

FRONTIERS

science journalism initiative

Science Journalism of “Frontier Research”



Context

Focus: Science Journalism

Subject of interest: Frontier Research

Context

- Frontier Research
 - Only the **project's subject / topic of interest** will be evaluated
 - Not the research itself
 - Not the researcher
 - Not the research institution
- Project's subject / topic of interest
 - Should **focus on**:
 - Frontier Research; OR
 - The pathway towards Frontier Research

How to self-assess?

- Ask questions / Consult
- Use the suggested tools
- Potential resources:
 - The Researcher(s)
 - Research advisors
 - Research institutions contact persons
 - Peers
 - Web sources (ERC, Google scholar, Google, Scopus, etc.)
 - Any other

What is or can be considered
“Frontier Research”?

Elusive



Common Indicators / Attributes

- Basic research (unlike applicative research)
- Tapping into uncharted water
- Pushing the boundaries of knowledge
- Founded on new principles and / or new conceptions
- High conceptual scientific risk(s) are involved
- First / best in class
- Addressing complex global challenges
- and more...

Too general / inclusive

**Breakdown
to elements**

Evaluation tools



Tools: Knowledge gap

- Major research question, unresolved issue
 - Significance
 - Larger / wider
- Relative to the State-of-the-Art (SOTA)
 - SOTA is merely a stepping stone
 - Avoid 'more of the same'
- Focused and clear
 - In saturated areas (e.g. AI...) – the bar is higher

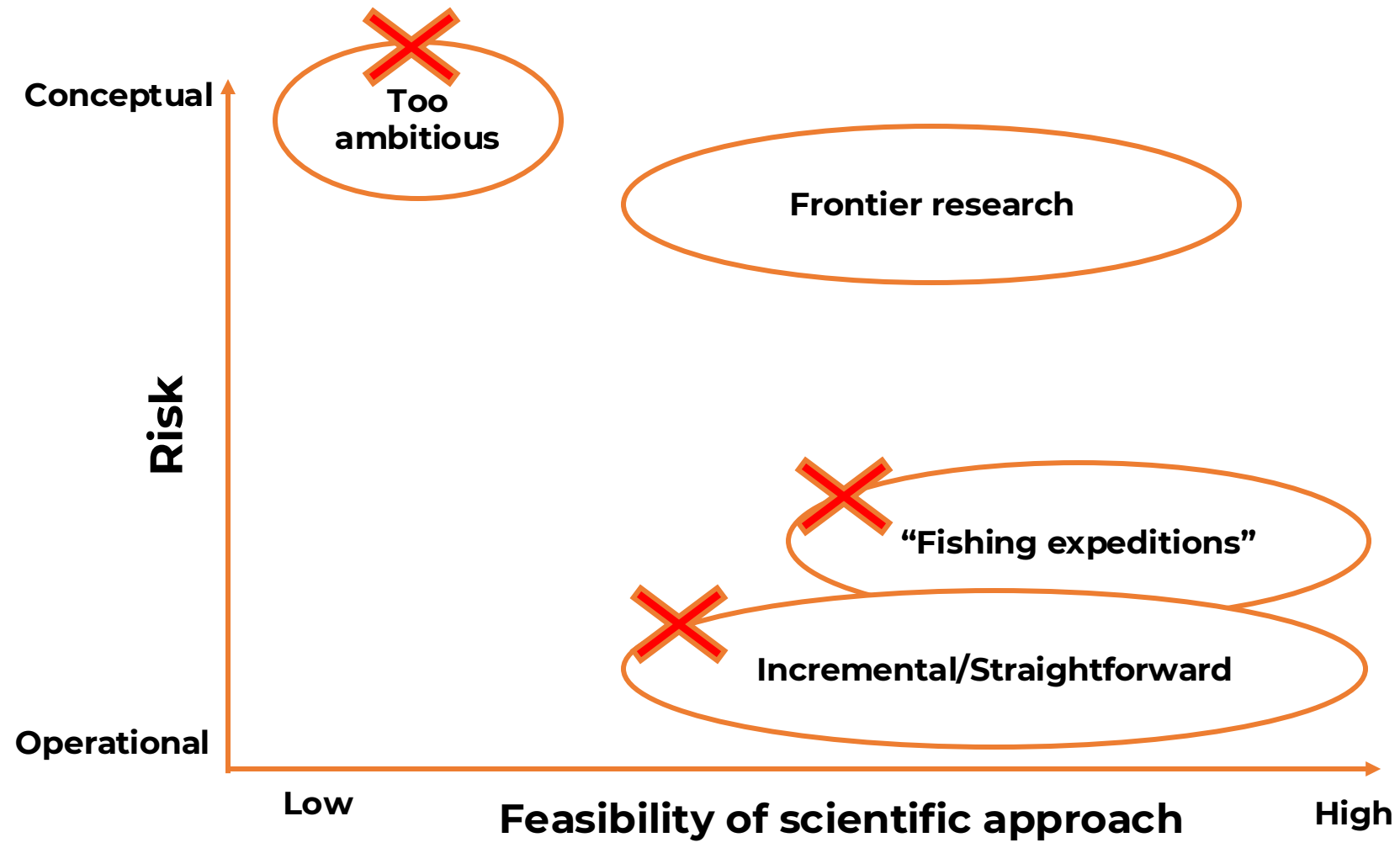
**Dramatic
Distinctive**

Tools: Incrementality

- Relative
 - To (any) SOTA, including industry
 - New to the PI/lab or to the community?
- Conceptual
 - How big is the leap forward? Link to risk & knowledge gap
 - How far it is from known / potential correlations or patterns?
- Indicators
 - Research uncertainty – level of assumptions
 - Stepping out of the “comfort zone”

**Non-Incremental
Daring → Risk**

Tools: Risk



Tools: Impact / Gain

More

- Scientific
- Major / Disruptive / Significant
- Global scale
- Wider scope
 - Impact on other disciplines

Less

- More of the same
- Confirming / Verifying
- Limited in scope
- Local

Tools: Scope

More

- Basic research
- Novelty
 - Significant knowledge gap
- Non-incremental
- High risk
- High gain

Less

- Applicative research
 - Engineering
 - Clinical
- Incremental
- Lower risk / gain
- Less dramatic / Trivial
- Questionable novelty

Tools: Scope

More

- Theory-/ Hypothesis-driven
 - Guiding the research
 - Attempt to predict the outcome
 - Daring / Failure is an option
 - “In situation X, Y **would do Z**”
 - “Our new approach where X is the core mechanism **will positively influence Y**”
- Solution
 - “**Our solution to X is Y**”
- Harder to make headlines

Less

- Observational
 - Data-driven / Not trying to predict
 - Less risky / Many ways around failure
 - “We explore how Y **behaves** in situation X”
 - “We look at different factors that **may influence Y**”
 - “we collect and analyse data **to find what influences Y**”
 - “Fishing expeditions”
- Solution
 - “We **aim to find** a solution to X”
- Easier to make headlines

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