

Future Design

A Prelude

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Iroquois' Idea

- ◆ **Seven Generations Sustainability:**
“In every deliberation, we must consider the impact on the seventh generation ... even if it requires having skin as thick as the bark of a pine.”
Great Law of Peace.
- ◆ **The Iroquois system of government** influenced the development of the Articles of Confederation and the United States Constitution.

Three Human Oddities

- ◆ **Contrasts (or Relativities)** rather than Absolutes: responds to changes of our environments – light or sound
- ◆ **Sociality**: understand human relationships.
- ◆ **Short-sidedness**: steep temporal discounting – the dopamine reward pathways in our brain light up on brain-imaging tests when we go for the impulsive immediate reward.

Sapolsky (2012)

Three Market Oddities

- ◆ **Relativity** is **marginality** in economics. I.e., optimization tool.
- ◆ **Sociality**: the market is a device to erase sociality.
- ◆ **Short-sightedness**: Fundamental Theorems in Welfare Economics do not have **TIME**: market failure occurs if we include time in our models.

Market Failure: Investment

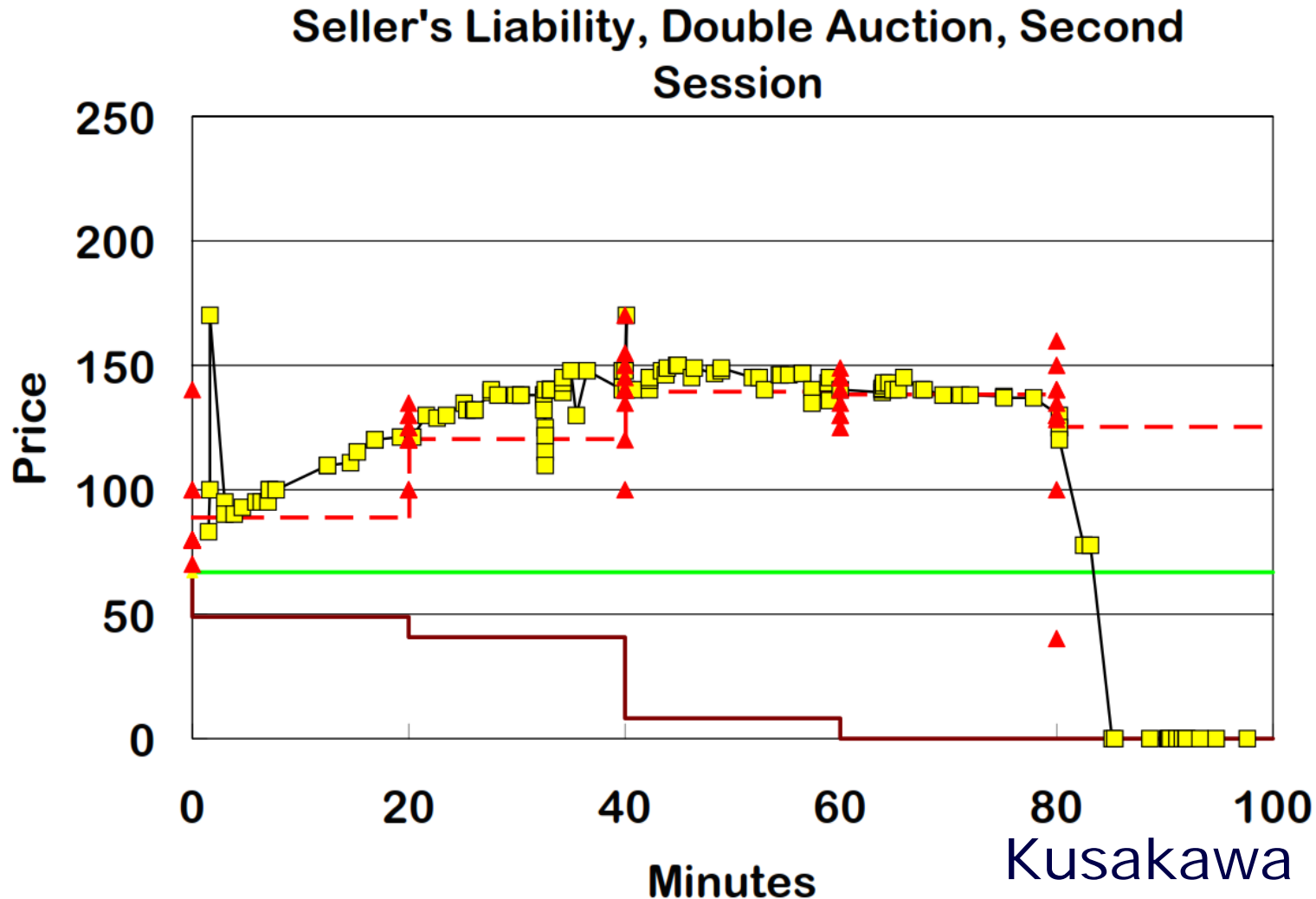


Figure 11. The Bubble Case

Markets Deprive Future Generations' Resources

- ◆ Markets do not have a function to allocate resources between current and future generations.
- ◆ Can government fix this problem?: The debt of the Japanese government is more than double the amount of our current GDP.
- ◆ Externalities among generations: climate change etc.

Constitutions

- ◆ Do our constitutions consider future generations?
- ◆ Nine countries (USA, Canada, China, South Korea, Japan, France, Germany, Switzerland and Russia):
No words such as future or generation in their constitutions.
Article 20a, Preambles.

Representative Democracy

- ◆ No obligations for considering future generations among citizens when they choose representatives.
- ◆ The representatives only **seek to win in the next election.**
- ◆ **Present democracy does not consider future generations.**

The Optimism Bias

- ◆ When we predict the “future”, we underestimate the likelihood of negative events and overestimate the likelihood of positive events.

Tali Sharot, "The Optimism Bias,"
Current Biology, 21(3), 941-5, 2011.

The Optimism Bias

(t)he brain was pretty good at tracking mismatches *only* when the new information was positive... When the news was undesirable..., the brain did not tack the error as closely. Since the frontal lobes selectively recorded desirable errors but failed to record undesirable ones, people learned more from the good news than from the bad news.

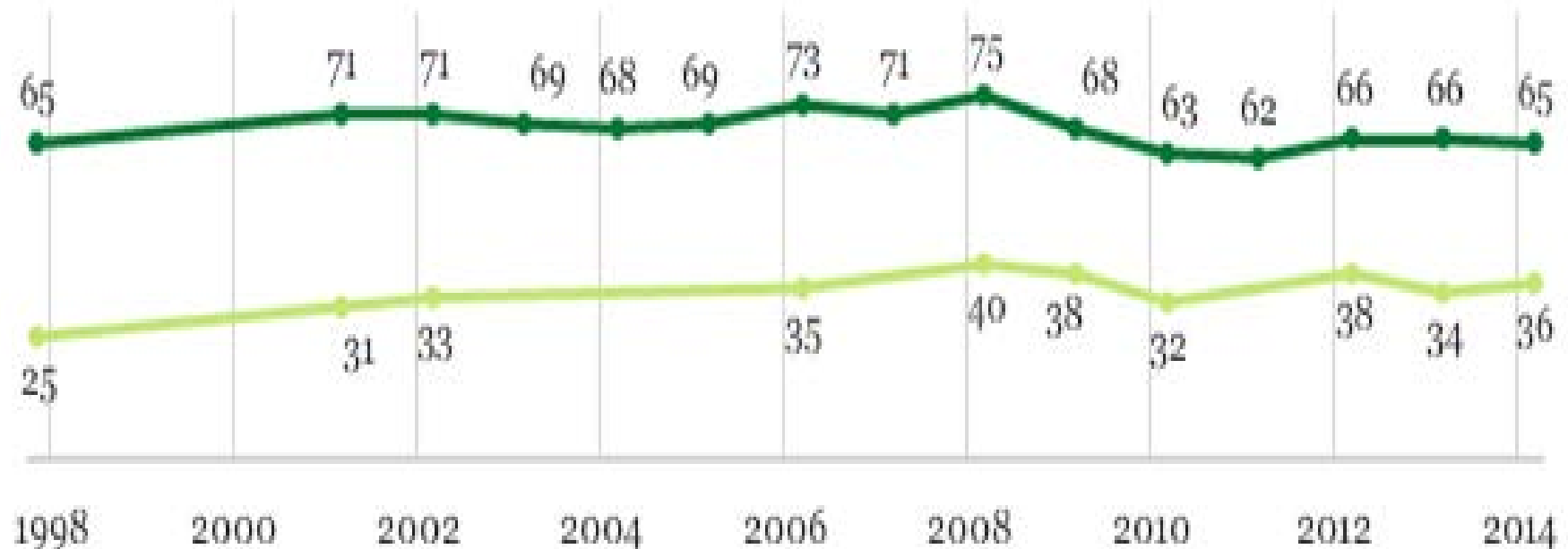
Tali Sharot, *The Optimism Bias: A Tour of the Irrationally Positive Brain*, Pantheon, 2011.

The Optimism Bias

Do you think that global warming will pose a serious threat to you or your way of life in your lifetime?

■ % Is happening/Will happen during lifetime

■ % Will pose serious threat to way of life



GALLUP

Benefit from the Optimism Bias

- ◆ The effects can be quite substantial, with one survey of 97,000 individuals reporting that optimists are 14% less likely to die between the ages of 50 and 65, and 30% less likely to die from cardiac arrest. Optimism has also been related to extended survival time of cancer and AIDS patients.

Tali Sharot, *Current Biology* (2011).

The Optimism Bias Dilemma

- ◆ Financial Downfall of 2008:
Bankruptcy of Lehman Brothers
- ◆ Climate Change:
Global warming, Sea level rise,
Extreme weather etc.

Need for Future Design

- ◆ **Market:** takes away resources of future generations without remorse.
- ◆ **Constitutions** are myopic.
- ◆ **The Optimism Bias Dilemma:** evolutionary nature of humans might be a source of future disasters.
- ◆ **Need Future Design**

Future Design

- ◆ **Create Future Generations NOW.**
- ◆ People can pretend that they are somebody else. => Create a group of people who will consider only the future generations => **Ministry of the Future.**
- ◆ **Min. of Future** negotiates with the current generation.

Negotiations

- ◆ People in the Min of the Future must identify problems in the future and then show alternatives to the current generation.
- ◆ Choose a group randomly from the current generation and then show them the alternatives. => **Virtual Future Generation.**
- ◆ Choose another group randomly from the current generation. => **Virtual current generation.**
- ◆ Both must talk and negotiate and then propose an alternative. => Congress etc.

From Prediction to Retrodiction

- ◆ **Backcasting** (not forecasting, but retrodicting) would be an effective tool for future design.
- ◆ **Energy Trading**, i.e., after determining the path of an energy source such as coal, trade the usage rights among people.
- ◆ **Future Design Linkage**: A region can advice some other regions as if the region is the future generations.

Evolution of New Society

- ◆ Constitutions will have “future” and “generations”.
- ◆ Fundamental Law on Future.
- ◆ Min of the Future, Division of the Future etc.
- ◆ Department of Future Design in Universities and graduate courses.
- ◆ These people will be respected.

Introducing the Ministry of the Future

- ◆ The idea comes from the *veil of ignorance* à la Rawls (1971).
- ◆ Why not ***the veil of future generations?*** Saijo and Uwasu (2014).
- ◆ *Theory of Mind*: We can make a guess about other people's mind, or can pretend as if we were other people (Premack and Woodruff (1978), Gallese and Goldman (1998), Gallese and Sinigaglia (2011)).
- ◆ Construct some *minimum possible (experimental) environment* that is favorable for future generations.
- ◆ Not appealing to *conscience*, but using *negotiation* between current and future generations.

A or B?

Without alpha

G1	G2	G3	G4	G5
A	A	A	A	A
A	A	A	A	B
A	A	A	A	B
A	A	B	B	A
B	B	A	A	B

B is 28%.

With alpha

G1	G2	G3	G4	G5
B	B	B	B	B
B	B	B	B	A
B	B	A	A	B
B	A	B	B	A
B	A	A	B	A
A	B	B	A	A
A	B	A	B	A

B is 60%.