

Decalogue of the diligent quantifier. A playful checklist

Andrea Saltelli, Mario Giampietro and Jerome Ravetz, January 2016.

- 1) I don't quantify at gun point (Quantification and trust are symbiotic. Source: [T. Porter, Trust in Numbers, discussion of US Army Engineers vs Engineers du Ponts et Chaussées](#)).
- 2) I avoid quantifying *sub specie aeternitatis* (the thing being measured, the measurement scheme, the interests determining the relevance of the observation likely changed / will change; the impossible secular cost benefit analyses – see [Langdon Winner's The Whale and the Reactor](#); see [sensitivity auditing](#)).
- 3) I avoid apprentice wizardry ([Make sure quantification is run by the competent/relevant discipline given the subject matter; if I am an economist I can quantify only under moderate scarcities](#)).
- 4) I exert restraint (My license to quantify is also a license not to quantify. Not because I can put it in numbers I put it in numbers – see [Sensitivity Auditing](#)).
- 5) I don't sweep my assumptions under the carpet (Quantification based on guesstimates of input needed by the quantification algorithms are only as good as the guesstimates – see [Philip Stark's 'quantifauxation'](#); [Sensitivity Auditing](#); [John Kay's presentation](#)).
- 6) I don't forget the frame (Each quantification belongs to a frame. [Quantification are never neutral](#)).
- 7) I am inquisitive of the motives of all quantifiers (Quantification is an artifact; Ravetz's Second Law: 'Any artifact will have: intended use, creative new use, incompetent misuse and malevolent abuse').
- 8) I am mindful of the need for each measure to have a stable external referent ([Quantification requires a stable pattern to be recognized and measured - what is determining the pattern? how stable is the pattern?](#)).
- 9) I don't forget the distinction between "type" and "instance of a type" (Quantification is only useful to describe types. The problem is that the "reality" is made of instances that are all special; see [Mario Giampietro's presentation](#)).
- 10) I can see and measure entities only one scale at the time. What I measure at one scale does not exist at another scale. ([Quantification is the mother of hypocognition](#)).