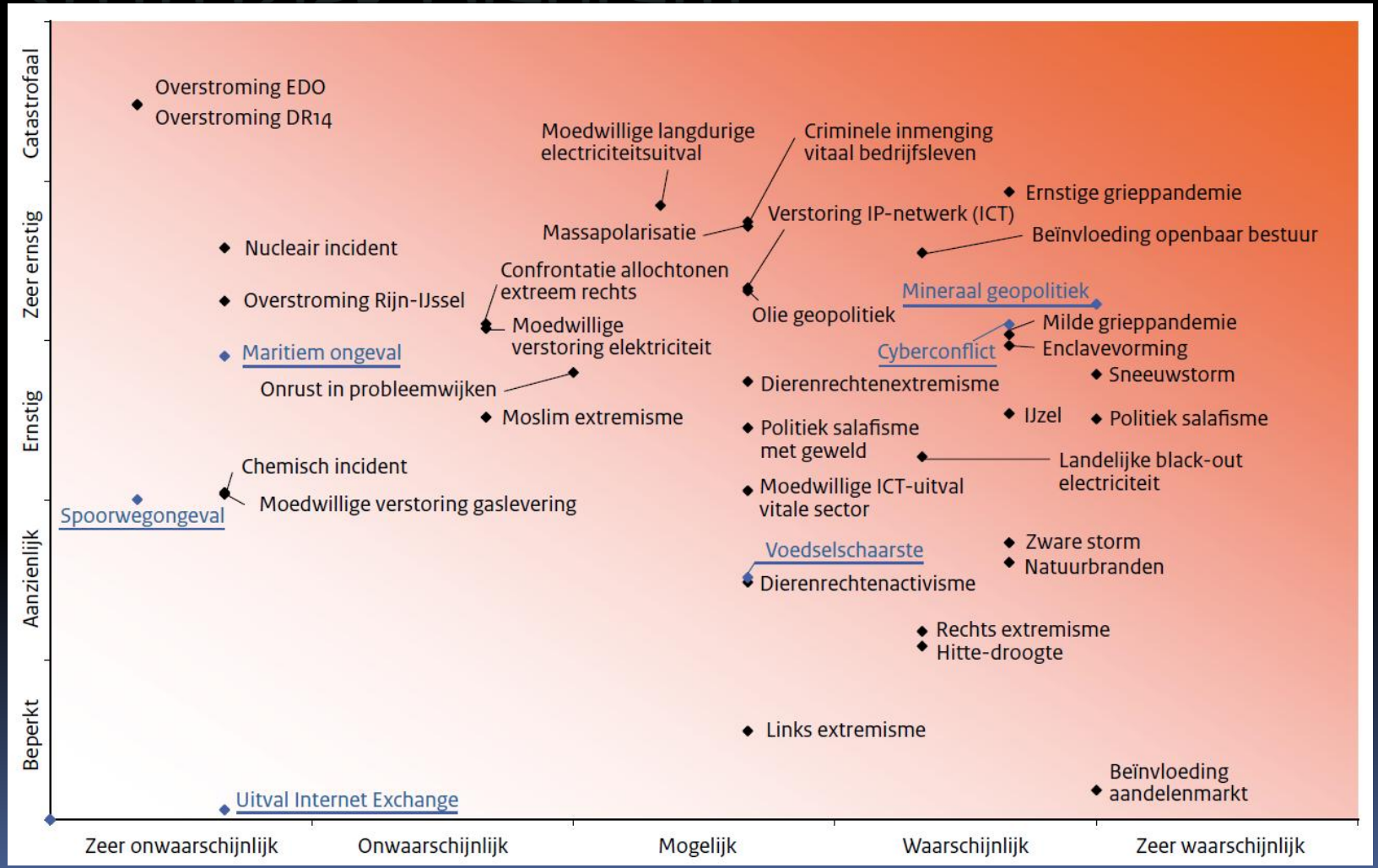
2010 Risk Diagram



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NRA: some reflections (1)

- **Recieves good reviews internationally** (OECD)
- **International Collaboration:** e.g. UK, Singapore, France.
- **NRA moderately succesful nationally:**
  - Not very well known outside the government
  - Kickstarted interdepartmental collaboration
  - Transparant Process
  - Apples and pears
  - Capability planning still politically contested process (obviously!) but some real “successes”

NRA: some reflections (2)

- NRA “Strong” on Risk, “Weak” on Uncertainty?
- “Exhaustiveness” explicitly not an objective; ‘Comprehensiveness’ is.

  (see next section)
- NRA = Instrument to feed capability planning process
- Putting politically sensitive or unpopular risks on the agenda remains a problematic issue

Some (potentially interesting) methods employed in NL foresight and risk assessment

1) 3 Branches of foresight
2) Metafore
3) Statplanet
4) System dynamic modelling
5) Risk dimension analysis

1) 3 Branches of Foresight

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Foresight 1.0

Prima Donna

Foresight 2.0

Analyst Network

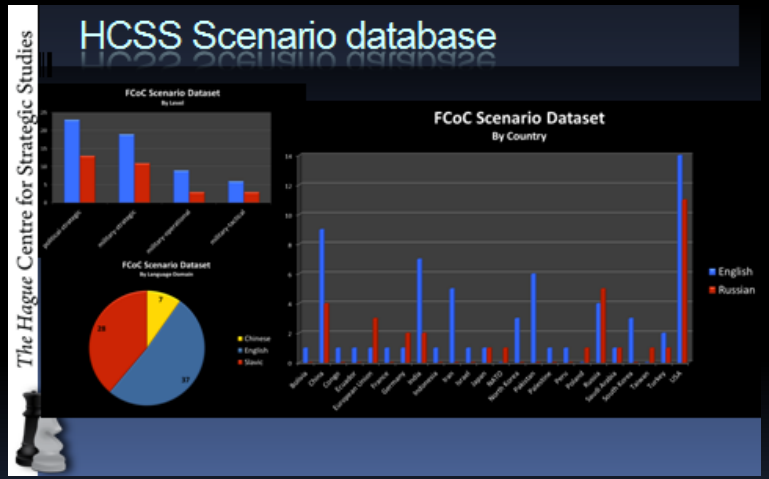
(used in NRA)

Foresight 3.0

Metafore

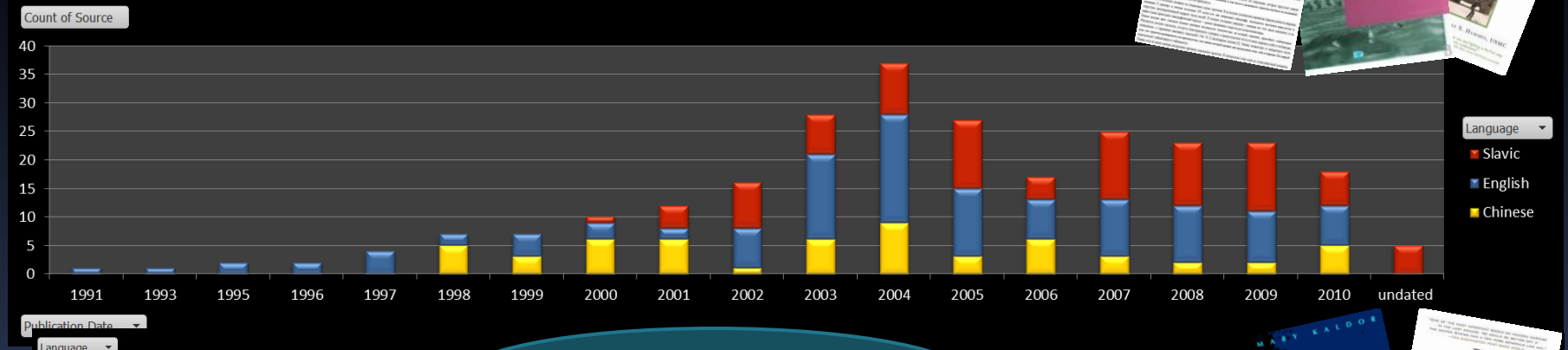
2) Metafore

- **Bandwidth of (expert) views on future developments across language domains**



(used in Government wide Strategic Foresight and Defence Future Survey)

Metafore: sources



Publication Date

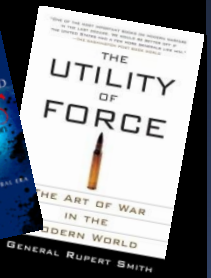
Language

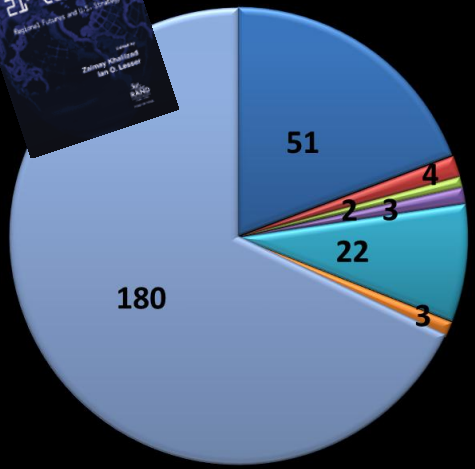
Count of Source

By type

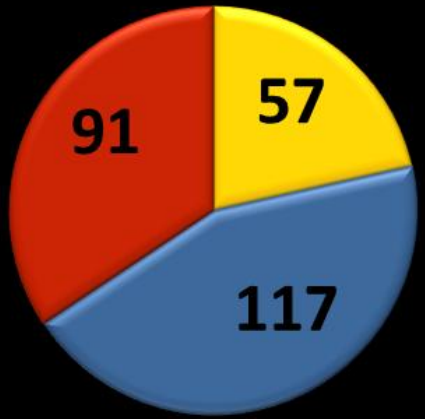
Total: 265 sources

By language





Organization Type
- Books
- Government
- IGO
- Interview
- Military
- NGO
- Research
- (blank)



- Chinese
- English
- Slavic

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Metafore: Coding of Drivers and Parameters

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Drivers

What is likely to drive change in the parameters of the future of 'x'

Parameters

What is it about the future of 'x' that is important and that could possibly change?

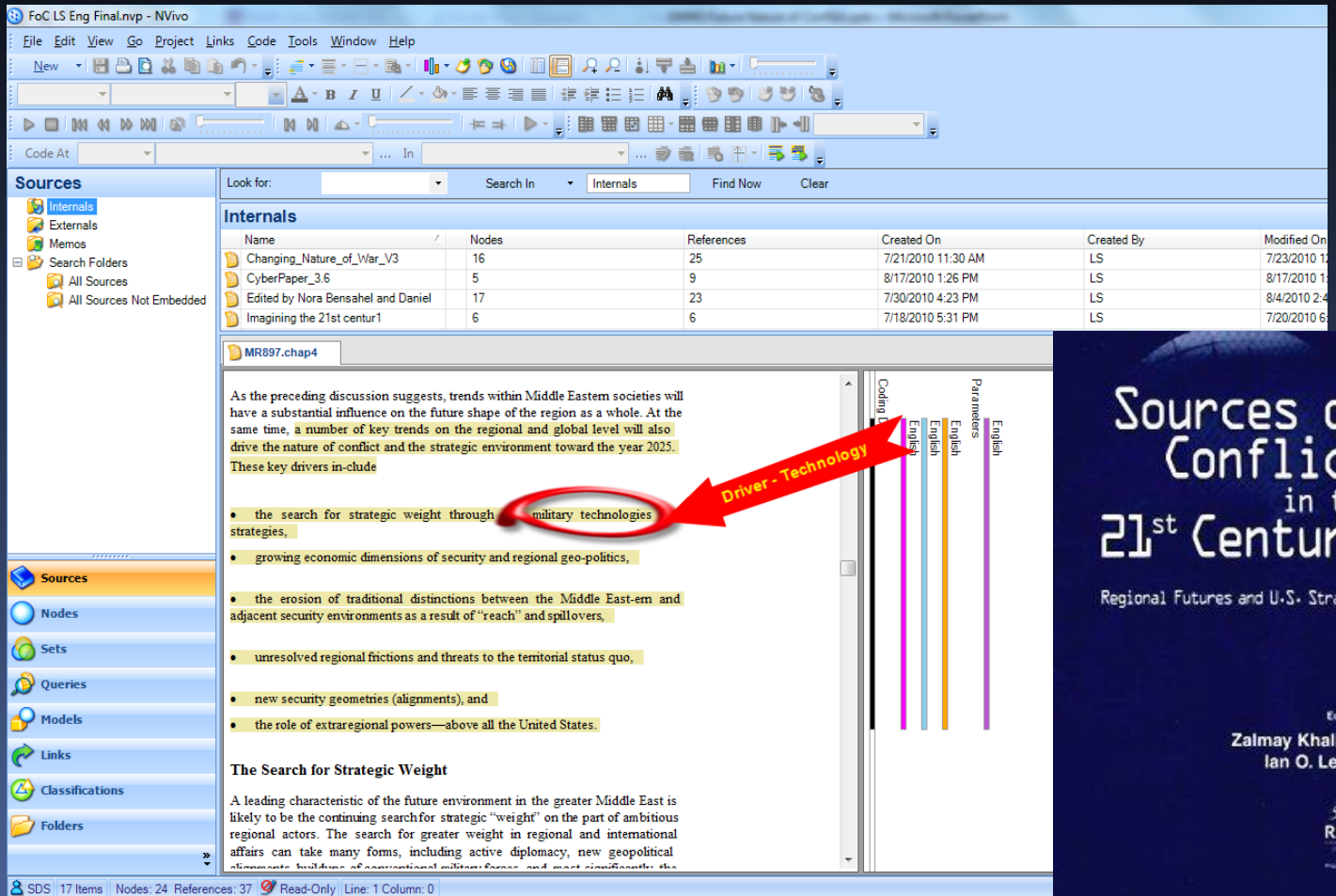
Implications

What are the broader implications of all of this?

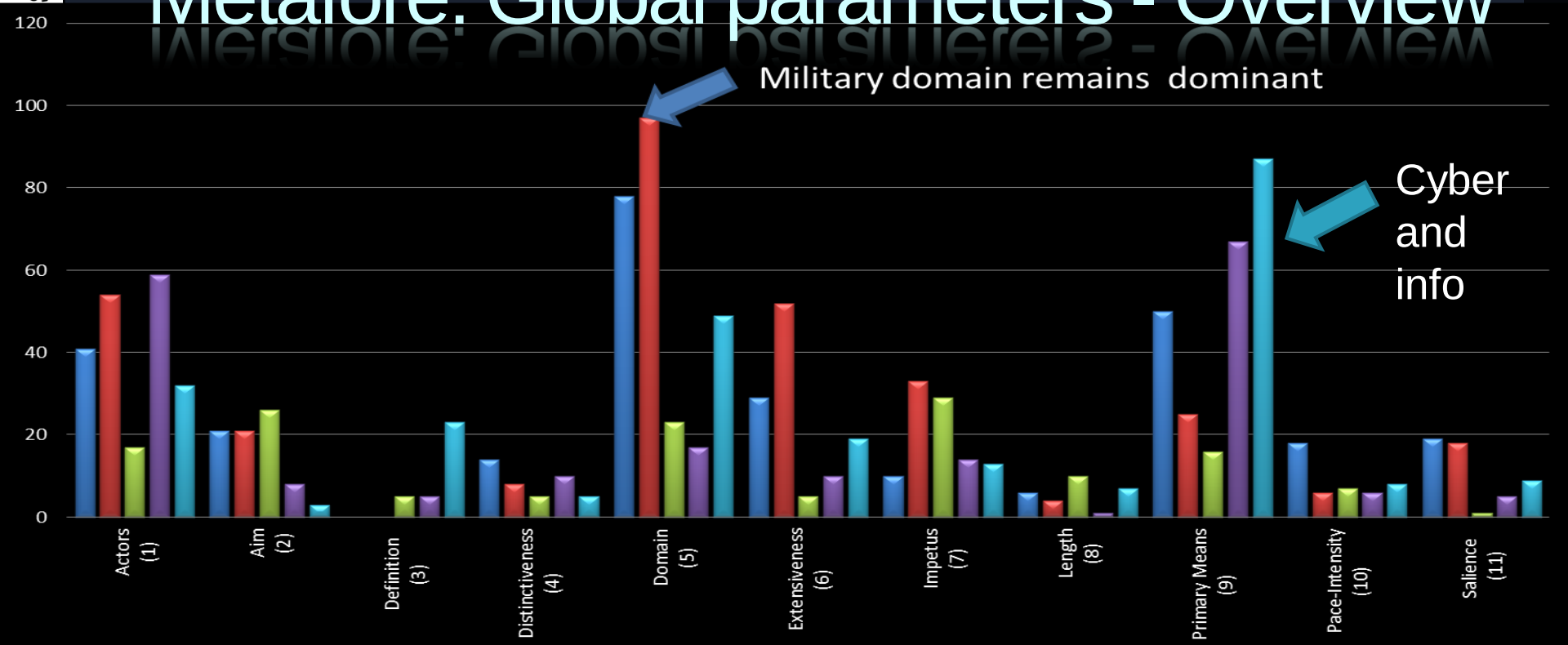
Example – 'Future Conflict's

Drivers	Operationa-lization	Parameters	Operationa-lization
Demographic Factors		Actors	
Military Technology		What	
Strategic Orientation		Domain	
		Instruments	
Fragmentation		Length	
Resource Scarcity		Extensiveness	
…		Distinctiveness	
		…	

Metafore: Coding - Method



Metafore: Global parameters - Overview



	1	2	3	4	5	
Actors	Blocs of States	Pairs of States	State and non-state vs. non-state	State vs. non-state	Non-state vs. non-state	Actors
Aim	Physical degradation	Obtain/retain/occupy	Political/economic degradation	Political/economic degradation	Stabilize	Aim
Definition	War	Militarized interstate disputes	Tensions between non-state actors	Political/economic tensions	Between individuals	Definition
Distinctiveness	Low	Leans low	Medium	Leans high	High	Distinctiveness
Domain	Traditional Dimensions	Modern military dimensions	Political	Economic	Human Terrain	Domain
Extensiveness	Global	Regional	Sub-regional	National	Domestic	Extensiveness
Impetus	Structural	Relationship	Value	Interest	Data	Impetus
Length	Years	Months	Days	Hours	Minutes	Length
Means	Physical	Political	Economic	Electronic/Cyber	Information/ Psychological	Means
Pace	High	Leans high	Medium	Leans low	Low	Pace
Salience	High	Leans high	Medium	Leans low	Low	Salience
	1	2	3	4	5	

Metafore: Parameters – Values across Languages

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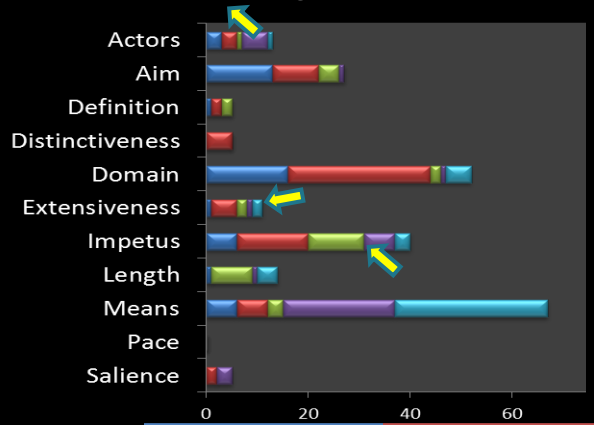

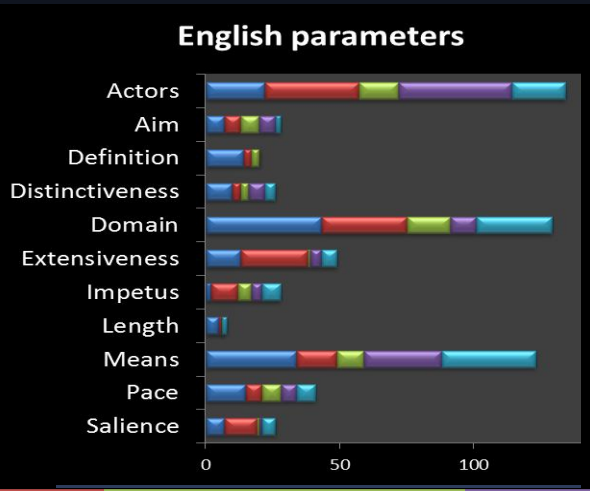

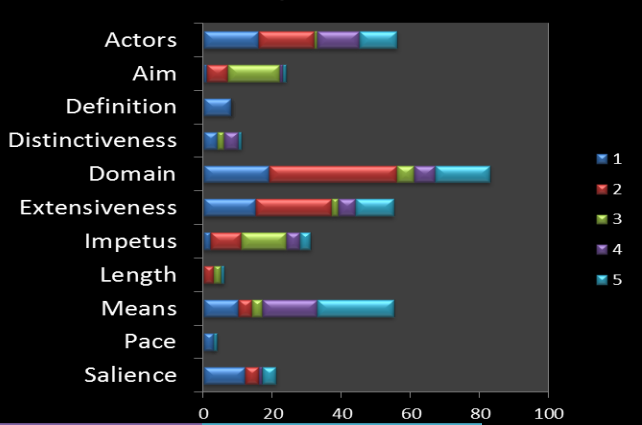

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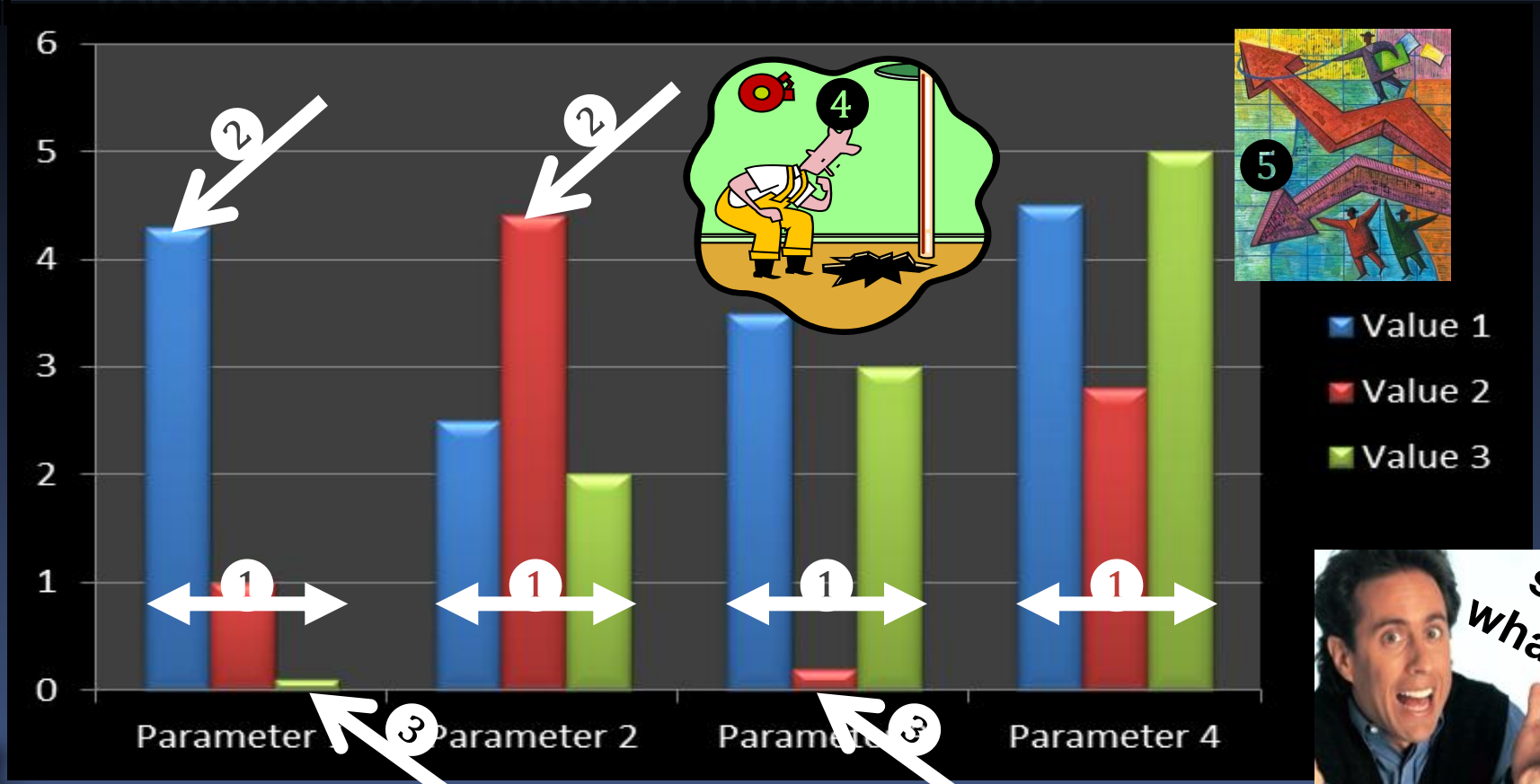
Pace	High	Leans high	Medium	Leans low	Low	Pace
Salience	High	Leans high	Medium	Leans low	Low	Salience
	1	2	3	4	5	

Metafore: (Meta-)Analysis

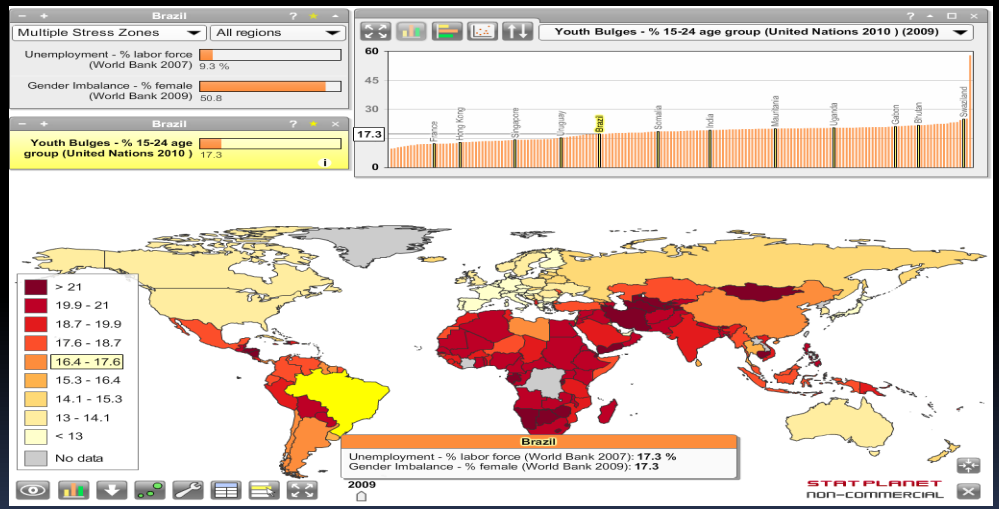


6a. How do we interpret these data (what do we see here?)

6b. What does all of this mean for Security and Defence?

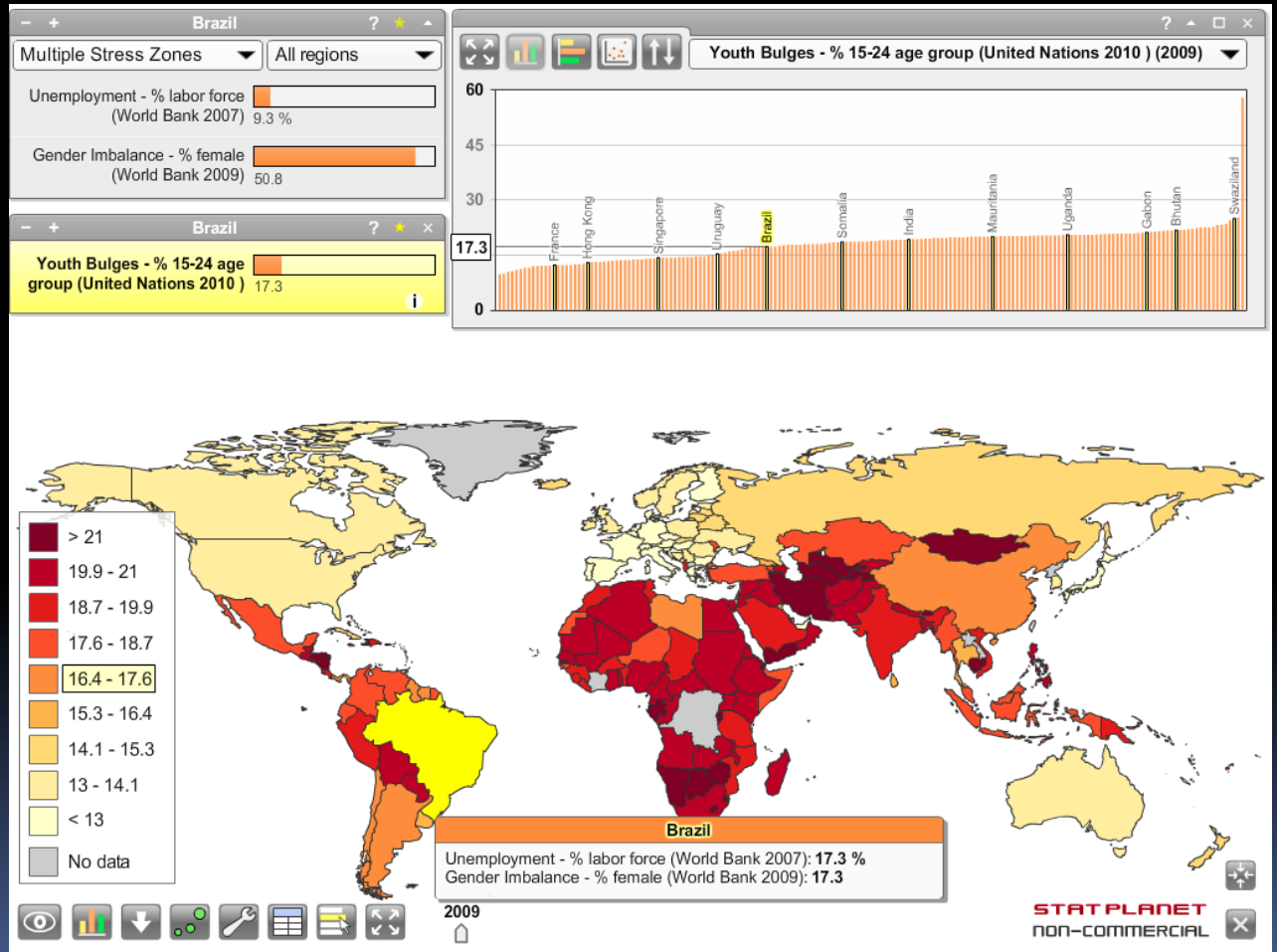
3) Statplanet

- **What do we (think we) know?**
- **Quantifying qualitative assertions**
- **Visualize hypotheses and boundary conditions**



(used in Defence Foresight; work in progress)

Statplanet


Brazil
Multiple Stress Zones
All regions
Unemployment - % labor force (World Bank 2007) 9.3 %
Gender Imbalance - % female (World Bank 2009) 50.8
Brazil
Youth Bulges - % 15-24 age group (United Nations 2010) 17.3
Youth Bulges - % 15-24 age group (United Nations 2010) (2009)
60
45
30
17.3
0
France
Hong Kong
Singapore
Uruguay
Brazil
Somalia
India
Mauritania
Uganda
Gabon
Bhutan
Swaziland
> 21
19.9 - 21
18.7 - 19.9
17.6 - 18.7
16.4 - 17.6
15.3 - 16.4
14.1 - 15.3
13 - 14.1
< 13
No data
Brazil
Unemployment - % labor force (World Bank 2007): 17.3 %
Gender Imbalance - % female (World Bank 2009): 17.3
2009
STATPLANET
NON-COMMERCIAL

4) System Dynamic Modelling

- **Explore multiple futures (parametrized driver input and interaction/feedback loops between drivers)**
- **Simulate (and run) millions of scenarios**
- **Look for “scenario islands” (spikes) in the scenario runs and for outliers**

(used in NRA)

5) Risk Dimension Analysis (work in progress)

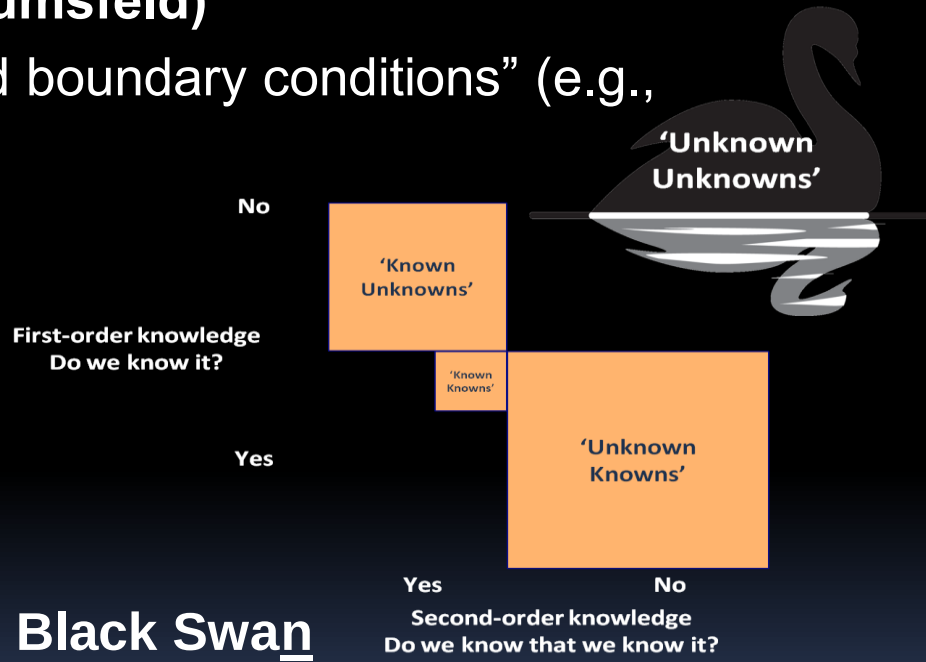
- **NRA: "Exhaustiveness" not key objective; Comprehensiveness'.**
- **Central Issue**: which risks can add to building a comprehensive portfolio of capabilities?
- **Real Question**: Do we cover the risk spectrum?
- **Analysis NRA on Risks** Spectrum
  - **Actors**: perpetrators and victims: e.g. state, corporation, individual, terrorist etc.
  - **Timehorizon**: both of drivers as well as manifestation of risks: e.g. seconds, minutes, hours, days, weeks, months, years etc.
  - **Geographic dimension**: e.g., sea-land-air-space-cyber but also urban versus rural, global, regional, national, local etc.
  - **Threat Type:** e.g., man-made versus natural disaster; upside versus downside; external versus internal; conventional versus "out-of-the-box"
  - **Impact and likelihood** : e.g. high versus low as well as the Five Interests (territorial, physical, economic, ecological , socio-political)
  - **Driving Factors**: e.g., ecological, polarization, demographic, military, technological, energy etc.

Conclusions (1)

- **(Continue to) rethink our approach towards mapping the future**
- **(Continue to) expand and diversify our toolkit in mapping the future (security) environment**
- **Connect ‘orientation’ with ‘navigation’**

Conclusions (2)

- **Need to try to delineate better what we do (think we) know and what we don't know (Rumsfeld)**
  - E.g: through "Parametrized boundary conditions" (e.g., population growth)?
  - How?



- **Embrace the concept of the Black Swan by placing it at the heart of strategic planning (which starts with orientation!)**