

Futures Clinique—method for promoting futures learning and provoking radical futures

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Abstract This paper introduces, illustrates and evaluates the concept of Futures Clinique, which is a participatory and exploratory futures workshop and a collective futures research method to tackle uncertainties, identify disruptions and generate innovations. The Futures Clinique aims at (a) promoting futures thinking, futures preparedness and provocative futures dialogue, and at (b) harnessing collaborative creativity for insights, innovative ideas and practical solutions to the selected futures topics. Examples from certain Futures Cliniques are also presented. Futures Clinique has proved in several exercises to work as a promising tool for collaborative foresight efforts in various organisations. For futures studies, it offers an innovative, visually orientated and structured method for promoting collective futures learning, with a special emphasis on anticipation of surprising futures or Black Swans. A promising solution is to incorporate social media into the concept and use crowdsourcing in the analysis of the mass of ideas collected.

Keywords Futures workshop · Futures Clinique · Foresight methods · Futures learning · Weak signals · Black Swans

Introduction—what is a Futures Clinique?

Futures Clinique is a distinctive futures workshop developed at the Finland Futures Research Centre (FFRC), University of Turku. Futures Clinique is a participatory and exploratory futures workshop and a collective research method. It is designed for a deeply networked, constantly changing and

increasingly systemic society flooding with information. In this kind of environment citizens and organisations need robust abilities to do foresight, to learn and to adapt to novel situations. Most importantly, it is an environment in which citizens are endowed with means to act on changing situations. Such environments would thus be more akin to their tastes—to co-create preferred futures.

Futures Clinique seeks to promote futures thinking, provocative futures dialogue and bottom-up initiatives by utilising six different foresight methods. The aim is to harness collaborative creativity for insights and practical solutions for different futures issues. The methods used in each Futures Clinique are Futures Window (a cavalcade of thought-provoking images accompanied by instrumental music) [9], Futures Wheel (a kind of a mind-map developed by Jerome Glenn of the Millennium Project) [7], Futures Table (PESTEC version, used to study the political, economic, social, technological, environmental and cultural aspects of a phenomenon), identification and impact analysis of weak signals (currently weak but possibly strengthening phenomena), identification and impact analysis of black swans (rare and unexpected events with radical impacts) and scenario narrative (a story of the future imagined in previous phases of a Futures Clinique). Besides foresight methods, some creativity techniques are also recommended to be utilised such as that of de Bono's Six Hats [3].

The Clinique metaphor is used in several senses. The Clinique is organised in order to make diagnoses of a topic. Such a topic may be a future-orientated question, challenge, problem—"disease"—that a "patient" is troubled or curious with. The patient may be a company, institution, industry, or society. The moderators of the Clinique provide tools and instruments and doctors' knowledge to help explore the issue and its possible developments. The idea is to probe the root causes and not just the symptoms of an issue. Kanninen reminds us that as in medicine, a realistic diagnosis in foresight work as well should be the starting point for changes needed [14]. After

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making the diagnosis, identifying the critical spots, the aim is to make a prognosis—how the situation may and will develop and which directions are desirable. Finally, the recipes for constructing “healthy futures” are prescribed. However, the moderators are not top-down doctors dictating their own diagnoses, but instead they are enabling the “patients” themselves to self-heal collaboratively and find out the remedies needed. In analogy to preventive medical science, the Futures Clinique offers the pro-active approach instead of retrospection.

Futures Clinique has the following four main functions:

1. To aid in strategic planning and to encourage foresight processes
2. To encourage creative and radical thinking about the futures thus creating vivid futures images
3. To examine different futures from a systemic, whole-of-society point of view
4. To provide information on the basic concepts, principles and methods of futures research/thinking as futures education

The explicit purpose of Futures Clinique, as in any futures workshop, is to do collaborative foresight and to deepen strategy and planning processes. However, *Futures Clinique puts an emphasis—instead of probable—on possible, preferable, alternative and surprising futures*. The Futures Clinique is a platform for futurological imagination. It is especially designed to *detach its participants from conventional thinking* tied to the present state of affairs and to direct their ideas toward transformative potentials and alternative futures.

To effectively probe alternative futures, and to examine the present from novel point of views, Futures Clinique *merges creativity with futures thinking*. Vivid futures thinking per se is a method to think creatively and free-mindedly—the future is a realm of discontinuities, possibilities and the emergent. However, creative futures thinking does not often occur naturally, but has to be nourished and sensitively facilitated. People tend to think of the future linearly from the point of view of the present. Avoiding the biases caused by linear trend extrapolations is one of the main efforts of a Futures Clinique.

Futures Cliniques are elaborated and structured forms of the Future Workshops.¹ The Future Workshops as initially presented by Robert Jungk [13] usually stress creating the future alongside trying to anticipate it. The Futures Clinique adheres to this principle, but also gives means to first openly envision futures that differ deeply from the present. On the other hand, Futures Cliniques are not as much about direct pragmatic problem solving as futures workshops often are. Concentrating on practical problems and solutions can easily

narrow down the focus. The Futures Clinique is especially about food-for-thought and using one’s imagination; these can then at the next stage be applied in generating practical solutions. The concept of Futures Clinique does not, however, underestimate the importance of the practical and the concrete. In each Futures Clinique innovation drafts are developed at a working session devoted to them. This takes place towards the end phases of the workshop, so that the focus shifts gradually from abstract into concrete. In futures studies, imagining and exploring futures must lead to acting on such ideation. Godet and Durance [8] emphasise that such “pro-activeness implies voluntary construction of an action plan to incite desirable change(s) through a project”.

The idea of specifically evoking *different and alternative futures* is based on the fact that if you only stick to the evident, a number of opportunities embedded in the un-evident terrain are bound to be missed. Thinking, looking and seeing differently point to radical futures, surprising and unexpected futures, as well as to *contrafactual futures* (see ch. 2).

The Futures Clinique also has an *educational function*. The Futures Clinique aims at promoting futures thinking and futures consciousness as inspired holistic “futures learning”. It encourages participants to incorporate futures thinking as a part of their and their organisation’s everyday life—not to conceive foresight just as an instrumental means to gain competitive advantage or compose better strategies, but to incorporate values and holistic approaches as well into futures thinking. Thus, a central part of the concept of the Futures Clinique is to make participants familiar with the basic concepts, principles and methods of futures research, and especially its humanistic branches. The participants are not required any pre-knowledge of foresight or futures methods. They learn them through demonstrations and subsequent hands-on applications. According to Jackson [12], a process where anyone can do foresight without actually knowing anything about foresight is recommended. Perhaps on its deepest level, Futures Clinique is a method for futures education.

Futures Clinique suits well for all kinds of themes and topics. Thus far, it has been used to anticipate the futures of e.g. work, the internet, energy systems, cities, suburbs, libraries and technology parks.² Futures Clinique is a fitting method for deliberative, free, broad, systemic and unconventional ideation and gathering a mass of ideas to be elaborated further later on. If the theme or topic is extremely complex by its nature, then e.g. the Delphi method may be more suitable, as it allows a more thorough and longer process than the Futures Clinique.

This article describes the method of Futures Clinique and its theoretical and methodological basis. The article outlines

¹ Robert Jungk invented the method of futures workshop as a participatory tool for social innovation and for visionary futures planning at the grassroots level.

² The topics tackled were largely chosen according to commissioned foresight projects, respectively.

Futures Clinique as a method especially suitable for probing alternative, radical futures. “**Contrafactual futures as the new normal**” section presents the idea of “Contrafactual Futures” as one of the premises behind the method of the Futures Clinique. “**The process of a Futures Clinique**” section presents the definition of the Futures Clinique and describes in detail the process through which Futures Cliniques are carried out. The “**Futures provocation**” section depicts the idea of “Futures Provocation” and elaborates how alternative futures are encouraged in the Futures Clinique. The “**Futures education**” section illuminates the educational function of the Futures Clinique. The “**Conclusions**” section summarises the results and proposes further developments for the Futures Clinique.

Contrafactual futures as the new normal

The Futures Clinique puts a lot of emphasis on surprises and on the “mission impossible”, i.e. anticipating unexpected and even “impossible” events and developments. In earlier stages of futures studies and foresight, the three principles facets of futures exploration were possible, probable and preferred futures as stated by Amara [1]. The new normal in futures studies manifests itself in paying attention to the other sides of the coin as well: exploring impossible (not just possible), improbable (not just probable) and unpreferred (not just preferred) futures.

One of the premises of social sciences is that society is not a system strictly commanded by constant universal laws. Quite the contrary, societies change because humans are learning beings, and have, at least to some degree, a free will. The same applies to futures studies as well. The future is about change and emergence. The main constants, besides the effect of genes on our behaviour, are man-made institutions. Institutions are also of course subject to change, and one way to approach the future is to think about future institutions and their values and modes of conduct.

Societies are constructed through the complex interplay of individual actors and institutions, in other words established sets of values, norms and rules. Societies are becoming increasingly systemic, which means that different parts and institutions are constantly interacting and forming links. Thus, the future is about connectivity and complexity. An apt illustration of such complexity is given by the framework of 15 interconnected global challenges by the Millennium Project.³ Increasing connectivity and complexity means not only faster but also more sudden changes—the future is about discontinuities and tipping points as well as disruptions. This leads to increasing turbulence: the future is full of

visible and invisible risks and uncertainties. Turbulence means the future has to offer an abundance of ideas and resources, to evoke hope as well as fear. The future is full of threats and opportunities; alternatives and choices; liberties and responsibilities. Most importantly, the future is about action and power, as they are the forces that make the future. The future is the realm of freedom, power and will, as well as of choices. The pioneering futurist, Ossip K. Flechtheim [6], describes the dynamics of societal change and the transitionality of the future roughly as follows:

1. The world is dynamic, whereby not only its temporal states but also its basic structures change. New challenges of human interest—risks and opportunities—emerge from the changes.
2. Changes may be recognizable beforehand, and directions and speeds of the changes can in some instances be roughly foreseen.
3. Antithetical forecasts and projections also have some value; they can contribute to the clarification of problems and understanding consequences of crises. These may cover
 - (a) forecasts that never came true;
 - (b) impossibilities at their time;
 - (c) contrafactual forecasts “What if..?”
4. There is freedom for human choice to shape the future within a frame constrained but not determined by the past.

If we take antithetical forecasting from the above list of Flechtheim’s into closer inspection, two interesting issues emerge from his first point (forecast that never came true). First, forecasts that never came true are either plain examples of contrafactual futures, i.e. futures that were anticipated but that did not take place. Such lists are frequent and have some value of amusement and cognitive entertainment, rather than power of evidence against all forecasting. Second, the quality or value of a forecast is not in the fact whether it is fulfilled, but whether it has an impact on decision making. A good forecast (in the sense of having an impact) is for example such as shows negative impacts of motorway being built on a certain site. This transparency of consequences arising from the forecast leads to a decision that the motorway will be built on another site. Therefore, the forecast itself was useful, even if not fulfilled.

The next two constituents of antithetical futures are “impossibilities at their time” and “What if futures”. These are appropriate and fruitful approaches for exercises within Futures Cliniques. Such exercises extend the limits of our thinking beyond the standard.

Change naturally offers also possibilities for development and progress. In order to mitigate the prevailing connotations of threat and uncertainty that future tends to awake in us, we

³ The 15 global challenges help frame the global and local prospects for humanity, see <http://www.millennium-project.org/millennium/challenges.html>.

can actively improve our everyday futures thinking into futures orientation and further, futures consciousness [16]. It is simply a question of mental and conceptual exercises incorporated with systemic and logical thinking. The first step in overall enhancement of futures consciousness is to understand the three basic images of the collective future (possible, probable and preferred futures). The most common and prevailing one—probable futures—are however often trivial, as they do not reveal us anything new. Additionally, futures actually are never probable; futures are always surprising and novel. Apart from single variables, with current methods and methodology it is almost impossible to forecast a probable future. When futurists speak of “probable futures”, they do not actually refer to accurate forecasts and probability calculations, but to the “business as usual”—which reveals us nothing new. Thus, we should concentrate on the other two images of the future: possible and preferred futures. They help us to concentrate on the multitude of possible futures, and the ones we would like to see coming true.

We can take another step further beyond the seemingly possible—to *explore impossible futures*. Also, the opposites of the above three are useful: impossible, improbable and unpreferred futures. Thinking about impossible futures is a brain teaser to stretch one’s imagination; what is now considered impossible can turn out to be possible in the future. According to Harold Linstone [15], imagination is the most critical element of futures thinking. Therefore, it is worthwhile to try this combined quest for visioning impossible futures and thinking of their consequences by using the questioning mindset of *What ifs?*

Undesirable futures, on its part, is an antithetical concept (to desired futures) that helps us clarify the kind of futures we want by thinking about their opposites. Improbable futures help us to think about emerging issues, something that is visible today but lies in the marginal. Such trajectories are often embedded as seeds in the phenomena that weak signals are pointing to.

This challenge of probing antithetical futures can typically be taken in Futures Cliniques. The participants are asked to think about impossibilities. Here are the results of such an exercise where a question was posed about what is considered impossible today and to the time horizon of several decades ahead as well. Here are some answers:

- *To live without oxygen for more than 2 min*
- *To live forever*
- *For men to give birth*
- *To defy the laws of nature—if there’s no God who could change them*
- *It’s impossible to think of anything impossible*
- *For humankind to survive without compassion*
- *Total Artificial Intelligence, or augmenting human brain with computer chips*

In a Futures Clinique, after individually generating impossibilities, the participants start discussing and testing the

results. Frequently, it turns out that the impossibilities may no longer be impossible futures. For example, technological advances may change impossibilities into possibilities sooner than expected. Pauwels and Bergier [23] show that while dreaming the impossibilities become possible is in the realm of science-fiction, it should also be included in the paradigm of science to accelerate bridging the gaps between history, present and future.

The process of a Futures Clinique

The rationale of the Futures Clinique

The Futures Clinique is not only a concrete workshop, but a threefold process (Fig. 1). It begins with a careful and thorough composing of a thought-provoking background material, which is sent to the participants prior to the workshop session. The background paper introduces the theme and goals of the given Futures Clinique, but especially places them into a broad socio-economic context. In addition to providing useful and focused information, the paper is to offer interesting and fresh foresight points of view to the theme in order to inspire and evoke enthusiasm on the subject matter among participants. In order to nourish ideas and to help mapping the environment from which futures evolve, the background paper can also present some interesting and important current phenomena, trends and weak signals. As in scenario construction, for Futures Cliniques a critical building block is identification and analysis of drivers and uncertainties [22, 24]. Therefore, a broader list of seminal drivers for change (megatrends, trends, weak signals and wild cards/black swans) or emerging technologies can be presented to facilitate in outlining the setting for a future society. More obvious drivers such as megatrends and

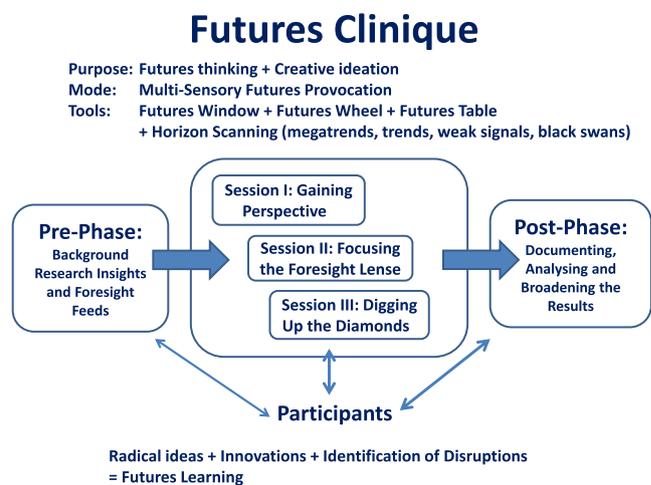


Fig. 1 The participatory foresight process of a Futures Clinique

trends are accompanied by elements of high uncertainty and ambiguity, i.e. weak signals and black swans.

The Futures Clinique incorporates participatory elements from the very beginning. As the background material is sent to the participants, a set of pre-questions is also delivered. The participants are asked to offer their knowledge by giving answers to some essential questions concerning the subject matter. The answers are used to plan the working at the workshop, but answering the questions also orientates the participants towards the upcoming session. The participants can also add to the list of drivers for change, provided with the background material.

The second phase of a Futures Clinique process is the actual set of workshop sessions. Typically, a Futures Clinique is organised within 1 day. Ideally, it may be organised in a series of several 1-day Futures Cliniques, each building on the results of the previous one. The Futures Clinique begins with an intensive dose of Futures Provocation, a presentation introducing the basic concepts of futures thinking and futures research, the central ideas of the background paper and the answers received to the pre-questions. Alongside providing essential information, the function of the presentation is to provide a transition route to futures space. It is to steer the participants away from conventional thinking and toward a fresh forward-looking mindset, using peripheral vision [5]—to provoke novel ideas. The introduction of the principles of futures thinking and futures research does not only aid in anticipating futures but also liberates and expands thinking on present issues. Although it is useful, e.g. for a strategy process to look further in time than a few years, a free-minded thinking of the futures open up new insight and possibilities also at the present.

As apart from conventional scenario processes including the business-as-usual option, Futures Clinique gives a special emphasis on possible, preferable and “improbable” futures. The idea is to concentrate more on possible transformations than “probable”, conventional outcomes—to come up with more or less radical ideas, possibilities and solutions. On the other hand, differing from traditional future workshop methods, the emphasis is not on concrete problem solving so that the focus would not be narrowed to the tangible and practical. The Futures Clinique working evolves from abstract to concrete, but the stress is on free ideation on the possible futures of the subject matter. Methods, such as the Futures Wheel, are used to give the ideation a loose structure, and background material—such as a list describing various weak signals—to offer some starting points for the ideation. At the end of the workshop, the results of an intensive and forward-looking ideation are used to come up with radical solutions and innovation drafts, to be elaborated further in another session or in another Clinique. The results may also be taken by some of the participating stakeholders to be further processed in their own organisations.

Choosing the participants

A crucial factor in ensuring alternative thinking is the assembly of participants. A Futures Clinique should never include participants only from one organisation or from one sector or industry even. The participants should represent as wide a range as possible of different sectors, industries, occupations, generations or age cohorts, tastes etc. As with other workshop methods, a wide variety of participants is to ensure the foresight being democratic and to make sure that as few as possible of different views about the future would be missed or neglected. In Futures Cliniques, however, the diversified set of participants is also a pivotal part in facilitating radical thinking and imaginary, complex futuring. The participants are encouraged to freely express their views, despite how unorthodox or “impossible” they may seem. This is easier if the participants come from different organisations and backgrounds. Each participant can also nourish his/her own thinking with the ideas received from others.

Visual methods to multi-sensory futuring

In order to evoke imagination and non-conventional thinking, visual means are also utilised right from the beginning of a Futures Clinique workshop. Visualisation may be applied in various ways. Typically, a method called “Futures Window” is utilised. It is designed to visualise and identify weak signals, and also help participants to come up with new ones [9]. Futures Window is a cavalcade of selected, ambiguous and even cryptic images, shown as a Powerpoint slideshow and accompanied by instrumental music. The images are chosen by the futurists in charge of the Futures Clinique. Music and visuals are effective in arousing intuition and emotion as contrasted to verbal and conceptual thinking, which are more linear and “logical” modes of thought compared to visual and emotional thinking. Intuition and emotion are valuable in enhancing imaginative, non-routine thinking, and on the other hand in forming holistic, value-oriented images of the future. Often the interpretation of visual stimuli is also highly diversified.

Other means of applying visual techniques is to use actual pieces of art for analysis and foresight focused on the chosen topic. The participants are asked to interpret futuristic paintings as containing seeds of tomorrow’s landscapes or developments. Cartoons can also be used as material for detecting weak signals and as an approachable way to conceive the futures through visual means. Cartoons as a method to spot weak signals was tested in two Futures Cliniques held at Technology Centre Innopark. Cartoon strips were selected randomly from Finnish newspapers of a given period, and attached to large sheets of paper. The sheets were put up on walls. The participants browsed through the strips and wrote their futures-oriented interpretations on them on post-it pads.

By the end of the day, the space was filled with various sheets of paper with a mass of different ideas and interpretations attached. As the participants were surrounded by the ideas they had come up with during the day, the abstract thoughts and visual stimulations were made concrete, tangible and easily memorized. Using papers on walls to embody abstract ideas of the futures was inspired by the concept of *paper spaces* by Alex Soojung-Kim Pang [21]. Pang claims that filling the space with “concrete” futures visions creates a cognitive and physical space that literally surrounds groups in futures workshops. The process itself of creating these spaces can promote a sense of a common vision for the future. The paper medium also allows interaction and creation—the ideas can be easily combined and classified, they can be annotated, extended, argued over and also played with [21].

The structure of a Futures Clinique

The actual Futures Clinique usually has three sessions and is conducted both in joint sections and in parallel small groups. The maximum number of participants in one group is seven, based on the experience gained from different-sized groups. The joint sections are located at the beginning where all participants hear the Futures Provocation and view the Futures Window, and again at the end where the results are presented, cross-fertilised and discussed in interaction. The parallel small group sessions take place between the joint sections. It is quintessential that each group has a moderator who instructs the participants and also encourages open generation of ideas to fuel up the reflection.

Session I: gaining perspective

In session I, the small groups start discussing the subject matter. The main topic of a Futures Clinique may be quite broad, but it always should set the time horizon, e.g. “Energy Futures 2030”. The theme can also be more focused, e.g. “New Concepts of Urban Planning in 2020”. The idea is for participants to share their views on the chosen topic, formulate what their personal preferred futures consist of and fertilise their own thinking and ideas with others’ views. The most relevant and interesting drivers are being sought and discussed, and then chosen for closer scrutiny from the list of drivers provided for the participants.⁴

The method of Futures Wheel [7] is used to give the ideation and discussion a structure. A Futures Wheel consists basically of an inner and outer circle (=wheel) drawn to a large sheet of paper (approx. 2 × 1 m). Ideas evolved in the initial discussion are written down to post-it pads and placed on the inner wheel. This phase usually lasts for an hour.

After the initial discussion and ideation, in the second phase of session I, the ideas collected are worked out on a more concrete level. Groups start to discuss factors and measures that would advance the collected ideas, or on the other hand hinder them as bottlenecks. Finally, the groups are encouraged to come up with innovation drafts or seeds of innovation that would embody the ideas. The ideas are again written down to post-it pads, and placed on the outer circle of the wheel. Each participant writes his or her own ideas.⁵

Session II: focusing the foresight lens

After the Futures Wheel has been finished, session II begins. The purpose of session II is to classify and clarify different aspects of the ideas generated during session I. As a tool, a PESTEC table is usually used for this purpose. PESTEC is a futures table drawn as a matrix on a large sheet of paper with the following dimensions: P=political, E=economic, S=social, T=technological, E=ecological and C=cultural/customer/citizen. The groups are invited to classify the central ideas of the Futures Wheel into the different sections of the PESTEC, and also to possibly add new ideas to each section. This is especially encouraged if some section contains fewer ideas or elements than the other ones. Possible effects and consequences of the Futures Wheel’s ideas can also be added. The most crucial ideas can be filtered out of the mass of reflections, for example by voting. It is important, however, that some other ideas than the most voted ones are also attached to the PESTEC table. After each section of the PESTEC has been filled, the groups are instructed to discuss the PESTEC as to outline the big picture the individual ideas are beginning to comprise. After the discussion, the participants can vote for two most important ideas on each section to distill the core ideas for a scenario. Finally, each group gives its initial scenario sketch an illuminating and catchy name.

Session III: digging up the diamonds

As the final, summary session, session III is the one with the most options on how to be carried out. The self-evident way is to continue clarifying and elaborating the previous sessions into a scenario narrative. Scenario narrative is a lively, fictional story of one possible future. The body of the narrative is built of the ideas of the PESTEC table that received most votes within a group (see “[Session II: focusing the foresight lens](#)” section). The body is then complemented with other ideas of PESTEC or the Futures Wheel. After the ingredients are chosen, a polemic and lively story is written based on them. The story can be illustrated with drawings by the participants. Peter Schwartz even suggests

⁴ The participants are also invited to add new items to the list.

⁵ This is a modified version of the Futures Wheel, going from abstract to more concrete. The original logic of the Futures Wheel is to go from direct implications to indirect ones [7].

that the drive to tell stories about the future may be “hard-wired” into the human brain [24].

Another option is to leave out the scenario narrative. If this option is chosen, session III is organised so that the groups can exchange their PESTECs of Futures Wheels and cross-fertilise them through visiting and complementing each other’s group results.

After the three sessions, all participants gather to hear each group’s presentations and to discuss the results. Time allowing each group can go through their whole small work process, but most often it suffices that each group present their scenario narrative, which sums up their work. This is especially the case if there are more than three small groups. Narratives are important and effective ways of communicating futures images. Futures literacy, as Miller [17] proposes it, is strengthened through imaginative storytelling. The ways we act and perceive the present are deeply influenced by the way we imagine the future. Futures literacy is about developing the storytelling capacity, the narrative capacity, to invent alternative worlds, to understand system boundaries. Miller points out that futures literacy is also what we are doing when we extrapolate. Futures Cliniques are co-creative catalysts for futures storytelling and thus for futures literacy at large.

Futures provocation

The guiding principle in a Futures Clinique is that probing the future requires concentrating on possible, preferable, surprising and alternative futures instead of probable ones. This is a provocative challenge as we often tend to think of the future from the narrow scope of the present—confined to its values, technologies, structures and shared contemporary images of the future. Futures are always open and emergent, which inevitably requires questioning the present.

Furthermore, in the age of open information and ever-deepening and dispersing networks, we need to find ways to fertile combine individual, creative insight and collaborative co-creation. In a way, merging individualistic and group thinking is a paradox. Creativity requires by definition both individuals with unique ideas and a shared pool of knowledge, a fertile ground of common culture and interaction between individuals [22]. At the same time, however, collective thinking with its conventionalism tends to undermine radical, individualistic creativity [19]. The phenomenon of groupthink may force outlying opinions and views filtered under the collective majority [20]. This paradox, and ways to relax and solve it, is at the very core of the methodological development of the Futures Clinique.

To avoid conventionalism and straightforward linear trend extrapolations, Futures Clinique is methodologically attuned to provoke radical thinking. The word “radical” is

derived from the Latin word *radicalis*, meaning “going to the roots, origin, essential” (lat. *Radix*=root). Radical thinking requires a critical, deep mindset and readiness to look under the surface of different phenomena. By fostering radical, deep and critical thinking Futures Clinique enables “futurological imagination”, as important a tool for unprejudiced futurologists as “sociological imagination” is for sociologists.

Furthermore, thinking radically and encouraging deep futures imagining, radical thinking requires provocation. Provocation is a derivative from Latin words *pro+vocare*, which means “to call forth”. To provoke is to call forth novel ideas and unexpected reactions from under the surface of everyday cognition by presenting staggering, pointed and fresh ideas. What seems staggering or fresh is of course relative, in analogy to the “beauty lies in the eyes of the beholder”. Accordingly, the content must be selected and formulated according to the constitution of the participants.

The basic principle in the concept of Futures Clinique allowing “futures radicalism” is systemic thinking and a broad scope of the so-called peripheral vision [5]. To go into the roots and the essential, separate issues and phenomena need to be set into a broad context. Futures of cities can, for example, be explored in the context of digitalisation and the generation of digital natives, as was done in a Futures Clinique organised for a research project on Resilient Suburbs funded by the Finnish Technology Fund [10]. We have used the theory of the meanings society developed at the Research Group for Media and Communications (FMC) at Finland Futures Research Centre (FFRC) as a broad societal context systematically in every Futures Clinique we have moderated. Meanings society hypothetically depicts the societal structure of post-informational societies, stressing content economy, internet as the generic technology, prosumerism, immaterial values of self-expression and identity building, as well as abundant and free flows of (meaningful) information. The meanings society can be shortly defined as a possible societal phase after the information society, in which the society is not built on the processing, production and consumption of information but of cultural meanings. The driving force behind the meanings society is the individual’s quest for meaningful experiences and individually meaningful identities. Production is allocated to meet these demands, and the value of self-exploration is also utilised in new organisation of work. Internet and digital media keep developing as vast “identity machines”. The logic and values of networks disperse into every inch of society, and society with its different functions is increasingly organised from the bottom-up.

Peripheral vision refers to the ability to perceive the broad and systemic context of different issues. Individuals as well as organizations tend to focus on their core business and core interests. However, to fully understand the reality and the potentials embedded in the present, one has to broaden the

scope to see actual and potential connections of an issue. Peripheral vision is decisive not only in foresight, but becoming a general competence in coping in the increasingly systemic, connected and networked environment. Only by having a deep, plural and contextualised understanding on the issue at hand one can begin to creatively imagine its futures. Although anticipatory visioning rests on rigid empiricism, it is of equal importance to detach oneself from the “crackpot realism” of today to allow free and radical thinking. According to “Dator’s Second Law” [4], “Any useful Idea about the future must appear to be ridiculous”. Dator’s Second Law can be understood at least in two ways. All the ideas that make the future differ from the present seem ridiculous because they diverge so radically from present notions on what is possible and probable. Secondly, new ideas seem ridiculous simply because they often are so. Our understanding of future issues, products, values, etc. is inevitably so rudimentary that ideas considering the future often seem as naïve and silly simplifications. However, this should not keep us from visioning future possibilities.

Futures provocation and radical futures thinking are enabled in four ways during a Futures Clinique. First of all, the background material always includes some very current and well-thought information for the forthcoming workshop, as depicted in more detail in the previous chapter. The background paper also introduces the societal concepts used to provide the broader context, and the ways in which the concepts are related to the subject of each workshop. This means *initiation to the big picture of societal development*, as a comprehensive futures landscape where the radical future images are invited to be projected. A thought-provoking photo is also selected for the cover, as a kind of an introduction to visualising the futures. The questions sent with the background reading prompt the participants to formulate their own, personal views on some future-oriented issues. For example, for a recent Futures Clinique commissioned by the Academy of Finland on the futures of energy systems [11], the participants were asked to mention some radical sustainable energy solutions that are not possible or acknowledged yet, but could or should be. Besides futuristic ideas such as collecting ubiquitous kinetic energy, some participants mentioned next-generation nuclear energy as a part of the solution in tackling climate change. Advocating nuclear power can be said to be radical, as nuclear reactors are usually not considered as an option to produce CO₂ free energy, and nuclear energy treated even as a taboo. It is illuminating that in groups some even mentioned the possibility to build more atomic energy.

Secondly, the presentation held by futures experts before the work begins, called generically “Futures provocation”, offers an intense introduction to alternative futures thinking and the specific theme at hand. As it includes masses of futures information in a very concise form, it is aimed to

leave the listener overwhelmed, even induce a “future shock”, so that their minds would be prepared to explore the unknown. This means *shocking futures* in order to break down the old habits of thinking *to explore new and open futures territory*. The emphasis on visual aspects continues on the presentation: intriguing and illuminating background images are selected for the presentation slides. The Futures Window (as depicted in the “*Contrafactual futures as the new normal*” section) finalises the presentation and acts as a (presumably) relaxing but stimulating transition to the group work phase.

Thirdly, the group work sessions are arranged by various means to produce ideas as plural as possible. This means *co-creative diversification of futures images* and solutions. The participants in each group are selected carefully, so that the constitution of a group is not biased in terms of age, sex and occupation/position. This is crucial, as studies in social psychology show that in groups of like-minded individuals their opinions tend to lose the nuances and move towards the group “extreme” [2]. The phenomenon is called “group polarisation” [18]. For example, if a group consisting of persons adhering to green values discusses energy policy, the group members’ views on nuclear power tend to become more anti-nuclear.

The work begins with a discussion in which each member of the group can state his/her opinions on the theme. To minimise the effect of peer pressure and losing individual views, this task can also be done so that everyone writes his/her ideas down to a paper, after which the moderator reads the ideas aloud anonymously. Otherwise, the work is carried out through discussion, so that participants build on each other’s ideas. Throughout the group work, the moderator encourages everyone to speak out freely. The moderator can also suggest some ideas that have not been dealt with. At some point “cross-fertilization” can also be applied, in which groups work out on other groups’ results.

Fourthly, as moderators document the results and write a report or other publication on them, they also work the ideas further as a back-office work. This is the final phase in ensuring that group thinking does not dominate. Here, the role of the moderator is that of the journalist or researcher, who analyses, interprets and complements the mass of ideas. The moderator is allowed a voice to speak out and state his/her well-argued opinions and insights. In this respect, the role of a moderator in a Futures Clinique differs from that in traditional workshops where the moderator only facilitates working not directly contributing to it and, for example, sees to it that no participant dominates the discussion. It is also the task of the moderator to place the results into a wider context and encourage the participants to seek out connections between separate ideas and themes. This means sophisticated elaboration of the generated futures imaging. All in all, it is very important that the report or

publication is written in a personal and challenging style, building on crowdsourced ideas. Before finishing the report or publication, it is first sent to the participants to be reviewed, corrected, complemented, etc. In this way, this final phase also follows the logic of iterative idea development utilising both individual and group thinking.

Futures education

Futures Clinique is an easily applicable platform for Futures Education. It offers a method for “informal”, collaborative education and co-creative learning for the futures. Through background material and the “Futures Provocation” presentation, Futures Clinique offers the basic concepts of futures thinking and basic knowledge on the key drivers (megatrends, trends, weak signals and black swans) that shape the futures. Participants can then use this knowledge to learn from each other and probe future alternatives collaboratively. As the Futures Clinique puts an emphasis on the emergent, it suits well with the new education paradigm highlighting discovery and serendipity. Especially, with its combination of deep and thorough thinking and hands-on approaches, the Futures Clinique holds big potentials to be applied for low-threshold futures learning which is becoming increasingly important in almost all spheres of human activity.

Foresight and futures thinking are becoming imperative in the new working life and in life in general, and thus should be a part of the educational institutions of society. Futures education means teaching and learning foresight, futures thinking and futures methods. However, education in general is fleeing away from institutions and becoming ubiquitous—education should be conceived rather as *learning* that can happen spontaneously anywhere, would be inner-motivated and based on open peer-to-peer approaches.

As Alvin Toffler [26] states, understanding the future is becoming as important to understand the present as earlier has been understanding the past. Future is constantly “leaking” into the present, and all of us have to take it into account in planning our lives and understanding the world around us. It is justifiable to argue that futures methods, futures thinking, foresight skills and futures learning are soon-to-be basic competences for all of us.

Futures Clinique is designed as a platform for inspiring futures learning. It adheres to the current trends in education stressing participatory approaches, peer-to-peer learning and crowdsourcing. Futures Clinique offers the basic tools and concepts for futures thinking and even futures consciousness in a compact package. In addition to the up-to-date education philosophy and learning methods, Futures Clinique is a very adaptable learning tool as it can be executed almost everywhere. At the same time, one must bear in mind that conducting

a Futures Clinique is time-consuming. It requires a lot of preparations, analyses and documentation, as well as a qualified team of moderators. One of the most important future developments of the Futures Clinique would be to pilot it in a school or a university.

Futures Clinique can be divided into two parts in terms of futures learning. First, it offers basic knowledge on foresight and futures thinking (theory, concepts and methods). This part of “futures mindsetting” can be thought as “education”—in juxtaposition to more active, independent and individual-oriented learning. This is because futures methods and concepts, as being very specialised knowledge, have to be “taught” to the participants by futures experts through practical demonstrations. A part of this “education” is also offering some up-to-date views on the futures of different topics.

Second, the participants of a Futures Clinique apply the methods and concepts they have been taught to probe different futures on the theme of the day. By concretely doing cooperative foresight, they learn and internalise what they have just heard and seen. Most importantly, and here comes the actual peer-to-peer⁶ learning part, the participants learn from each other and can thus attain highly diverse visions into the future. A major share of the actual futures knowledge gained in a Futures Clinique process comes out from these collaborative sessions. Besides being based on inner motivation helping to achieve a deeper understanding on possible futures, peer-to-peer learning is topical especially in foresight. Due to the systemic and complex nature of foresight and futures thinking, an individual expert, regardless how experienced he or she is, cannot possess enough information and have different enough points of view to successfully probe possible futures that radically differ from the present situation.

Not only is foresight needed in a world of constant change, but the nature of futures learning goes well with the whole paradigm change in education. Don Tapscott [25] advocates “Discovery Learning” as the new learning paradigm, by which he means learning through self-motivated inquire, browsing the web for interesting contents offered by media institutions, prosumers and fellow learners and increasingly by world-class universities. Education would not be lecturing anymore, but bottom-up discovery, conversation and interaction instead. Learning is becoming an amusement instead of forced obligation. Young people learn new, interesting and important things constantly, often almost without noticing it themselves. Lifelong learning as an obligation is becoming a thing of the past as digitally enabled learning

⁶ Peer-to-peer refers here to mutual-learning effects without hierarchies between the participants. Equality is encouraged, so that for example a young student would feel free to question the views of an established expert.

merges everywhere and becomes ubiquitous as well as limitless.

The new kind of learning adheres to the same virtues needed in foresight and rigorous futures thinking. “Students” learn to think critically for themselves, research, find information, analyse, synthesise, contextualise, evaluate, to apply what they have learned and to collaborate and communicate. Moreover, Discovery Learning enables another educational approach that we advocate in Futures Cliniques, i.e. *learning by surprises*. This combination of discovery learning and learning by surprises both aid in grasping the emergent. Futures Clinique is especially fitting a learning platform for this kind of educational paradigm. As participants from various background interact and share information they besides teach each other their specialised knowledge, they get a hold of their own tacit knowledge as well. This fertile interaction efficiently embraces serendipity, which is enforced even more by the emphasis on weak signals, black swans, the emergent and the possible instead of probable in the very concept of the Futures Clinique.

Conclusions

Futures Clinique was presented in this paper as a distinctive futures workshop with an emphasis on radical futures, peer-to-peer approaches, visual methods and futures learning. It is designed for a deeply networked, constantly changing, fragmented and diverged society flooding with information, where changes are ever-faster and citizens need robust abilities to do foresight, to learn and to adapt to novel situations, or more precisely, to act on changing situations so that they would be more akin to their tastes.

Futures Clinique is an adaptation of the traditional futures workshop to suit the world of constant flux and bottom-up initiatives. However, as a relatively new concept it is a work in progress and should be further developed to be even better suited to the world of the twenty-first century.

To begin with, the Futures Clinique sessions tend to fall into a peril of the digital era, the overload of fragmented information. A fundamental challenge is that the richness of a conversation does not transfer very well into the limited space of a post-it pad. A post-it pad can contain the core idea, but the subtle connotations which often include the most interesting and also important points tend to be trimmed out from the post-it pads. This is definitely one of the main issues to be solved in further developing the concept of Futures Clinique. How to ensure rich ideation as free as possible and at the same time document it concisely and properly? One solution could be putting a special emphasis on well-argued scenario narratives which each group should write based on the ideas they find the most important and interesting.

Although presenting itself as a workshop for the digital world, an obvious shortcoming is that actual digital elements are yet to be applied to a higher degree, besides digital walls and Futures Windows. This is relatively easily solved, as digital tools could be used in many ways in refining Futures Clinique sessions. The analysis of vast amount of ideas could be crowdsourced so that the material would be more thoroughly analysed and perspectives diversified. This would also partly solve the problem of information overload. Different social media platforms such as Twitter could be applied so that people outside the actual participants could also be involved. Even a whole Futures Clinique could be arranged on social media platforms, especially on Twitter or some other similar service—the amount of marks in one tweet equals approximately that of one post-it pad. Perhaps the most critical virtue of a virtual session would be that it would combine the best of individual and group thinking. Participants would feel free to express their thoughts freely, and also have some quiet solitude to think without distractions, and at the same time interact with other views and perspectives and building on them.

The Futures Clinique embraces a culture of continuous experimentation, as opposed to the traditional bureaucratic culture of rigorous, careful and cautious planning that almost hysterically avoids risks and is suspicious of all that is new. A Futures Clinique produces quite a massive amount of new ideas and initiatives, but the problem is that they often tend not to be applied in practice. As the emphasis is on open and free ideation, there is often too little time to really plan how the ideas could be implemented in an organisation and how the bottlenecks could be removed. Therefore, the concept of Futures Clinique should be modified so that there would be a “module” available which would be devoted to devising ways and concrete steps by which an organisation could translate the more or less radical ideas gathered into practices.

Finally, Futures Cliniques incorporate the same fundamental deficiencies as other brainstorming and workshop methods. Can radical, individual and original thinking survive in a group? Does not brainstorming easily lead to superficial, conventional ideas or to repeating buzzwords instead of opening new paths? The Futures Clinique offers some solutions to these shortcomings as has been shown in this article, such as including an extensive back-office work to analyse and interpret the results and offering the participants some further food for thought. Nevertheless, the Futures Clinique should be elaborated so that it would better support original, deep and well-argued thinking.

The conflict between the group and the individual, too short a time-span to really immerse in deep thinking and the vast amount of fragmented information are, however, central paradoxes of our era itself. By developing efficient ways to solve these issues, the Futures Clinique could offer a powerful

and empowering tool to make sense of our times and consequently its possible futures.

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References

- Amara, Roy (1981) The futures field: how to tell good work from bad. *The Futurist*. April 1981
- Aronson, Elliot (2010). *Social psychology*. Upper Saddle River, New Jersey. pp. 273
- De Bono, Edward (1985) *Six thinking hats*. Little, Brown, and Company, Boston.
- Dator, James (2006) Till the ductile anchor hold: towards space settlements in the 21st century. http://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20070008272_2007008608.pdf. Accessed 16 June 2013
- Day GS, Schoemaker PJH (2006) *Peripheral vision. Detecting the weak signals that will make or break your company*. Harvard Business School Press, Boston
- Flechtheim OK (1970) *Futurologie—Der Kampf um die Zukunft*. Wissenschaft und Politik, Köln
- Glenn, Jerome (2009) The futures wheel. Chapter 6. In: *Futures research methodology V 3.0. Millennium project*.
- Godet M, Durance P (2011) *Strategic foresight for corporate and regional development*. UNESCO, Paris
- Heinonen S, Hiltunen E (2012) Creative foresight space and the futures window: using visual weak signals to enhance anticipation and innovation. *Futures* 44:248–256
- Heinonen, Sirkka & Ruotsalainen, Juho (2012) *Ihmisten kaupunki 2030. City for Citizens 2030. The second Futures Clinique of the project "Resilient Suburbs"*, held on 16th of April 2012. Finland Futures Research Centre, E-tutu Publications 7/2012. In Finnish, with an English abstract. http://ffrc.utu.fi/julkaisut/e-julkaisuja/eTutu_2012-7.pdf
- Heinonen, Sirkka & Ruotsalainen, Juho (2012b) *Toward a distributed world. Background Paper for 3rd December 2012 Futures Workshop: Energy 2030*, commissioned by the Academy of Finland.
- Jackson, Michael (2011) *On systems thinking and preparing for the future*. Interview of Michael Jackson, Seville 12 May, 2011. <https://sites.google.com/site/futuremediac/videos-presentations>
- Jungk R, Müllert N (1987) *Future workshops: how to create desirable futures*. Institute for Social Inventions, London
- Kanninen T (2013) *The crisis of global sustainability*. Routledge, New York
- Linstone, Harold (2011) *On future developments of the Delphi method and futures studies*. Interview of Harold Linstone. Sevilla 13 May, 2011. <https://sites.google.com/site/futuremediac/videos-presentations>
- Lombardo, Thomas (2012) *Consciousness, cosmic evolution, and the technological singularity*. *Journal of Futures Studies*, December, 2012
- Miller, Riel (2011) *On creativity and futures design*. Interview of Riel Miller. February 10, 2011. Seminar by Finland Futures Academy, Finland Futures Research Centre (FFRC). <https://sites.google.com/site/futuremediac/videos-presentations>
- Myers, D.G. & Lamm, H. (1975). "The polarizing effect of group discussion". *American Scientist* 63(3): 297–303. <http://www.davidmyers.org/davidmyers/assets/Polarizing.Eff.Group.Disc.pdf>
- Lanier J (2010) *You are not a gadget*. Knopf Doubleday Publishing Group, New York
- Furnham A (2000) The brainstorming myth. *Bus Strateg Rev* 11(4):21–28
- Pang AS-K (2010) Paper spaces. *Visualizing the future*. *World Futur Rev* 2(1):31–40
- Paulus PB, Nijstad BA (2010) *Group creativity: innovation through collaboration*. Oxford University Press, Oxford
- Pauwels, Louis & Bergier, Jacques (1974). *Impossible possibilities*. St.Albans, Herts, NF
- Schwartz P (1996) *The art of the long view. Planning for the future in an uncertain world*. Doubleday, New York
- Tapscott, Don (2012) *Discovery learning is the new higher learning*. <http://www.theglobeandmail.com/commentary/discovery-learning-is-the-new-higher-learning/article4610656/>
- Toffler A (1970) *Future shock*. Random House, New York