

Why preference elicitation is not expert judgement

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Motivation

- ▶ Denis Lindley often quoted Bruno DeFinetti:
 “We should think about things.”
Trivial advice perhaps, but so, so pertinent.
- ▶ When I was young we had so few tools that we could nothing but think!
- ▶ But today the temptation at the outset of a project just to grab data, calculate, analyse, get results is so great ...
- ▶ We must force ourselves to pause and think about the fundamentals of our analyses before beginning.
- ▶ So I want to think a little more about the structure of risk and decision analyses ... especially ones that are sufficiently large and important to draw in expert judgement studies.



Science and Values

- ▶ Science – what might happen
 - seldom a single science view
 - subjective, controversy, debate
 - uncertainty
- ▶ Values – how much it matters if it does
 - subjective
 - often relate to intangibles
 - different stakeholder perspectives



Players in a decision

Science

Experts

Forecasts of
what might happen

Values

Stakeholders

Accountabilities
and responsibilities

Decision Makers

Process
expertise

Analysts

Players in a decision

- Stakeholders can have VERY different values
- Much wider range of disagreements than between experts over uncertainties
- Politics with a CAPITAL 'P'

Key questions in decision making

- ▶ What are our concerns?
 - (lack of) understanding of world
- ▶ What are we trying to achieve?
 - values & objectives
- ▶ What might we do to achieve this/these?
 - actions/strategies
- ▶ What might happen out there?
 - uncertainties about external world
- ▶ What might result?
 - consequences
- ▶ How much it matter if it does
 - impact

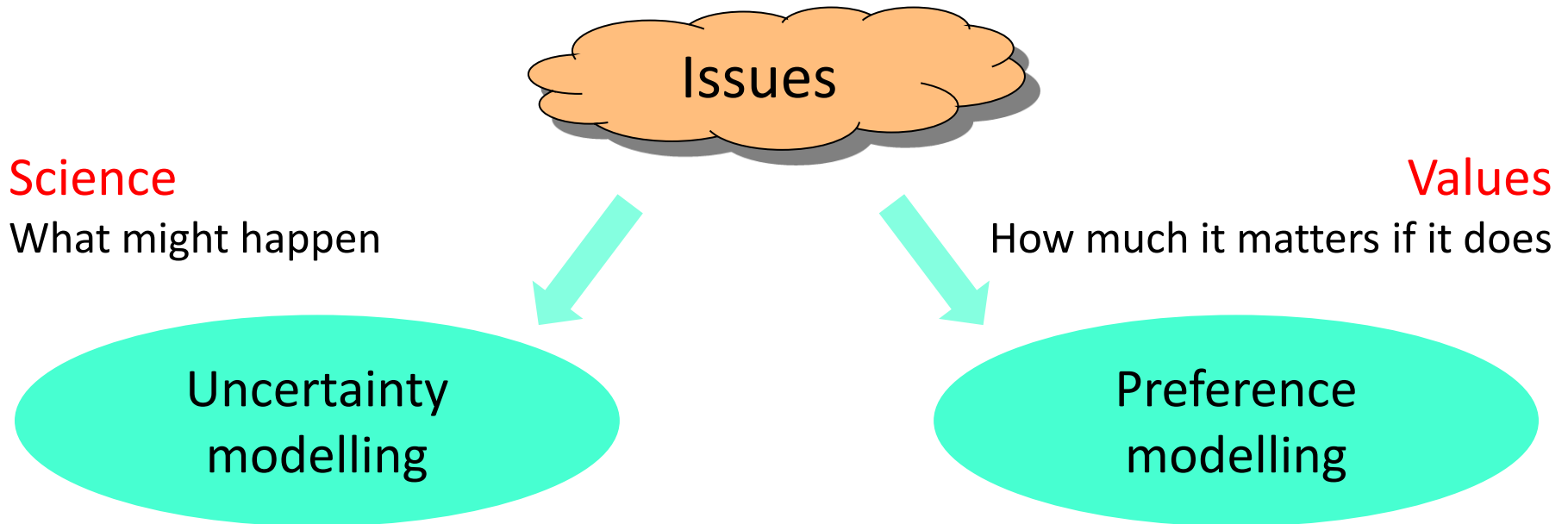


Key questions in decision making

- | | |
|--|---------|
| ▶ What are our concerns?
– (lack of) understanding of world | SCIENCE |
| ▶ What are we trying to achieve?
– values & objectives | VALUES |
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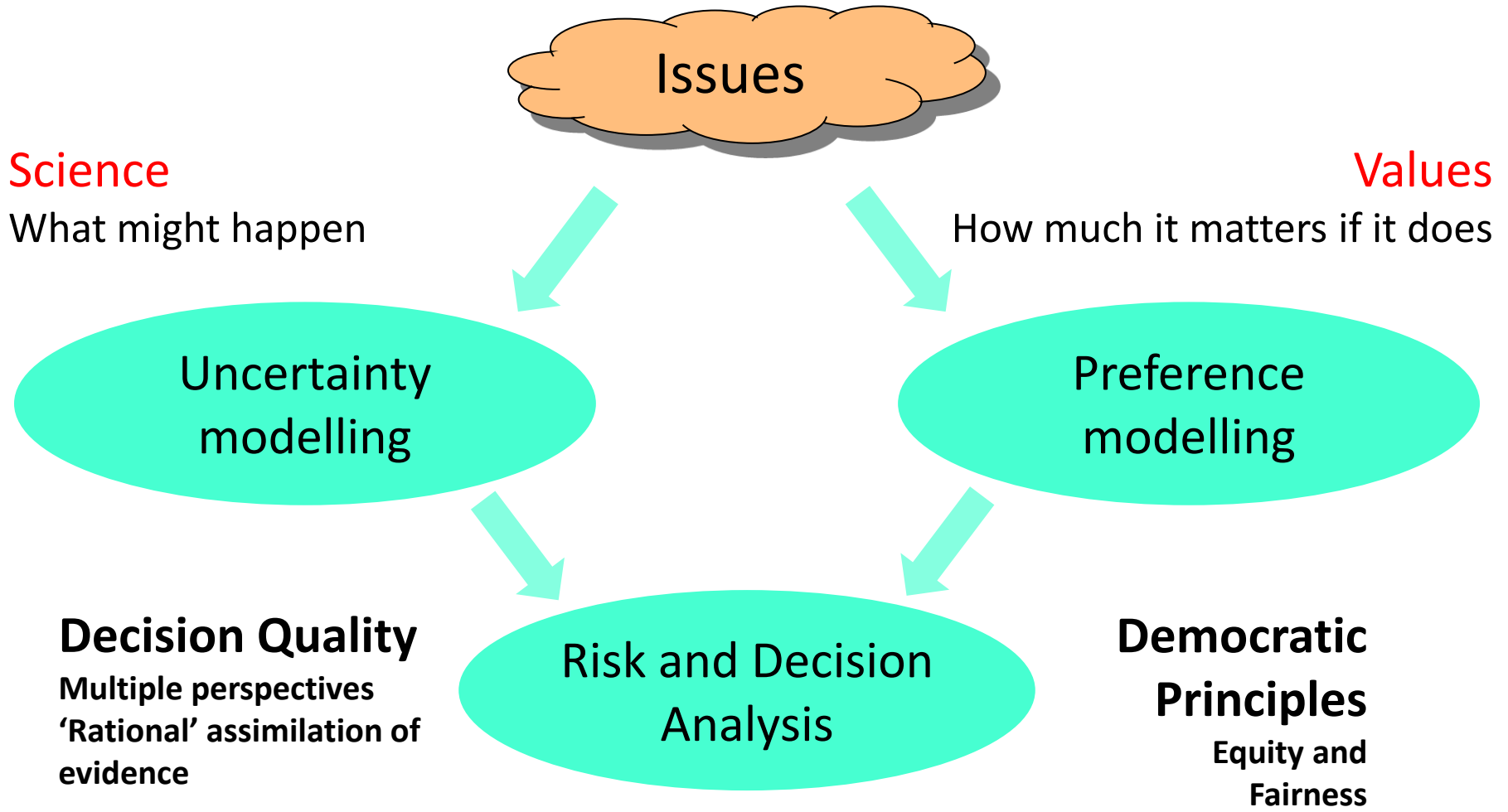


Risk and Decision Analysis

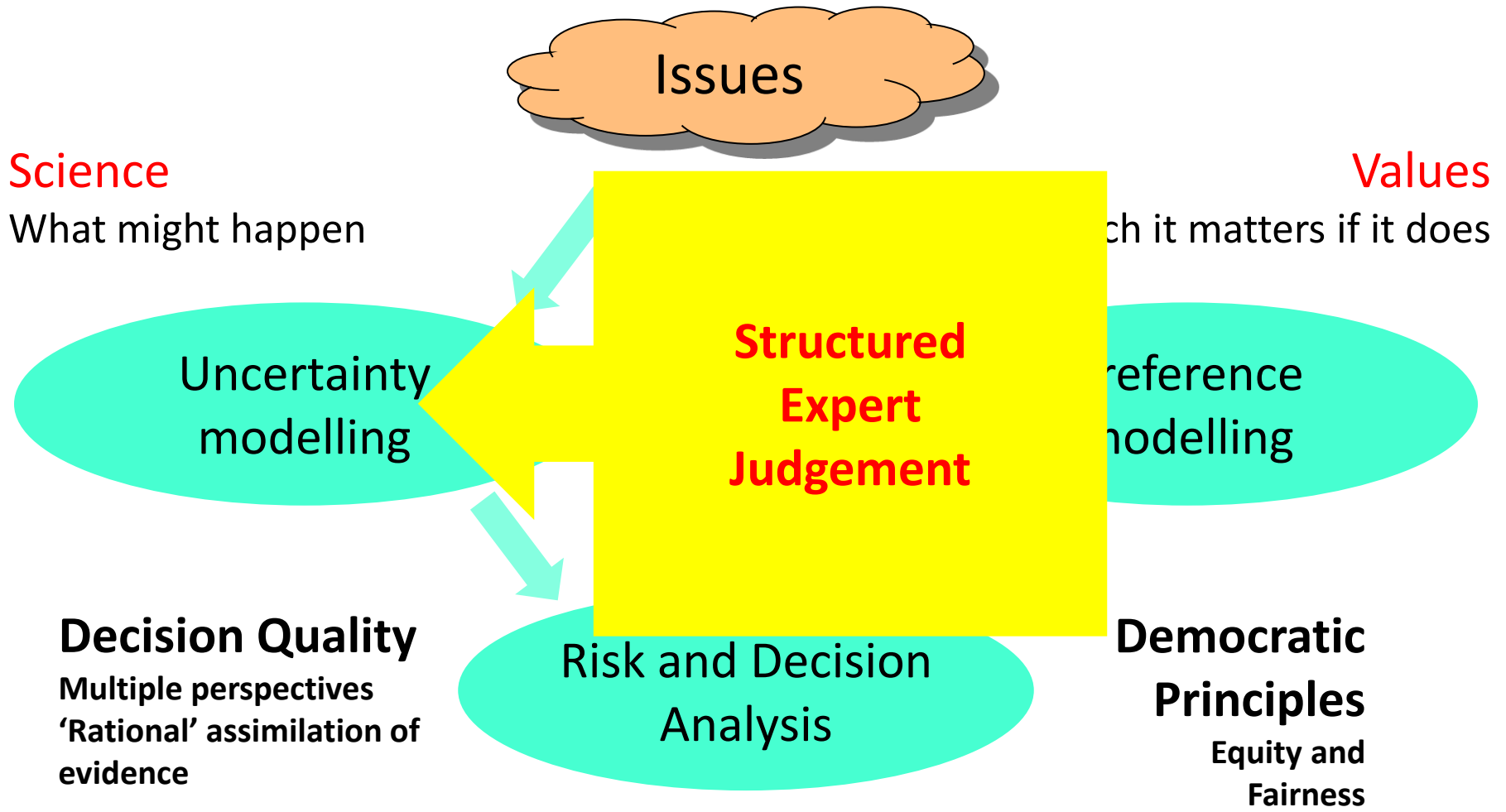


Almost all paradigms to risk and decision analysis make this split

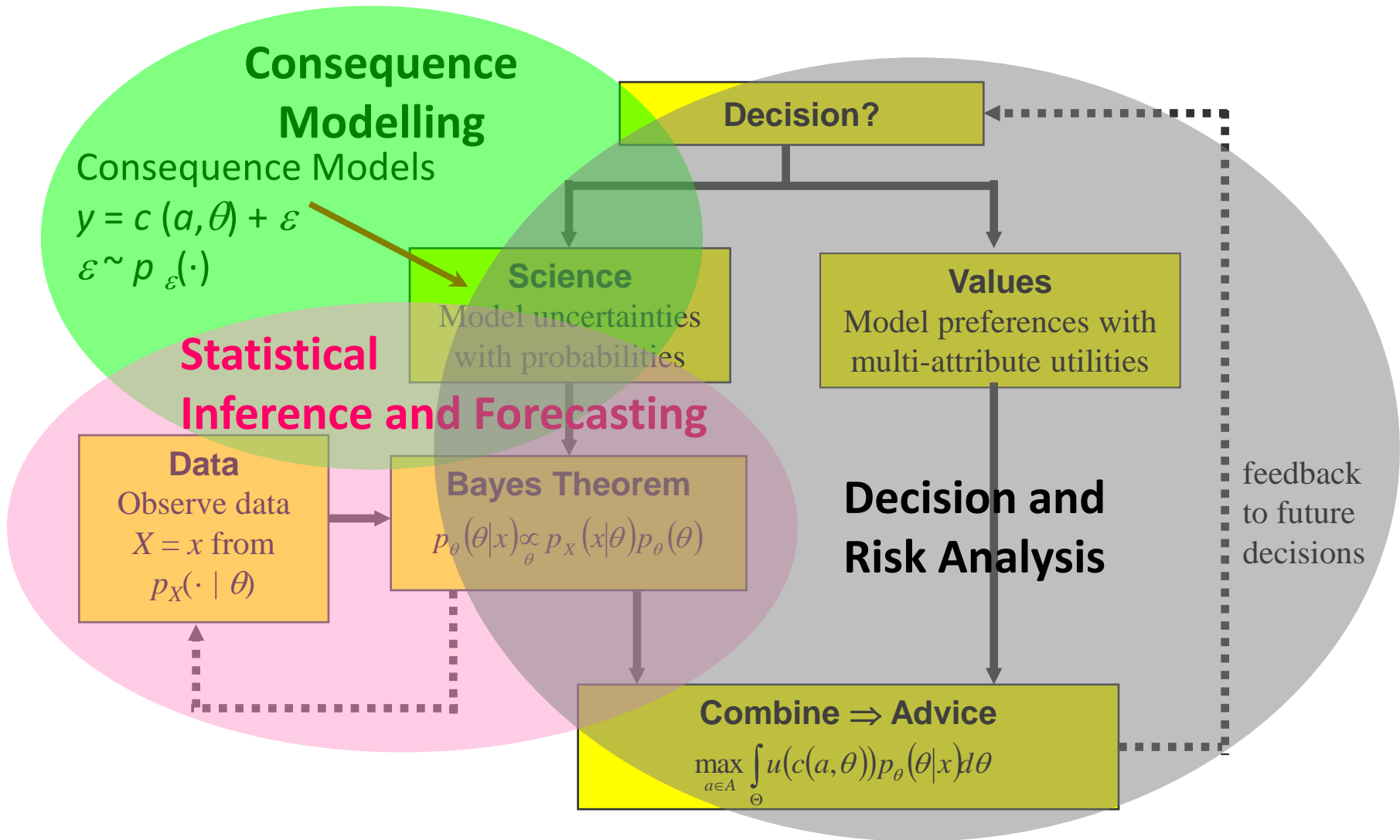
Risk and Decision Analysis



Risk and Decision Analysis



The Bayesian DA Paradigm



Groups of Decision Makers

- ▶ However, the Bayesian model is individualistic
 - does not extend to democratic groups
- ▶ But nothing does
 - Arrow's theorem, game theory & paradoxes
- ▶ Only individuals make decisions
- ▶ Groups are social processes which translate individual choices into action
 - group processes are longer lasting than a single decision
 - horse-trading

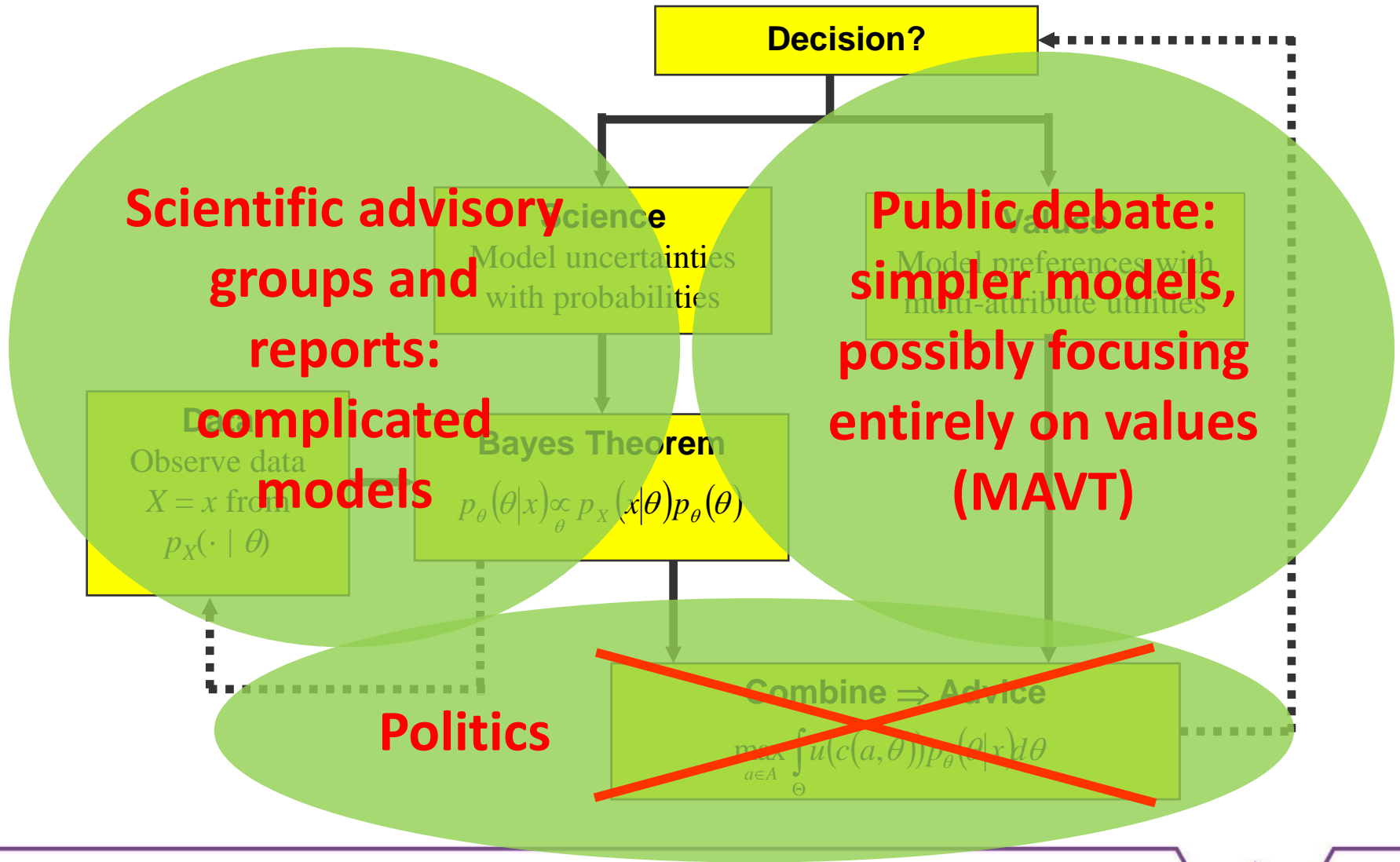


Group Decision Support

- ▶ Groups and organisations tend to share values and uncertainties
 - Organisational correlation
 - Common objectives
- ▶ So can use a common analysis plus sensitivity analysis
- ▶ Enables each member to form and understand
 - Their own perspective
 - Each other's and so communicate
- ▶ Society is larger!
 - Stakeholders hold disparate often conflicting values
 - There is *no* common analysis near enough each stakeholder perspective to shed light on consensus or least a political achievable solution



The Bayesian DA Paradigm



Participatory democracy

- ▶ A few decades ago Western political systems were representative democracies and in many ways paternalistic
- ▶ But during the 1970s-1990s, there was a growing loss of confidence in some of the decision making
 - Especially technological decisions
 - ‘acceptable’ risk became an unacceptable term
 - Democratic deficit
- ▶ Public participation and stakeholder engagement has grown since the late 1980s
 - Especially with regulators and government agencies
 - ESF TED Towards Electronic Democracy Network



Asking experts for preference information

- ▶ is undemocratic in societal decision making
 - paternalistic
- ▶ We *could* ask for their predictions of a public vote
 - A return to the ‘acceptable risk’ approach
- ▶ We will lose confidence of the public and stakeholders ***unless we actually consult them***
 - Stakeholder workshops, citizen juries, web forums, opinion polls, etc.
 - All individually questionable but using several is certainly more democratic than asking experts

