



0.23 μ Sv/hr: fear line, bible or policy?
Comparisons and thresholds in post-Fukushima Japan

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0.23

Comparisons

"This is the data from 1990s - before the incident. So for example, we get the result of the rice, which is 5Bq. Which is under the standard, [...] 100Bq. However, compared to the data from 1990, this says 0.03, if you compare to decades before the incident, it is much much higher. [...] This clinic cannot judge if it is safe or not. Because it depends on the people's age and situation since the disaster. We provide this kind of information to help this kind of decision making."

In conversation at a citizen run clinic in Fukushima, August 2018

0.23 – a fear line

“The 0.23 has become a bible – it has become a fear line. And it’s really interesting when you spend time with people and local people, and [there is] quite a variety in terms of how much they know about the measurement and how active they are. We’ll see many people, it’ll be like 0.3, and they’ll say, “Oh wow! Its high!”[And I’ll think] Yeah – it’s high for you! Higher than they want to live in. And I can totally accept that. But high compared to what? You know?”

Conversation with a member of a radiation monitoring group

0.23 – a link to international expectations

August 2011: “The Act on Special Measures concerning the Handling of Radioactive Pollution” was enacted

Ministry of the Environment concept as “long-term goal”, to reduce “additional exposure dose” to “1 mSv/year” – in line with ICRP recommendations

0.23 μ Sv per hour became the equivalent hourly rate used in decontamination activities

So how did 1mSv/yr become 23 μ Sv/yr?

$$1000\mu\text{Sv} / (365 \times 24)$$

$$1000\mu\text{Sv} / 8760 = 0.11\mu\text{Sv per hour}$$

0.23 - a reference level

"The number 0.23 made very significant effect for people. [...] even now many people consider 0.23 corresponds to 1mSv, so if there is any area around their houses that is higher than 0.23 then they are considering its very dangerous, but it is not really....1mSv is not enough, how can I say....."

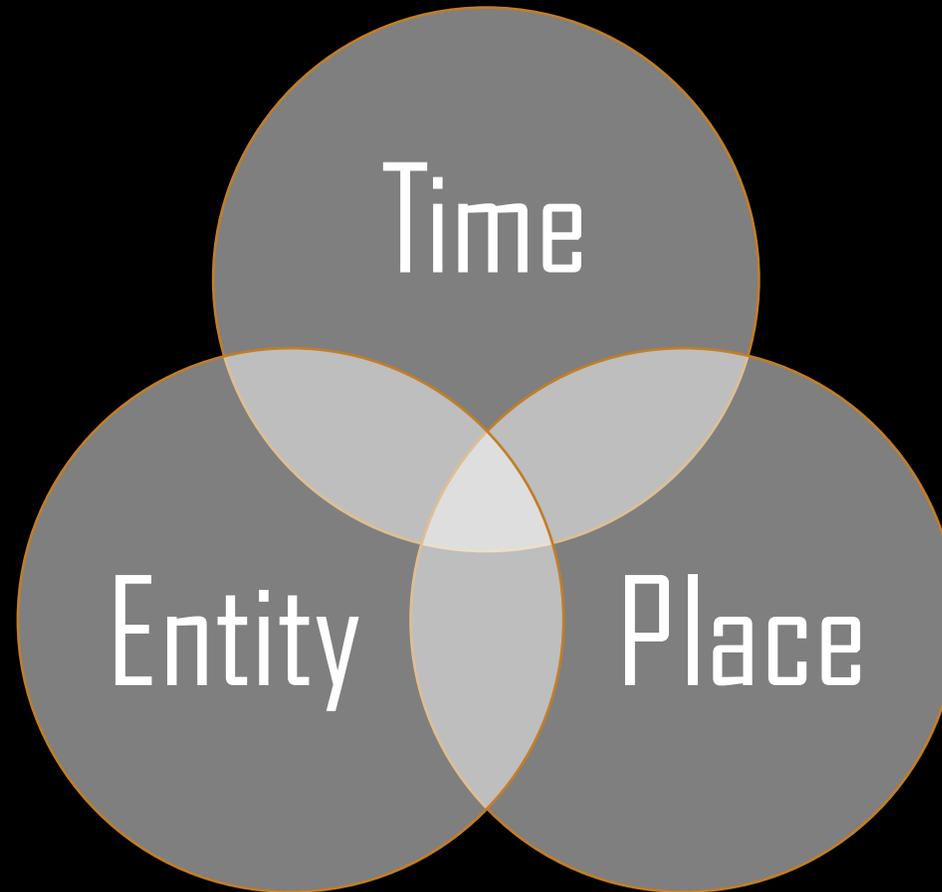
He points me towards a JAEA report, from which I read out: "It is emphasised that 1mSv per year is not derived as a clear distinction between safe and dangerous or that it will be achieved only by decontamination. It is a reference level to effectively implement protection actions."

In conversation with JAEA officials, July 2018

Comparisons: building the case

tertium comparationis:

The common qualities in the things
that are being compared
(Steinmetz, 2004; Wagner, 2011)).



0.23 – a benchmark comparator

Conversation with municipality officials involved in decontamination work

A: There are some citizens who are still really worried about contamination. [...] Our staff visit them to do monitoring. [...] They show the number to the person and they explain about the number too.....

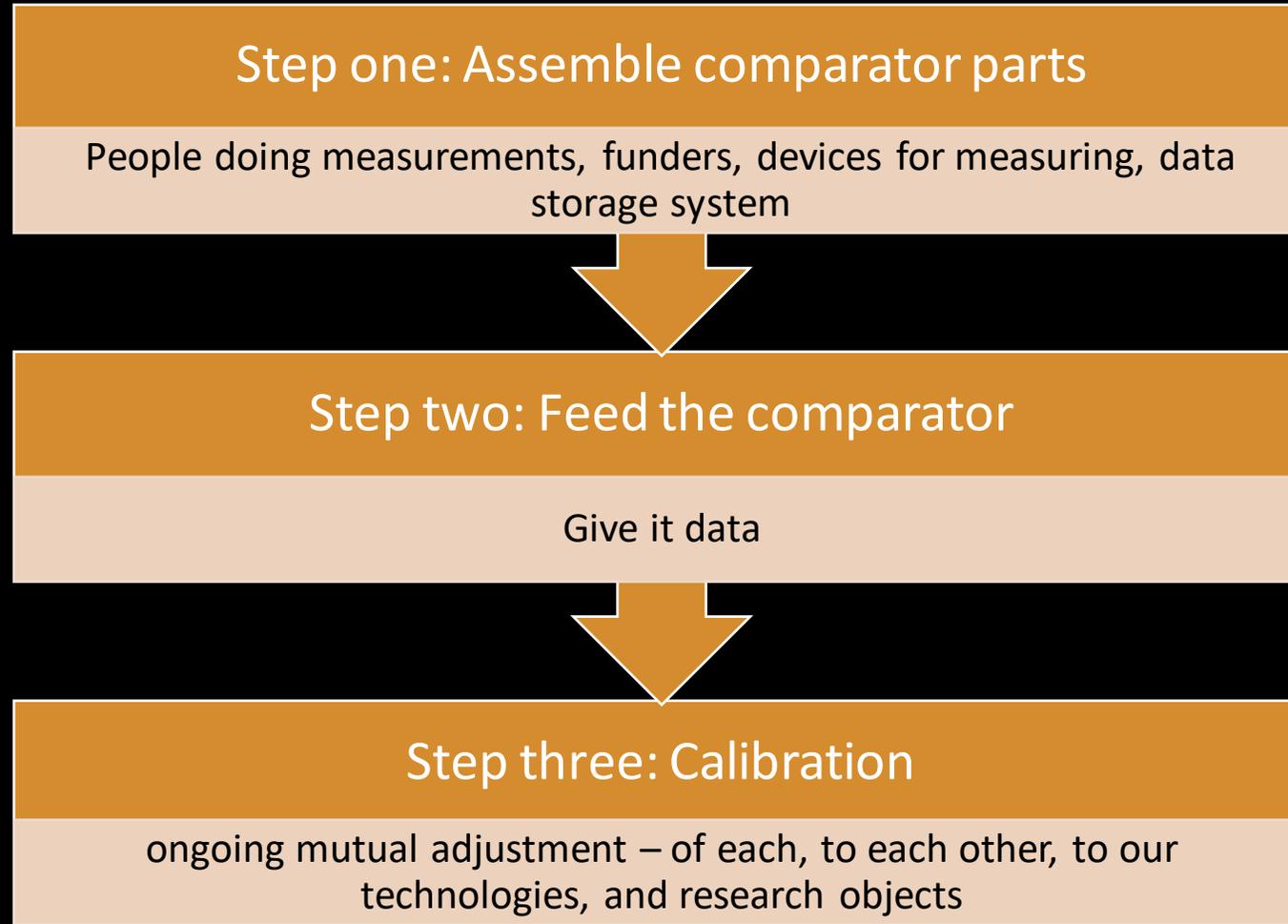
LE: And how do they explain?

A: We just show them a number.... Do you mean telling them if the number is high or low?

LE: Well, [...] you can give them a number, but they might not understand what that means.

A: So, they know the number - the standard of decontamination, like 0.23 μ Sv, so if it is lower than that number they can feel safe [...] So most of the citizens - we think that most of the citizens know the number 0.23, so for the citizens who feel anxiety, they do not know the rate of their house and they feel anxious.

0.23 – a Comparator calibrator

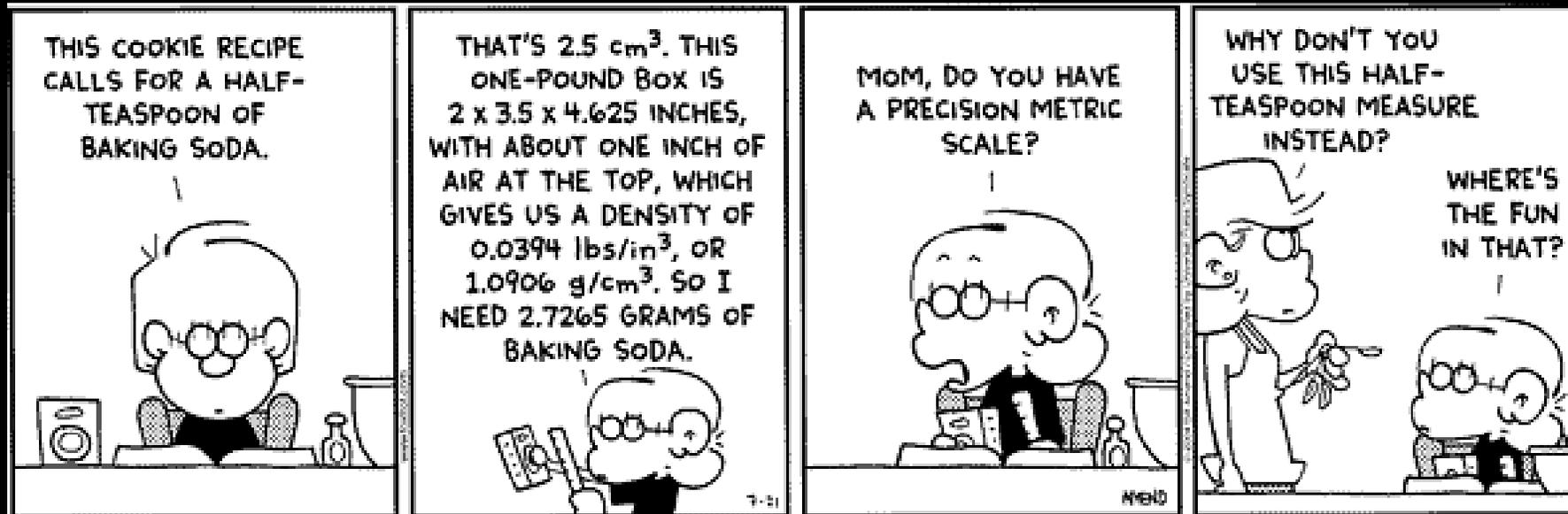


So what?

0.23 operates on numerous levels:

- It is a government threshold
- It is directive
- It is an icon
- It is a benchmark
- It a calibration tool for acts of comparison.

Thank you



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