COMMUNICATING AND REPORTING UNCERTAINTY

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Acknowledging uncertainty is not a weakness…

"The Institute of Science in Society and Save British Science argue that, if the Government's position on BSE up to 1996 had reflected more accurately the uncertainty of the underlying science, both the public and the authorities would have been better prepared for the shift in scientific consensus which prompted the notorious change of policy (ISIS p 339, SBS p 399)." *In Science and Technology - Third Report. House of Lords. 2000.*

"The public should be kept informed...This may involve delays and difficulties, but in the long run openness is the best policy" Sir Aron. Royal Society, 1999.

→ Uncertainty is a normal characteristic of scientific work

Keywords

- Openness
- Transparency
- Clarity
- Congruency with context
- Effectiveness of the message
- Implications of uncertainty

Issue 1: Context of Communication of Uncertainty

- Why reporting uncertainty? At which stage of the assessment?
- What is requested by/from the audience?
  - Active involvement - Incorporation of other types of knowledge? Sharing of responsibility…
  - Access to information
- What's the setting?
  - Deliberative context, policy making… → Meetings, group sessions, Internet…
  - Information delivery / Press communication… → Press articles, reports, journals, interviews…
  - Extended peer review - Public involvement… → Group sessions, Internet

Issue 2: What's the target audience?

Assumption: Non-scientific audience. ≠ From not having resources

- Policy Makers
- Media
- Citizens
- NGO's, etc...

- Content
- Language

Issue 3: Language

For a non-scientific audience…

- Information should be (scientific) jargon free or “jargon explained”,as much as possible
- Guidelines to facilitate clear and consistent use of terms
- Style: value explicit and undeterministic wording
- Acknowledging ignorance rather than being ambiguous

Avoid INFORMATION DIVIDE, misunderstanding and misuse

Issue 4: The method

- Uncertainty analysis (e.g. statistical analysis)
- Quality Assurance (e.g NUSAP, Pedigree)
- “Explanatory Frameworks” (e.g cultural theory)

Style of reporting

Issue 5: Style of Reporting

- Uncertainty analysis method output,- foreground - e.g.
  - Written material (e.g. a report)
  - Internet, Multi-media

  → Different audiences
- Uncertainty *"engine"* in the background; results embedded in the output, e.g.
  - Models
  - Scenarios

Numbers - Words - Narratives - Graphs - Pictures - Multimedia

Hints: Time (availability of the audience) will determine what and how can be communicated. → Rehearse.

Audience accessibility to the reporting

Issue 6: Communication contents

- Statement of uncertainties (according to what has been said before)
- Implications for policy and for social context
- Relation with risk (namely consequences for different risk management strategies)
- Citation of other studies, if any
- Pedigree of results (including references, background documents, etc…)

Adopt approach of: "PROGRESSIVE DISCLOSURE OF INFORMATION"

Communicating *versus* Manipulating

? Where do we draw the line ?

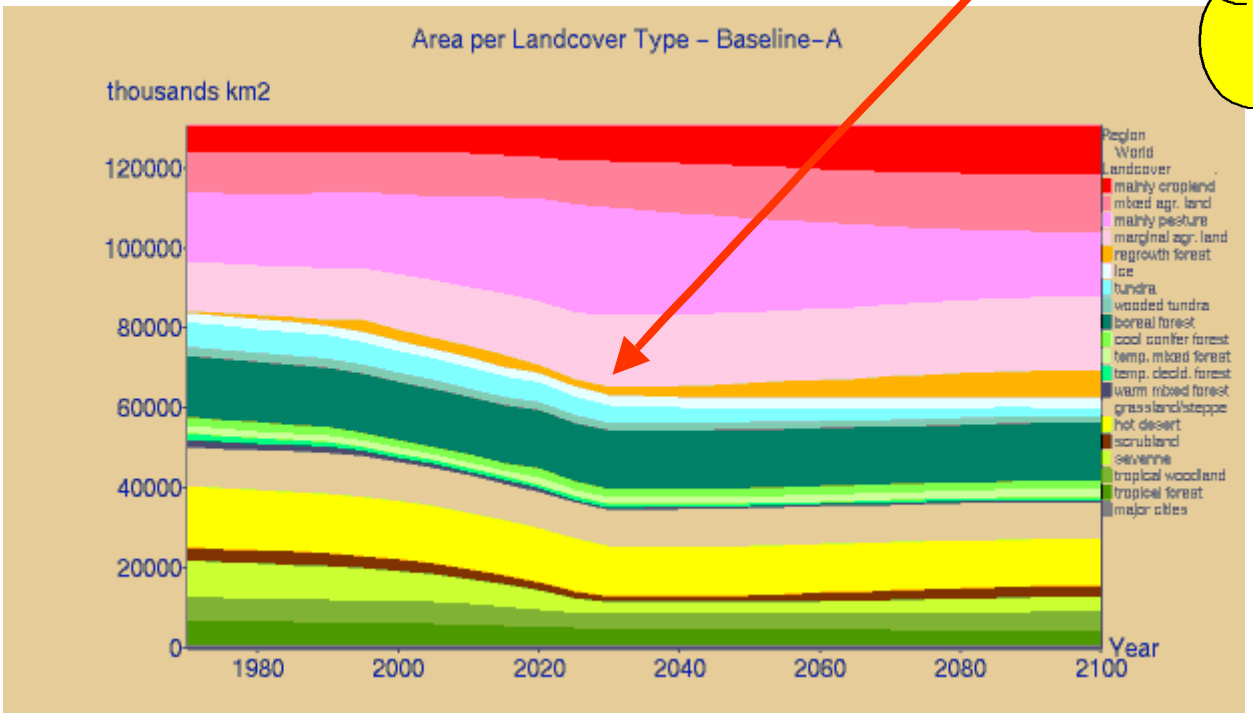
- Uncertainties should be made explicit (including ACKNOWLEDGEMENT OF IGNORANCE), as well as implications for policy and societal contexts, even if issues are HOT (political culture will determine action)
- Scientific *propaganda* should be avoided - communicating uncertainty is NOT a “public understanding of science” exercise
- Engagement of the audience should be a reflexive process - recognition of mutual resources
- A trustful context for knowledge sharing should be set up.

Blurring elements

- Metaphors and “explanatory frameworks” are helpful but may be misleading
- Avoid “crystal-balls” - if used, should be made explicit
- Scientific contrivance (“abracadabra”) and arbitrariness - take audience and issues seriously

IMAGE: Crystal-ball effect…

Uncertainty…



Why
this 'drop'?
What happens
in 2025?

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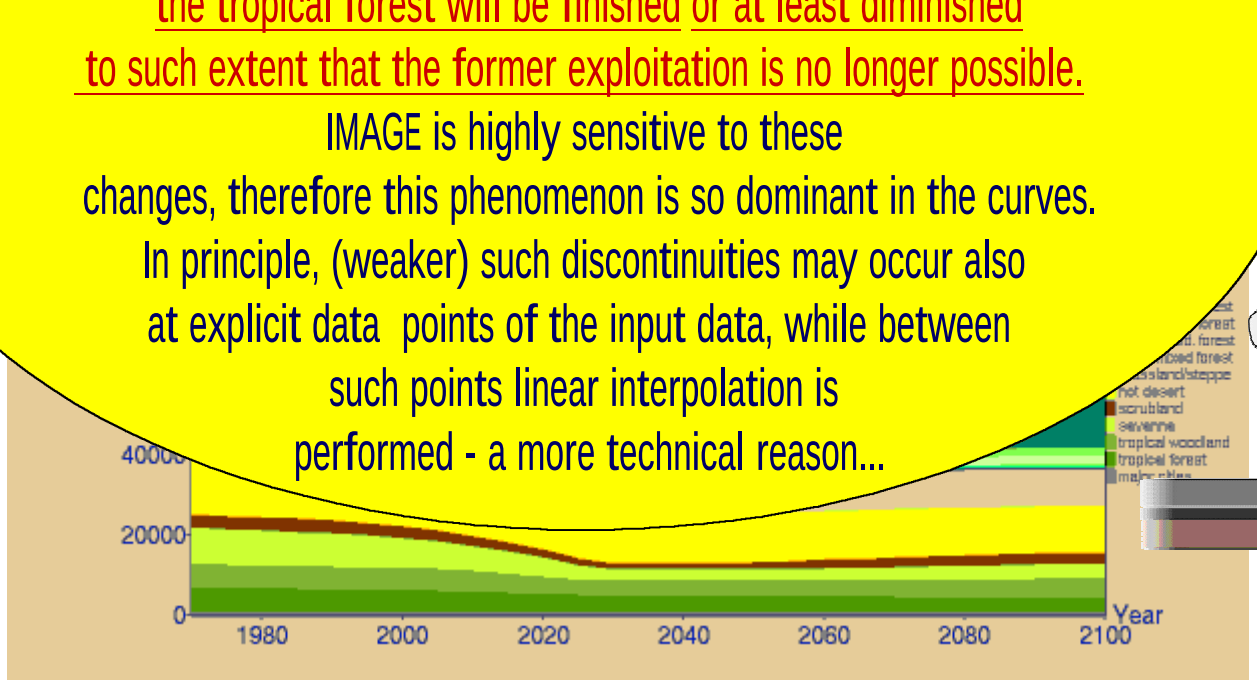
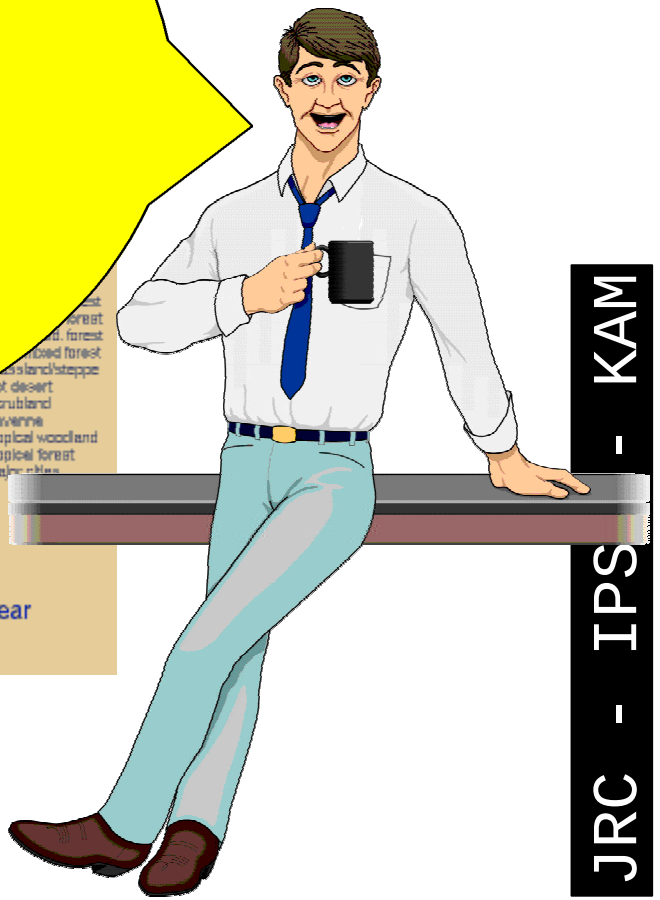
IMAGE ball effect…(2)

This drop?
Well, according to the business as usual scenario
we have imagined that by the year 2025, a structural change
will take place changing the emissions pattern of the world:
the tropical forest will be finished or at least diminished
to such extent that the former exploitation is no longer possible.
IMAGE is highly sensitive to these
changes, therefore this phenomenon is so dominant in the curves.
In principle, (weaker) such discontinuities may occur also
at explicit data points of the input data, while between
such points linear interpolation is
performed - a more technical reason...

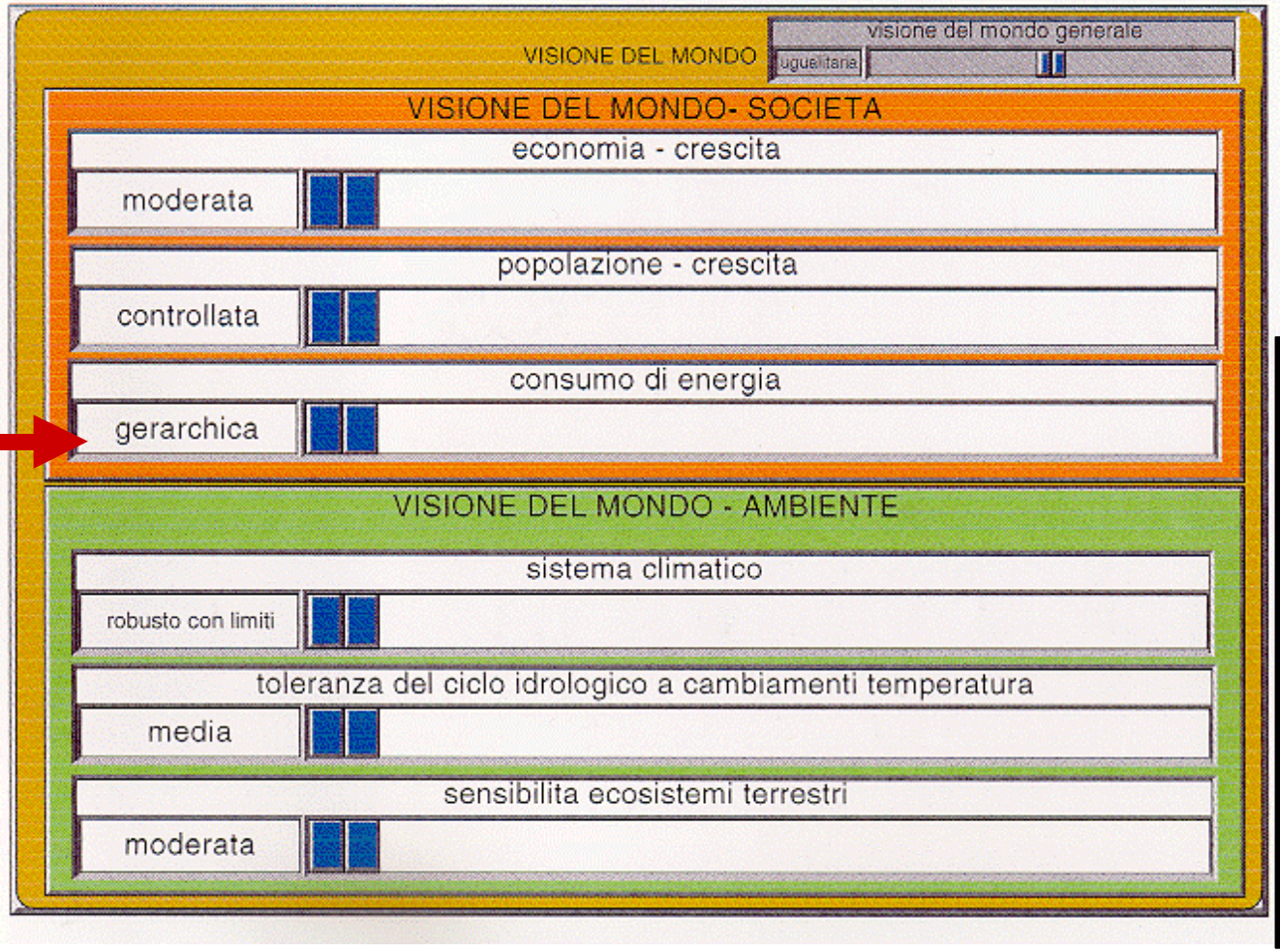




TARGETS: Addressing Uncertainty with Cultural Theory

ULYSSES PROJECT

Choose a cultural perspective that may reflect the 'behaviour' of the environment & society…



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TARGETS: addressing uncertainty with Cultural Theory (2)

ULYSSES PROJECT

- There was a tendency to understand the perspectives as addressing behaviour towards natural and human systems rather than *uncertainty*:

  → [Reflections Post-TARGETS] "There is a fundamental error: there was no need for this kind of labelling that is so specific for the cultural perspectives because they bias: using only one perspective for all sub-systems, without variation, the results were very different from those expected;

  → … by choosing the individualist perspective one was expecting catastrophic results and instead it was not like that - indeed, we had the most satisfactory results".

- "The model seems to be convinced that Nature is robust (it would seem that individualists are right)"

ULYSSES: From In-depth Groups in Venice

Reactions to uncertainty: Hey you scientist ! You live in the Earth too!!
Come down and join us!

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