

Appendix 1. Overview of workshop concepts.

Table A1. Workshop concepts that were evaluated as being able to take on one or more of the communication challenges as framed by the criteria in the paper, organized by media formats, ranked by number of concepts in each category, and distinguished between digital and/or physical media. Concepts with an asterisk * are the concepts discussed in the paper.

Number of concepts in category	Concept category	Concepts	Digital or physical
5	Interactive visuals (5)	1. Show cross-scale change through self-similar fractals. 2. Show sensitivity to initial conditions through chains of effects. 3. Show path dependence of the timing of interventions.	Digital
5	Physical installation (5)	1. Start with an object interacting in a set space, then break through that space to a more complex, open environment. 2. Create visual storylines that display the evolution of ideas through reinterpretation by participants. 3. Use moving light profiles programmed to exhibit edge-of-chaos-behaviour. 4. Create a walking machine producing cascading effects. 5. Create moving wall furniture that allows users to play with feedbacks.	Physical
4	Serious games (4)	1. Organismus: the adaptive constructing of organisms*. 2. Spaceship Earth: "Steering" the planet across scenario axes*. 3. ChaosGolf: Playing with the dynamics of a stability landscape*. 4. Levels of Life: A complex of micro-games moving across scales*.	Digital
4	Dynamic network visualization (4)	1. Develop storylines through a dynamically changing network. 2. Visualise worldwide communication patterns. 3. Visualise long-term effects of actions passing through networks.	Digital

4	Role playing (4)	1. Switch identities for a time to experience different perspectives. 2. Hide individual fields of expertise to reframe identities and the value of knowledge. 3. Re-describe reality by creating a new language with a group that captures complex system dynamics differently. 4. Do as much tasks as possible in a short time to re-experience the relationship between knowledge and action under uncertainty.	Physical
3	System dynamic modelling visualization (3)	1. Visualize different interacting rhythms in a system dynamic model. 2. Create system transformation in a dynamic model and mark qualitatively different phases.	Digital
3	Posters, single images (3)	1. Use 3d posters to combine different system perspectives. 2. Use simple, shocking anthropomorphising metaphors. 3. Play with perspectives by linking strong emotions to neutral content and vice versa.	Physical/digital
3	Sculptures (3)	1. Create a sculpture that shows a transition from early life to man through qualitatively different forms of complex systems, using different materials. 2. Create an embedded, multi-level version of the mythological Atlas carrying the world.	Physical
3	Video, animation, documentary (3)	1. Use language as metaphor for complexity and the limits of knowledge in a short film. 2. Visualize different would-have-beens to illustrate path dependency in a short film. 3. Capture the complexity of production and consumption chains through multiple branching storylines.	Digital
3	Use existing environments and infrastructure (3)	1. Hide ambiguous messages pointing to unknown locations and events in formal information infrastructure. 2. Cause periodic or unpredictable disturbances in a given environment to use those present as responding systems. 3. Reframe the physical environment by showing it through a multi-level perspective.	Physical
2	Cross-modal perception (2)	1. Use different senses to capture consistencies and incongruities between system perspectives. 2. Remove specific senses to reframe the environment.	Digital/physical

2	Physical group interaction (2)	1. Ouija drawing: set up a system for connected group drawing to explore feedbacks* 2. Breathing Feedbacks: use amplification of breathing in a group to explore feedbacks, equilibrium and instability*.	Digital
3	Social media storytelling (2)	1. Time Capsules: Present fictional material as real and create viral storytelling *. 2. Time Capsules: Use the opposite of your message to elicit implicit knowledge*. 3. Indicators: use language as a metaphor*	Digital
1	Physical game	1. Create a false sense of order in a system with labels that hide underlying complex dynamics.	Physical
1	Agent-based model	1. Create multi-scale nested agent based models.	Digital
1	Comic	1. Create a path dependence comic with different storylines spiralling outward. 2. Create a coming on a multi-scale timeline that shows cross-scale interactions.	Physical
1	Autobiography	1. Create an autobiography that follows as many storylines of what could have happened as possible.	Physical
1	Store presentation of products	1. Combine the physical setup of in-store product presentation with multi-media to show a range of aspects of the development of the product/food.	Physical
1	Music	1. Use music to link the interplay of processes with a sense of uncertainty.	Physical
1	Elementary school education	1. Start teaching young children how to cultivate their skills of perception, attention and observation	Physical