

Exporting Safety

Is Safety Contextually and Culturally Dependent?

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The Research Project

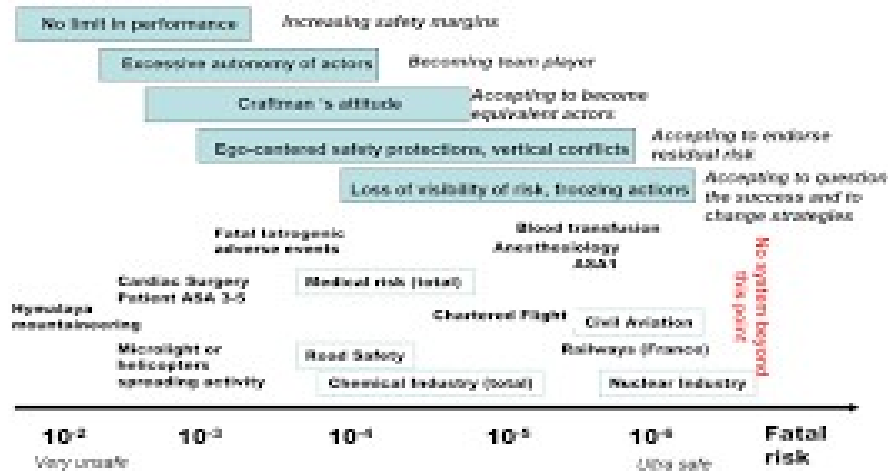
- ENAC-Airbus chair of safety management
- Worldwide commercial aviation safety
 - A dedicated group supports safety in the regions, helping operators and organisations
 - Looking for ways to support different geographical regions in a systematic way
- Project started mid-February
 - 3 months ago





Pre-Pre-Preliminary Thoughts - 1

- High risk technologies mature over time and characteristics vary according to their safety level and type
 - Craftsmen, Equivalent Actors, etc. (Amalberti)
 - This maturing occurs within a context - necessarily including regulatory authorities, certification, training standards, etc.





Pre-Pre-Preliminary Thoughts - 3

- Worldwide accident statistics used to be only by continent
 - National civil aviation accident rates correlate with calories consumed (?)
 - Much more data now, but is it useful?
 - Practices differ, but so do constraints, resources, weather, etc.



Pre-Pre-Preliminary Thoughts - 3

Anecdotes from my personal experience, $n=1...$ but it's a big 1!

Sweden:

Trust and equality and
rainbows and unicorns

Indonesia:

Subjective truth, good vs evil

France:

I don't really know, but...

Is saying "it can't NOT be a factor" proof that it IS a factor?

Does this
surprise you?



(Photo: K. Zimmermann)

Pre-Pre-Preliminary Thoughts - 4

- Lessons to exchange with other industries with worldwide operations
 - Mineral exploration, petrochemical, shipping, finance
 - UN agencies such as the WHO, IAEA, or the World Bank



Pre-Pre-Preliminary Thoughts - 5

- Is civil aviation, and the associated operating framework, “exported” from “The West”? (and Japan and Brazil...)
 - Embraer, IAe/IPTN, Mitsubishi, many Russian manufacturers...



What we know so far:

- Problems that don't fit basic assumptions about aviation
 - Basic food and employment security, stolen equipment, food security, black market economy, armed conflicts...
 - “Predatory” states (vs developmental states)
 - Management part of government “entourage” – change overnight
 - Motivation for starting an airline or becoming a pilot, ATCo, Airline CEO, etc.
 - Planning & concepts of time, fatalism, religion
 - Superstitions



(Photo: Reuters)



What we know so far:

- Studies characterise national culture from an etic, Western point of view
 - “Them” = collectivist; high PDI, UAI, LTO
 - “Us” = individualistic; low PDI, UAI, LTO
 - Helmreich (of LOSA fame) surveyed aviation and medicine (attitudes vs Hofstede)
 - Don't many non-western countries have similar aviation safety practices and similar (or even better) safety records (Japan, Singapore, S. Korea, Taiwan, UAE...)
- Existing culture measures are old, crude, and simplistic
 - Yet have been replicated, appear stable

What we know so far:

- Culture definitely matters for marketing (but not for safety?)
 - Ratio of studies is 5:1
- Recent correlation (causation?) found by Eurocontrol et al.
 - Power distance and safety culture survey responses
- Safety culture is normative: For good X, organisational culture must be Y
 - E.g. for CRM and reporting one MUST have: low power distance, non-punitive, individual responsibility



2008 Survey of Safety I vs II in Aviation

“Same equipment, same rules, same procedures... different heads.”

(Published results in Resilience Engineering in Practice)

Intended to compare the underlying safety assumptions across aviation professional cultures (ATCos, pilots, engineers, mechanics)

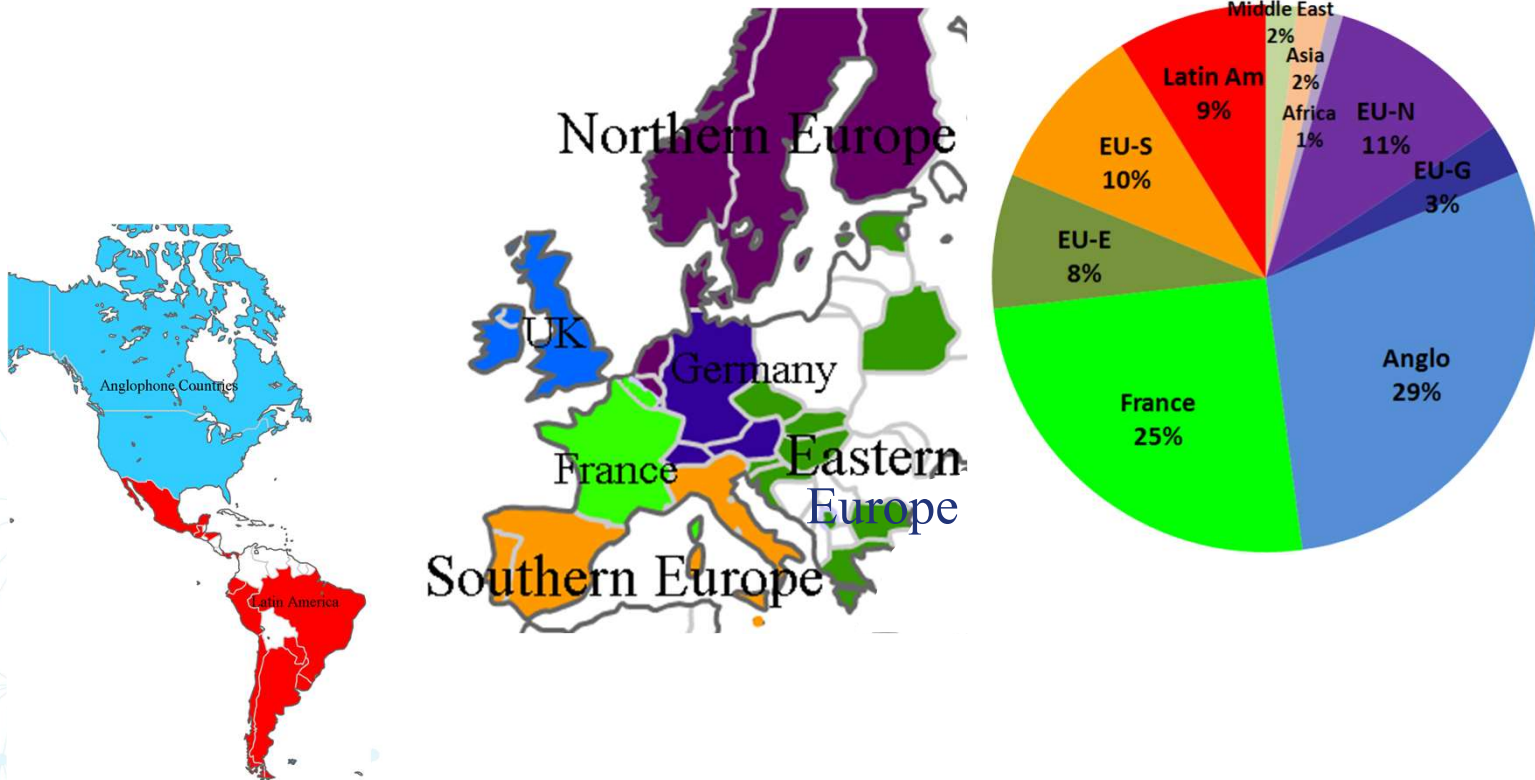
Resilience vs Traditional assumptions about safety (Safety I vs II?)

- People are the cause of accidents vs people create safety
- Rules guarantee safety vs rules are imperfect
- Systems (and accidents) are linear, Newtonian, Cartesian, proportional, vs systems are complex and emergent
- HF = Errors, errors, errors...



The 705 Respondents by Region

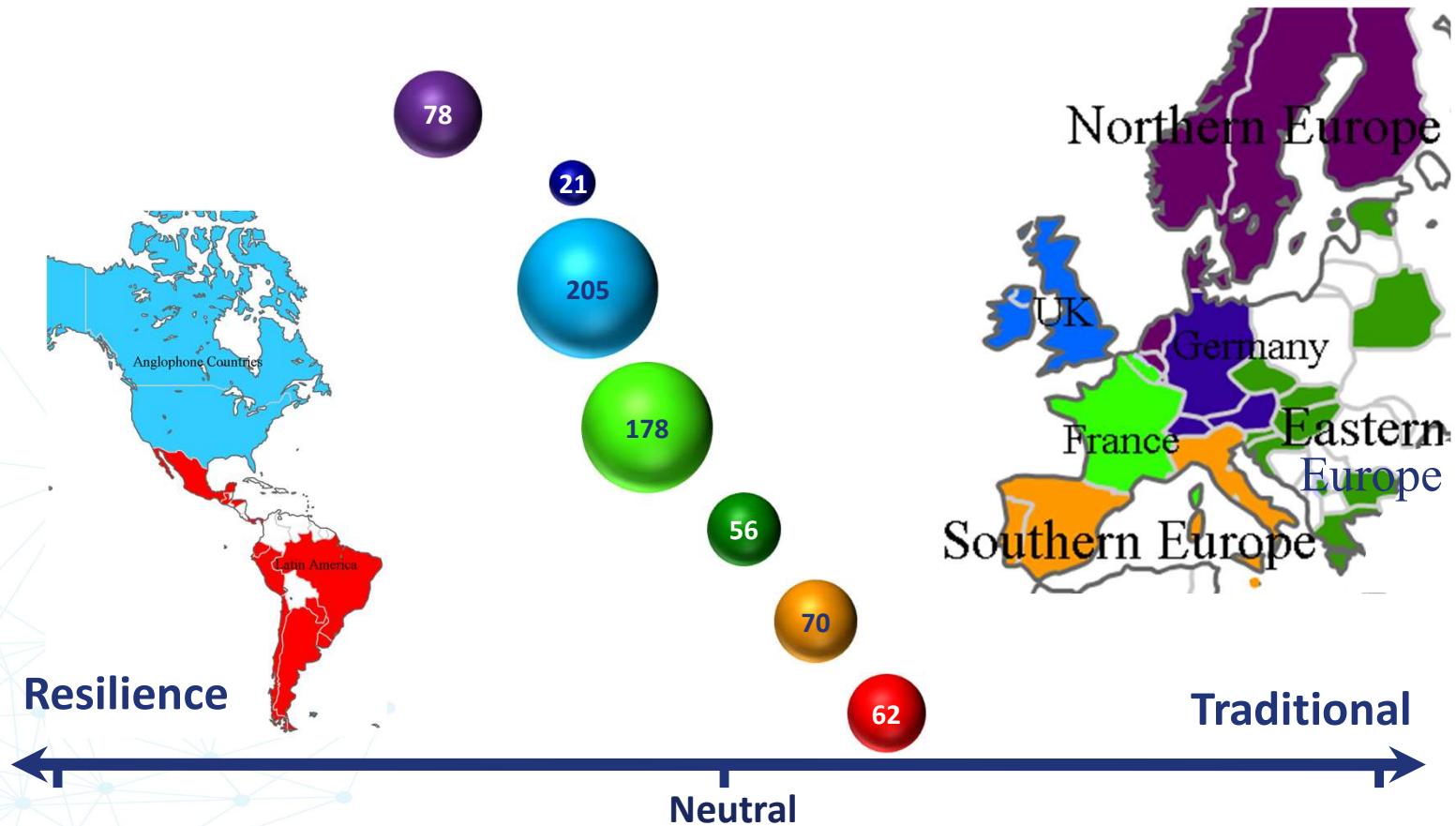
Reference for the regions: GLOBE Study (House, 2004)





The Responses by Region

Agree with the Resilience or Traditional Perspective





Questions for Discussion:

1. What else do we know? Where else should we look?
2. Can companies “export” safety along with their products?
Can ICAO define how to create safety in a standard way for everyone, everywhere?
 - If so, how?
 - If the context is Safety I: (Problem = Technology, Solution = Fix) an OEM has no mandate or authority with respect to organisational factors
 - If not, why not? Is there necessarily a (slow, gradual) evolution of a local operating context to attain safety levels similar to that of the regions where these technologies originated?



More Questions for Discussion:

3. Are organisations in emerging economies Safety I by default? Is anyone anywhere really Safety II? Does everyone necessarily have to evolve from Safety I to II?

- What is the minimum required to be “mature” enough to make progress?
- Relationship between education levels and basic food/job security, etc.
- Is it smart to promote Safety II? Would that omit important steps and miss low-hanging fruit?

4. Is culture or region a red-herring (or codfish)?

- Motivating an organisation to “improve its safety culture” and change behaviour is a challenge even under ideal circumstances
- Contextual factors:

Type of state x regulatory framework x type of operation (Legacy or state run or LCC) x ?



Obrigada!

Please email me with any suggestions, comments, insights, references, critiques, praise, tarte tatin recipes, etc.

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 (don't forget the additional German thoroughness)