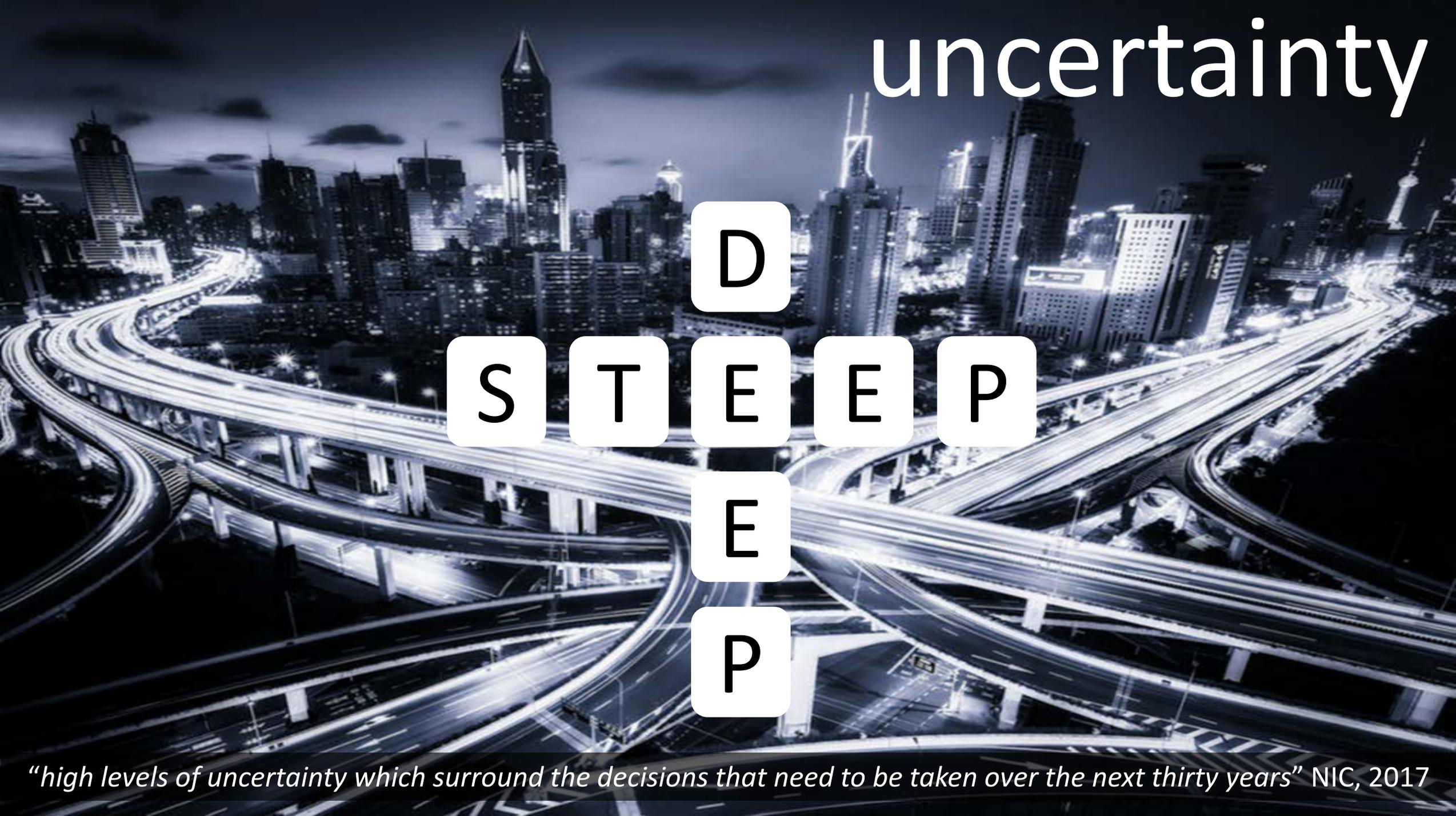


Opening out and closing down uncertainty in transport planning: purpose, procedures and people

Glenn Lyons and Greg Marsden



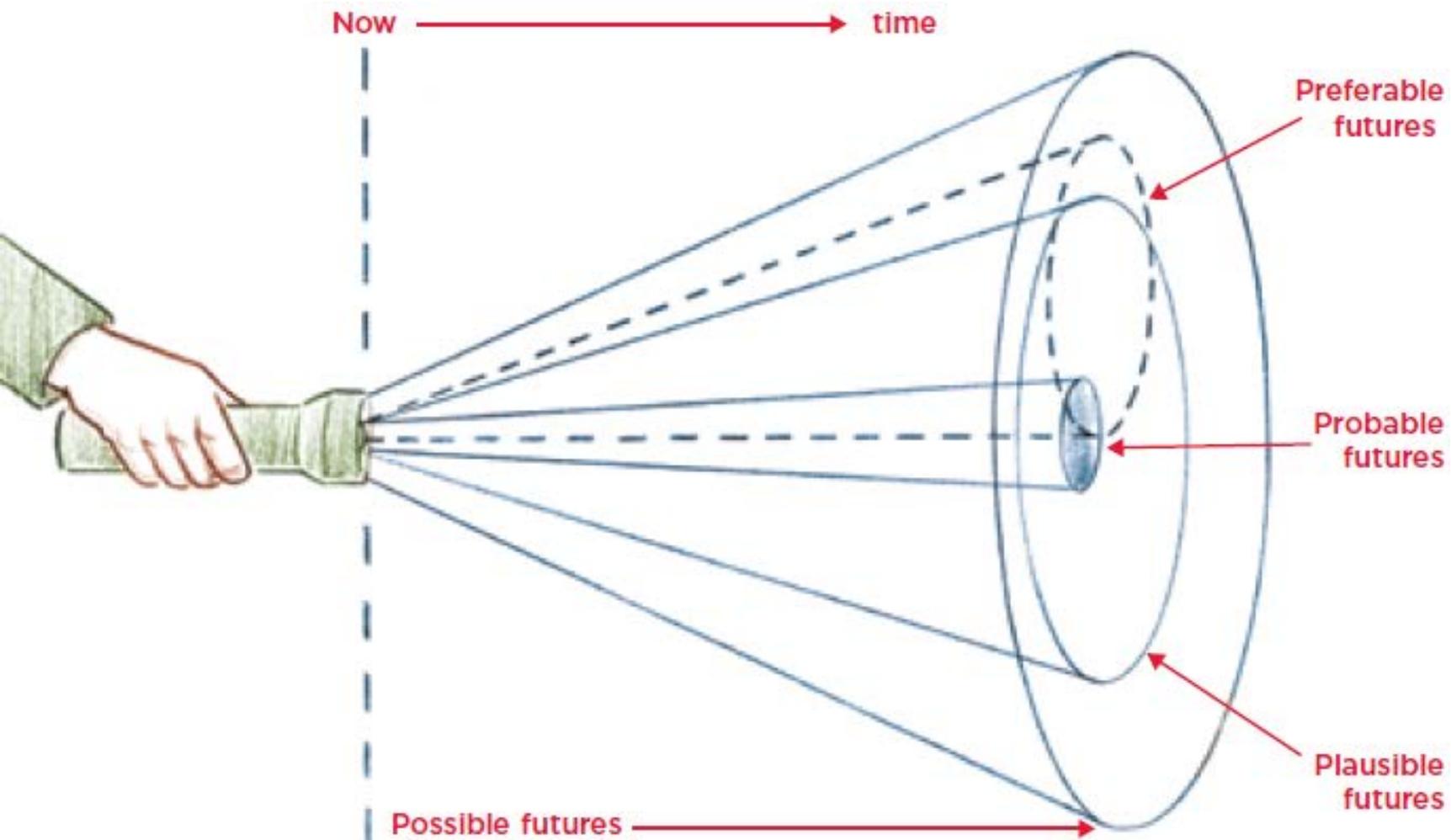
uncertainty

D
S T E E P
E
P

“high levels of uncertainty which surround the decisions that need to be taken over the next thirty years” NIC, 2017

opening out

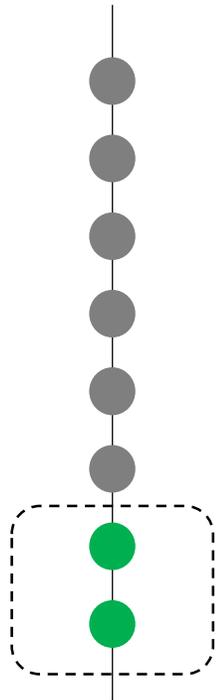
embracing the extent of uncertainty faced



closing down

narrowing the plurality of futures for the purposes of informing targeted policymaking action

unlikely



likely



scenarios

	1	2	3	4	5	6	7	8
A	●	●	●	●	●	●	●	●
B	●	●	●	●	●	●	●	●
C	●	●	●	●	●	●	●	●
D	●	●	●	●	●	●	●	●

purpose

... of the decision making task and why uncertainty matters to it

procedures

... which define how opening out and closing down happen

people

... conducting such exercises and their motivations, agency and social-psychological limitations

purpose.

planning concerns...



anticipating
responding to
influencing

c h a n g e

...and negotiating uncertainty

[Home](#)

Guidance

The Green Book: appraisal and evaluation in central government

From: [HM Treasury](#)
Part of: [Government Finance Function](#)
Published: 18 April 2013
Last updated: 11 November 2016, [see all updates](#)

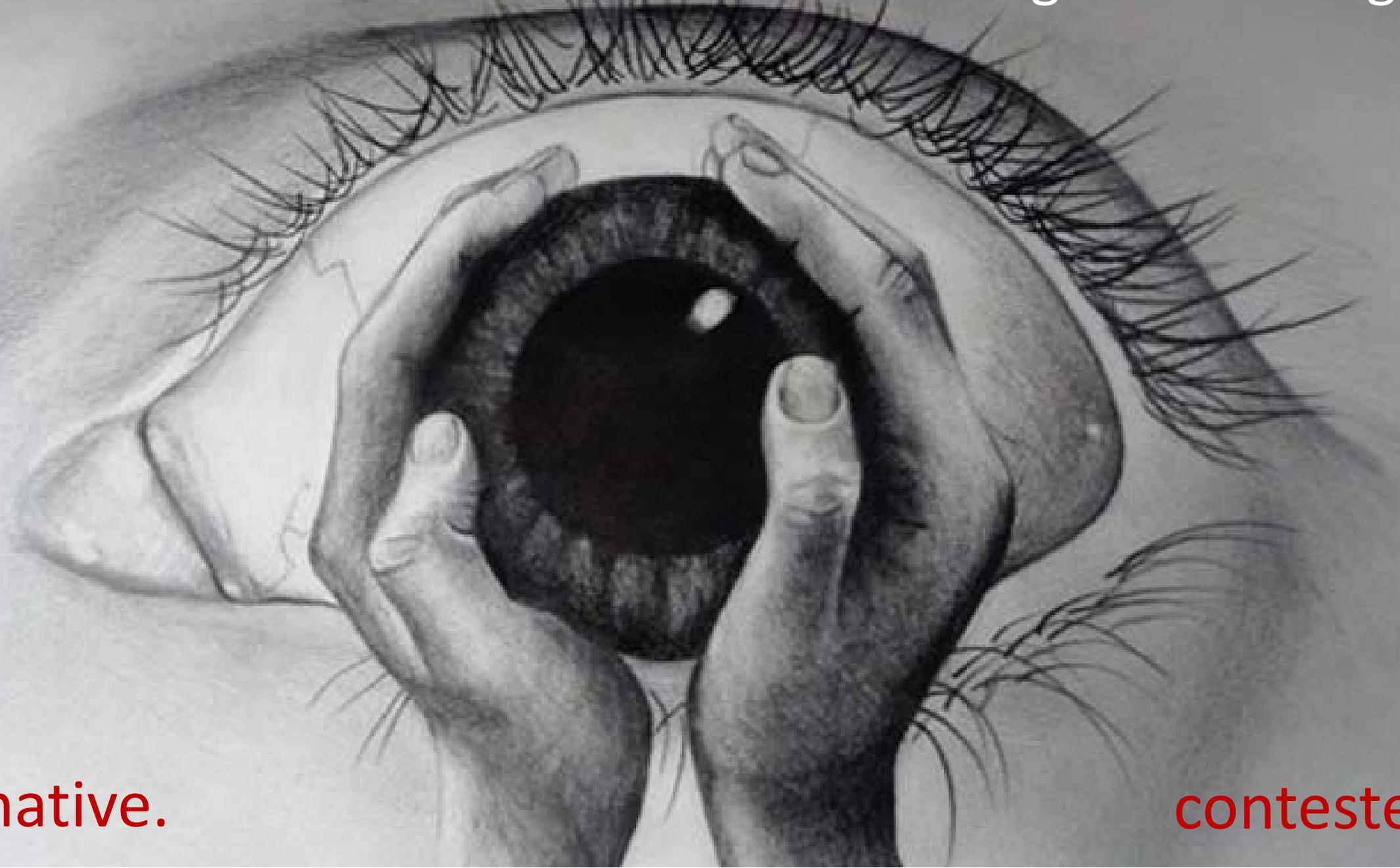
HM Treasury guidance for public sector bodies on how to appraise proposals before committing funds to a policy, programme or project.

application of a “*proportionate assessment*” and
in the context of “*risks, uncertainties and inherent biases*” to
provide a “*reasonable understanding*”



justification of effective stewardship of public funds and
public interest is an important reason for making sense of
uncertainty to a degree that is **proportionate and reasonable**

what is deemed reasonable and who is doing the deeming?



normative.

contested.

procedures.

road traffic forecasting



scheme appraisal

← *scenario planning*

National Transport Model

1969 - 2015

“a systematic means of comparing the national consequences of alternative national transport policies or widely-applied local transport policies, against a range of background scenarios which take into account the major factors affecting future patterns of travel”

population – number of tripmakers

income (GDP/capita) – level of tripmaker’s financial resource

fuel price – proxy for unit cost of road travel

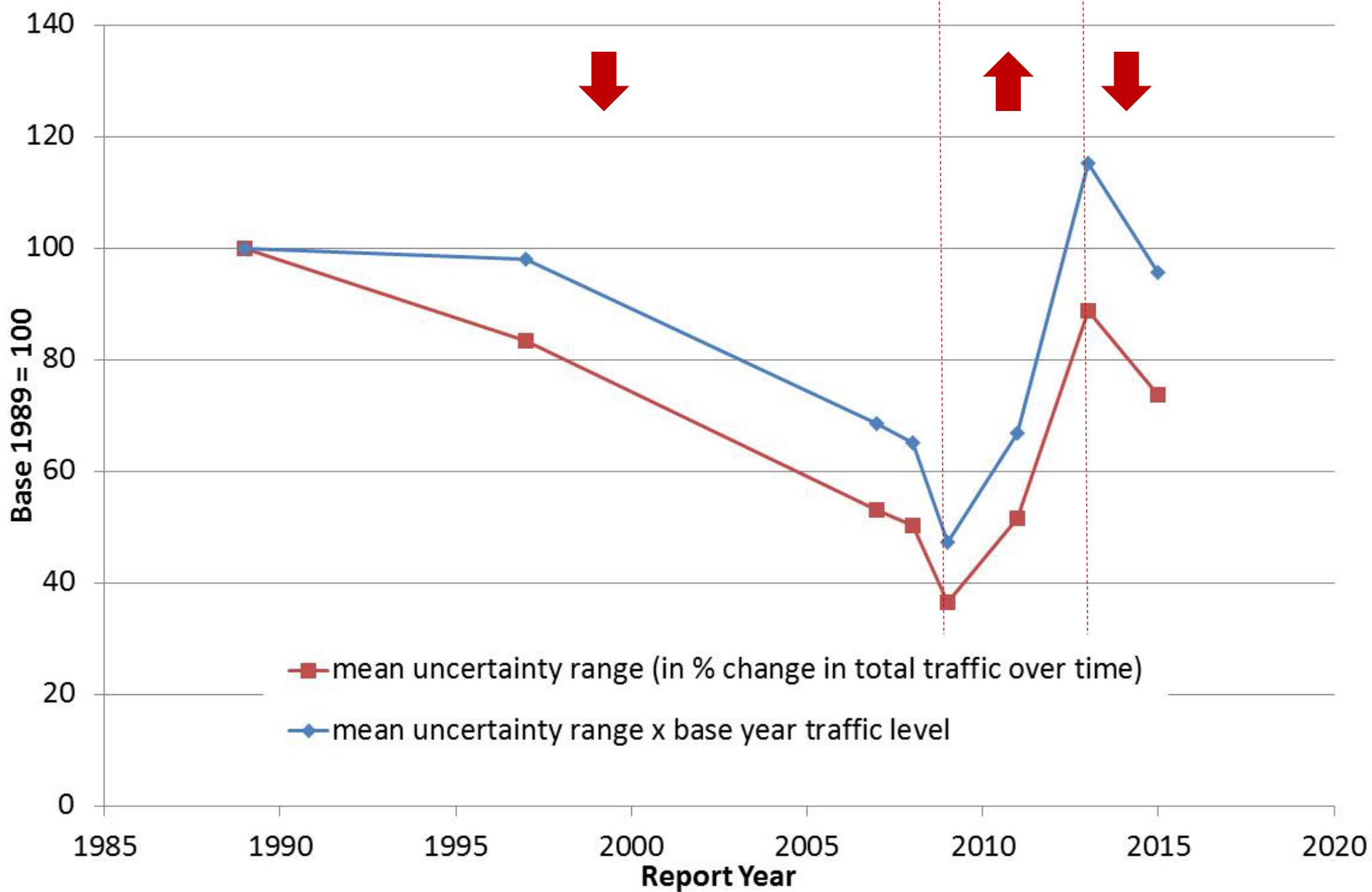
recognised uncertainty in inputs addressed through sensitivity testing
e.g. **high** population growth + **high** income growth + **low** fuel price



**forecast
fan**

opening out

Fan size





population

1997 - sensitivity testing confined to +/- 35% of best or central estimate at 35th year

2007 - sensitivity analysis considered GDP, fuel economy rates, value of time and oil prices

2008 - updated population projections (higher growth rate) – sensitivity analysis considered lower migration

2009 – population not addressed in sensitivity analysis

2011 – population not addressed in sensitivity analysis

2013 – high and low population projections explicitly acknowledged and accounted for in sensitivity analysis

2015 – ‘scenario approach’ adopted - high/low GDP/fuel price considered but not sensitivity to population estimate

2013 – six scenarios - lowest projection considered an unlikely and extreme scenario

2015 – *“The growth in national traffic levels is predominately driven by the projected growth in population levels”*

2015 – notable new ground broken in scenario approach and no reference to central projection

2015 – substantial range in plausible traffic growth between 2010 and 2040 of 19% to 55%

Uber bags thousands of driverless cars from Volvo in latest nod to tech

LYNSEY BARBER

@lynseybarber

UBER has snapped up thousands of driverless cars from Volvo in the latest demonstration that the technology is taking off.

The deal will see the traditional car brand supply 24,000 vehicles that can support autonomous technology to Uber over three years starting from 2019. It builds on an original \$300m (£227m) deal signed between the two last year.

"The automotive industry is being disrupted by technology and Volvo Cars chooses to be an active part of that disruption," said Volvo's president and chief executive Hakan Samuelsson.

"Our aim is to be the supplier of choice for AD [autonomous-driving] ride-sharing service providers globally.

"Today's agreement with Uber is a primary example of that strategic direction."

Volvo will continue to develop its

own driverless technology as well.

Uber head of auto alliances Jeff Miller said: "This new agreement puts us on a path towards mass produced self-driving vehicles at scale."

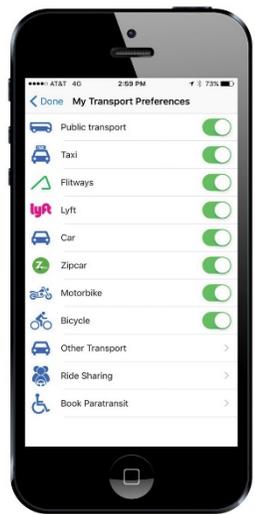
It comes as the UK government ups its efforts to get traction for the technology in the UK.

Chancellor Philip Hammond will promise to get the cars without human drivers on the country's roads by 2021 in tomorrow's Autumn Budget.



Uber and Volvo are stepping on it with their latest deal

Changes coming?



how reasonable is the procedure of opening out?

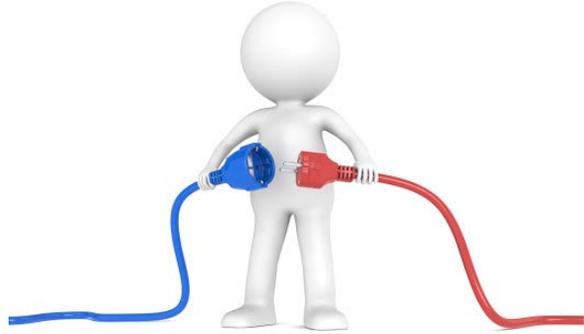
NTM – retrospective good fit between modelled and observed data **with correct inputs**
→ robust for explaining the past to the present (or right for the wrong reasons)

central estimates have never been closest to outturn levels – therefore surprising that most forecasting exercises are predicated around a most likely scenario with others portrayed as highly unlikely or less likely

where scenarios comprising the fan are **not judged to all be equally plausible**, we consider this to be **unreasonable opening out**

if adoption of **transport innovations** is seen to be inevitable and desirable then their apparent exclusion from opening out is **not reasonable**

we are seeing more **recent improvement in the reasonable consideration of opening out**

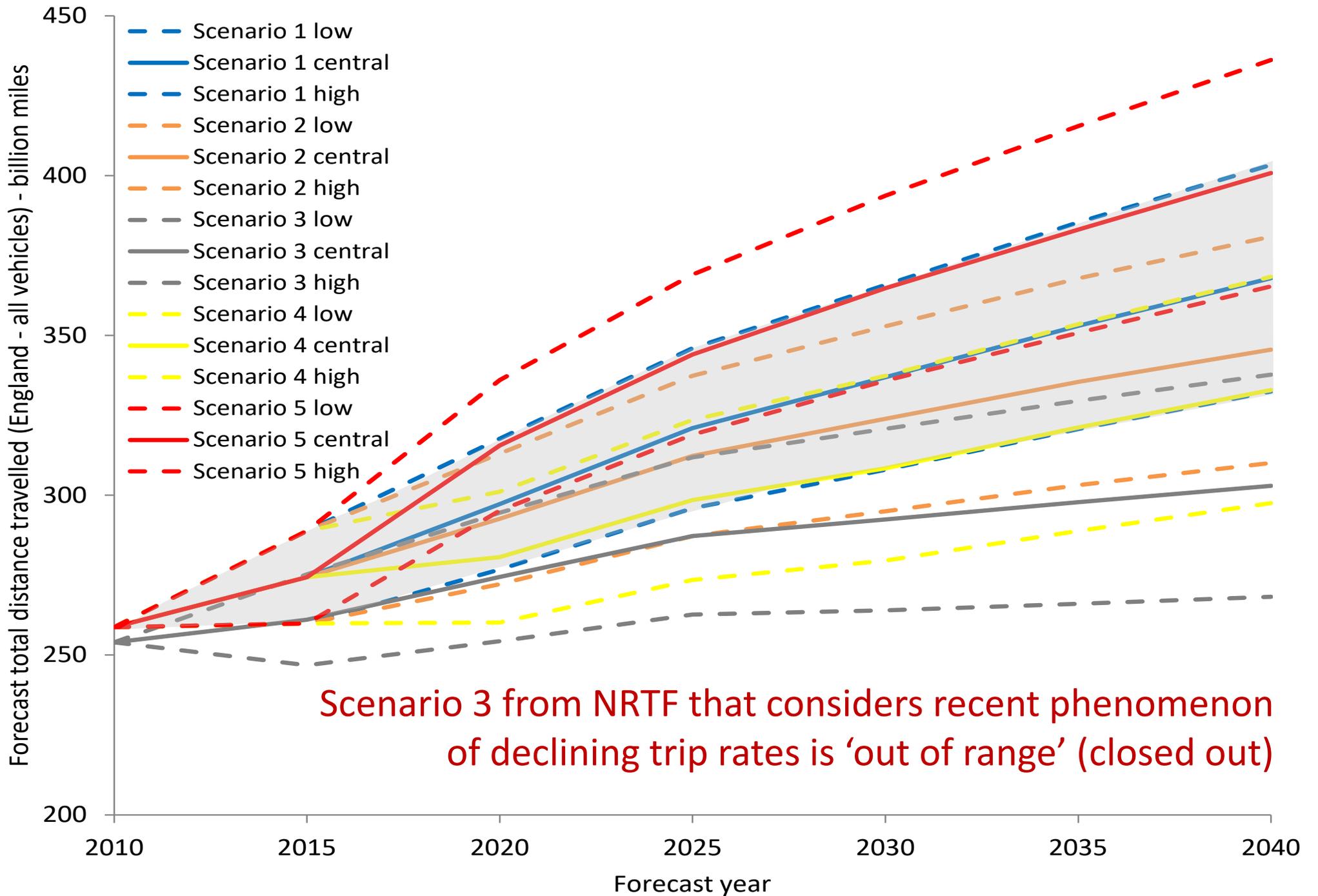


from national forecasts to scheme appraisal and WebTAG guidance

modelling of a core scenario based on central projection data from NTEM (corresponds to Scenario 1 of NRTF 2015 which assumes central macroeconomic estimates)

“it is best to test the impact of [this] uncertainty by using high and low growth scenarios” – achieved by adding or subtracting a proportion of based year demand to the demand for the core scenario

closing down thought experiment



how reasonable is the procedure of closing down?

NRTF national scenarios go from being plausible to never considered or considered as extremes

*“The **core scenario** will form the basis for the analysis reported in the Appraisal Summary Table (AST) and, as such, should represent the **best basis for decision making given current evidence**”*

it appears that the practice of planning for transport continues with the notion of the core or most likely scenario

we consider there to be an absence of reasonable justification for this closing down process

practical realities of being proportionate in assessment may be outweighing what might be considered reasonable handling of uncertainty

people.

procedural assumptions involve judgement by one or more actors over what is considered reasonable



ego-protective
self-interest
in-group favour

cognitive fluency
sunk-cost fallacy
confirmation bias

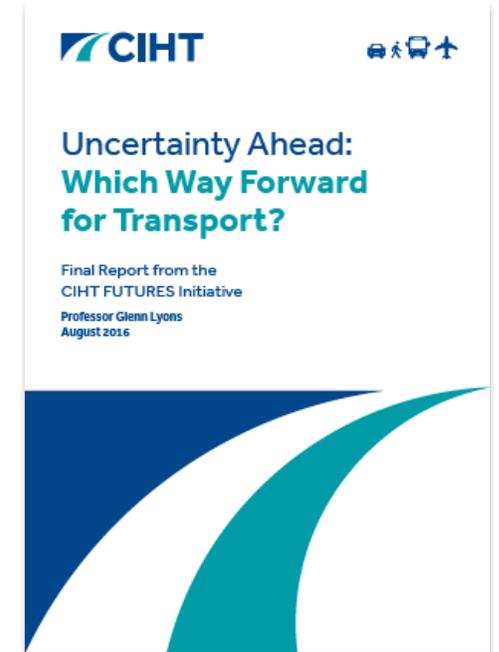
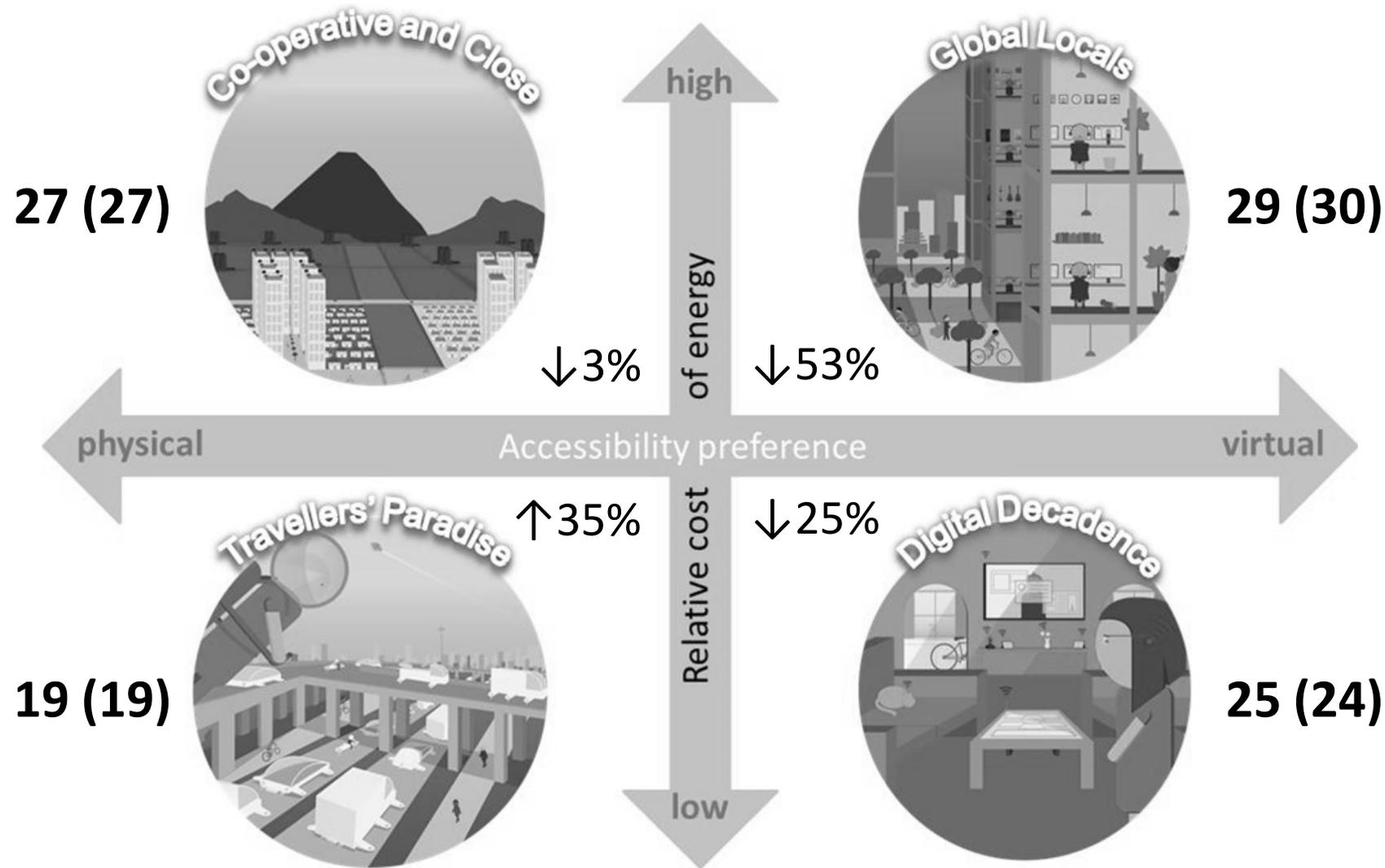
optimism bias
blind spot bias
group think

expert at versus expert on

**I AM AN
EXPERT**

from authoritative to collaborative

exposing uncertainty and confronting bias



share of collective plausibility per scenario before (after) group discussion

as well as the procedures adopted...

what reasonable consideration of uncertainty you
get out depends upon **what types of experts
and/or professionals you put in**



reasonable consideration tests

reference point for changing practice to become more reasonable within the bounds of proportionality

- 1** **nature of the decision** – to what extent is the opening out of uncertainty important to the planning or decision-making process in question?
- 2** **uncertain future conditions** – if more extensive opening out is necessary then has a set of plausible societal futures been developed that reflects the level of uncertainty faced?
- 3** **closing down options and assessment** – does the process adopted for the closing down of assessment correspond to the outcomes of tests 1 and 2?
- 4** **transparent treatment of uncertainty** - is guidance for decision makers that emanates from the opening out and closing down processes transparent about its limitations?

doing better • must try harder • attention to rigour of process as well as rigour of analysis

thank you.

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