

# MENTAL TIME TRAVELLING IN FORESIGHT PROCESSES – CASES AND APPLICATIONS

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## **Abstract**

Mental Time Travelling is a method of guiding participants of a workshop into a picture or a whole series of pictures of the future. It is a movie rather than a static image. In the mean time, the concept has been established and tested in practical cases. In foresight processes, futures generation or future-oriented technology analysis in general, mental time travelling is still a new method and only rarely used to open up the minds of participants at the beginning of workshops so that their thinking does not remain in the past and present. Time travelling can also be applied in different cases and at different stages of a foresight process (phases of Strategic Intelligence Gathering, Sense-Making or even Implementation), e.g. participants are also able to think disruptively, in new pictures instead of just extrapolating from the past.

Mental time travelling puts the participants in the condition to “see”, even “feel” pictures of the future in the different stages of a foresight process, i.e. to identify details of the pictures in the mind. For this purpose, guidelines, a specific kind of scenario and instructions for the facilitators of the specific sessions as well as a storyline that resembles the one in scenarios or questions have to be prepared. Some special effects (time machine, mirrors, bells, alarm clocks etc.) can be helpful to further open up people’s minds, to get better access to their intuition and unconsciousness and to motivate the participants of a foresight process to support the process further.

Clinical and psychological studies for this kind of Time Travelling do not yet exist but first experiences from very different foresight processes and single workshops are available and can be reported (case studies).

The paper presents the experiences from six national and international cases, in which time travelling was applied in a foresight process. In addition to the workshop about Mental Time Travelling, which will be conducted at the FTA conference 2014, different ways of performing are reported and set in the context of the specific foresight process concepts. Experiences are shared by explaining the lessons learned and the pros and cons of this new method so that organizers of foresight processes can better assess how the method fits their specific context, objectives, method mix and sample of participants.

**Keywords:** Mental Time Travelling, Foresight, mind opening

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## **Introduction**

Time travelling is an old idea – often reflected in novels, Science Fiction and movies. Some have become very famous, e.g. the “Time Machine” by H.G. Wells 1895, or the movies “Back to the Future” or “Terminator”. A good overview can be found in Blask and Windhorst 2001.

Nevertheless, it is rather a matter of believe if time travelling will ever function. Well-known professors of physics have reflected on time travelling, e.g. Werner Heisenberg, Max Planck, Albert Einstein or Erwin Schrödinger.

If some day time travelling is possible, physics professors assume that trips into the past are rather impossible – but they can image travelling into the future (Hawking 2010). In quantum physics, time travelling is an important topic (for an overview see e.g. Deutsch and Lockwood

1994). Interestingly, until now, nearly all novels or movies have needed a kind of machine (Blask and Windhorst 2011, Chadwick 2012 or already Wells 1885).

All these cases are based on the assumption that there is only one past, one present and one future. This general hypothesis has not yet been proven wrong. Nevertheless, some scientists assume a parallel universe and therefore different pasts, futures – and even presents. In Futures Research or Foresight, we are talking about open futures, options that we have and that in the end only one future will be a present, but we can choose and have different “futures” which are lying ahead. Therefore, we like to use the plural (futures).

On the other hand, as “future”, “futures” or “futures research” have to do with time, especially a time that has not yet come, for which we have no facts and figures. It is natural to think of travelling into that part of time and have a look what the world might look like – in “the” future, the one we are just imagining at that time. Then, we can work with self-fulfilling prophecies (see examples in Biggs 2009: 298, or Merton 1948 cited therein) in a more practical way to make things happen or with self-destroying prophecies to prevent developments.

The best machine for travelling through time that we have until now is our brain – therefore it can be used as a time machine for our thought experiments. We travel in our imagination. And if you are able or learn to make use of your intuition (for a state of the art example of intuition research, see Sinclair 2012), you might know more than you expected – and time travelling leads you to very interesting places and pictures.

Time Travelling is only possible in linear or partly linear time concepts which have a past, a present and a future that will be perceived as “the present” later. This is not possible in cyclic time concepts, in which times or events are repeated. Mental Time Travelling is something very personal and individual – but the way it is performed, does not take into account the personal perception of time (e.g. five minutes can be short if you are active and long if it is boring).

Time Travelling is also independent of locations and “space”. You can go wherever you like and whenever you like. Therefore, Mental Time Travels are “fantasy trips” fuelled by the facts you know and have in mind, and by your intuitive imagination. The time traveler is imagining the future(s) – as much as he or she is able to.

But why should we have a look into the future? We have to admit that we are not able to predict what exactly will happen on February 27, 2056. But what we need are information and directions, guiding pictures and objectives to achieve. We want and need to plan. We have to prepare for different potential futures and we would like to know what futures are realistic. We have the intention to realize those futures with positive chances (self-fulfilling prophecy, see Biggs 2009) and at the same time to prevent those futures that are aligned with danger, trouble or inconvenience (self-destroying prophecy).

What we might see, is of course influenced by the present and can therefore sometimes be regarded as a prolonged present (see Novotny 1992) but if we are in the right mood and get at least a bit of relaxation, we might have some entrance points to our sub-consciousness, which we are in general unable to use. Therefore, Mental Time Travelling was developed in order to have better access to our thoughts (mind-opener) and to use it in thought experiments. In Foresight, where a lot of thought experiments, imagination but also assessments are needed, it is natural to apply such an approach. Using this idea as a point of departure, I started to use Mental Time Travelling privately, and after some time in public Foresight projects.

The contexts were different, so Mental Time Travel was tried in different stages of a Foresight process – but in most cases at the beginning of a process or a workshop. The following sections describe the concept as such, the different applications and some lessons learned. Clinical and

psychological studies for this kind of Mental Time Travelling do not yet exist so that we have to rely on the first experiences from very different foresight processes and single workshops which can be reported (case studies). Some pros and cons are explained so that future organisers of time trips can already learn from these experiences.

### **Methodological approach**

Most people permanently futurize, predict or estimate something, or travel in time – but they do not notice it. You are already on a mini-trip if you imagine what the weather will be like the next day so that you can choose your clothes. The majority of the time travelling population travels to the past, especially to the own past. Psychologists and brain researchers have just stated that human beings perceive their own past in different ways every time they think about it. People think about past events unconsciously and as we do this repeatedly and change something from our own past making it nicer, we are not used to doing this with the future, the time that is lying ahead. Future time is often perceived as fixed or even determined by God.

We can definitely not predict the future. But some developments are well known to us, especially those which develop over a longer period of time (so-called “trends”), for instance demographic changes. In research and technology, we also know a lot because techniques are – qua definitionem – made by human beings, their projects have an end (at least when the money is used up) and are supposed to deliver a result. In a project plan, one has anticipated the future, planned for it, worked for it and normally (try to) realize it. This is like “self-fulfilling prophecy”: people imagine something, make it explicit, others can also imagine it, together they work in one direction and make the development possible, especially if there is a promoter of the idea. This is the principle behind the later use of Mental Time Travelling for Foresight purposes.

Accordingly, we can imagine things, techniques or changes of the future. Sometimes, we have no name, no expression for it – or later, completely different names exist, but we can already think of a picture.

In the U.S.A. first attempts of Mental Time Travelling were developed (e.g. Markley 2010). Some even used deep relaxation methods or hypnosis to ask the participants questions and to involve their unconsciousness to answer them (e.g. <http://www.zeitreise-zukunft.de/erster-versuch/>). What exactly was answered and how suggestive the questions were is unclear. The experiments went much further than what I am describing here in this paper. But similarities to self hypnosis can be observed.

In this paper, we also do not travel in the way Stephen Hawking propagated (i.e. in 2010 in The Epoch Times). We do not look for parallel universes – our approach is different. Another aspect is very important: You can desire things, processes or events. You can imagine what they look like, how they feel and how they are designed. Often, our imagination comes true (is physically materialized), because we just do it.

According to the questions asked which are also posed by Foresight/Futures Research or in FTA in general (see e.g. Koschnick 2012), there is another aspect: Many people do not have much imagination, even when travelling into the future. They imagine the future to be as or at least similar to the present and past. Even if they want to conserve the present, because it is pleasant for them, then they have to take certain measures, because the world around these people is changing. Even for them anticipation and adaptation is a must.

Mental Time Travelling is a method of guiding participants into a picture or a whole series of pictures of the future. It is a movie rather than a static image, both - single images as well as

sequences or stories - are possible. The concept has been established and tested in practical cases but in different ways and with different “questions” or “scenarios” that guide the participants. In foresight processes, futures generation, for futures studies or future-oriented technology analysis in general, Mental Time Travelling is still a new method and only rarely used to open up the minds of participants for example at the beginning of workshops or interviews so that their thinking does not remain in the past and present. Time travelling can also be applied in different cases and at different stages of a foresight process (phases of Strategic Intelligence Gathering, Sense-Making or even Implementation, see EFFLA 2012 and 2013). In Mental Time Travelling participants are able to think disruptively, in new pictures or stories instead of just extrapolating from the past.

Mental time travelling puts the participants in the condition to “see”, even “feel” pictures of the future in the different stages of a foresight process, i.e. to identify details of the pictures in mind. For this purpose, guidelines, a specific kind of scenario and instructions for the facilitators of the specific sessions as well as a storyline that resembles the one in scenarios or questions have to be prepared. Some special effects (time machine, mirrors, bells, alarm clocks etc.) can be helpful to further open up people’s minds, to get better access to their intuition and unconsciousness and to motivate the participants of a foresight process to support the process further.

What are occasions for Mental Time Travelling?

- Whenever you want to imagine something personal that is lying ahead,
- For working in groups (workshops, panels), when you want to tune participants to future thinking,
- When you want to work exploratively and openly for the future,
- If you would like to imagine alternatives instead of a single picture,
- If you would like to start with long-term visions or goals in order to continue with planning later on. What you mean by “long-term” is up to you.
- If you, your company, your life and your environment are in a state of flux and you are still facing a lot of uncertainties...

How do you travel and how do you guide the participants during their trip into the future(s)?

As in real life, there are two possibilities to travel: alone or in a group (see figure 1). Therefore, there are two variations to guiding in case of

- You are alone and preparing your own Mental Time Travel.
- You are in a group and facilitating the time trip for other persons. This is a good opportunity to combine Mental Time Travelling with other methods of Foresight, to perform complete moderated workshops or to set participants into the mood of working with future(s).

<b>travelling alone/ thematic</b>	<b>travelling alone/ chronologically</b>
<b>Group travel/ thematic</b>	<b>Group travel/ chronologically</b>

Figure 1: Variations of travel circumstances

As in most Foresight processes, participation is necessary or workshops are performed, we focus on travelling in groups in this paper. In groups you can travel chronologically from now into the future (and back if you like) – or to a certain point in time and with a thematic background.

### **Moderating the Mental Time Travel for other people:**

#### Step 1: Organizational preparation

In this case you are preparing the group for Mental Time Travel. This means, you need a room with enough space, undisturbed and with comfortable seating facilities. You need an alarm clock or alternatively a normal watch and a bell. All participants need something to write.

#### Step 2: Content preparation

You have to prepare a kind of scenario that as in variation 1 is concerned with a timeline/ development or that asks for a date in the future (variation 2). Our example is a specific day in the future. For your topics or questions, you can be very creative but have to be careful not to be one-sided, and ask open questions in order not to lead your participants only into one direction but make them think individually and broad. It is therefore important to start with a scene where people have a kind of personal experience. I often use a mirror, in which people have to see themselves, but other scenes are possible.

The limited questions from your scenario can also be provocative. They must give the participants a time and a structure they imagine. At the end of the Mental Time Trip, the participants need some time to think on their own. The performance needs a bit of experience and has to be adapted to each working group. If you see that your participants are busy thinking, you should not rush them but let their brains work.

#### Step 3: Performance

You have to start with a warm welcome and an explanation that Mental Time Travelling is something special but that the participants should not be afraid of it – just try it. Nobody will be hypnotized and only what people accept will be done. You should also take care to switch off all devices because there are “real interferences” such as if a mobile phone rings and thus destroys your trip.

It is also wise to let all participants get up at least once to stretch or do some exercises. Then you let them find a comfortable position, ask them to close their eyes and breathe deeply three times to relax. Now you as the facilitator are guiding them through your scenario, here is one example:

- You are lying in your bed – asleep. It is warm and the weather is fine...

- (Alarm clock noise): Good morning, this is your avatar. It is Friday, Feb. 3, 2034, you want to get up at 7 o'clock.
- ...After some time, you get up and go to the bathroom. What does it look like?
- You have a look in the mirror. wrinkles here and there. What is the color of your hair – no color? Or no hair at all?
- Who is living with you? Are you alone? Again?
- You get dressed – what do your clothes look like?
- What do you have for breakfast? Coffee? Tea? Something new in violet? What do you eat? Something healthy of course, now as we have the duty to maintain our bodies or the insurance is able to stop payments.
- You are going to work. How? Bike? Qualdimobile? Schraddellectro? What? A car?
- Where do you work? You are thinking of retiring? How old are you? Well, until 75 you should be fit...
- ... (here you include questions from your scenario, e.g. about the health system, the workplaces, family life or whatever)
- How do you spend your evenings? Your read – what? Books? ...
- It is late, you feel quite well, breathe deeply. It has been a long day. You fall asleep and dream. In your dream you go once more through the whole day.

Here a long break is needed until the first participants start to recover (or wake up).

#### Step 4: End of the Mental Time Travel

The alarm clock is ringing:

*“Good morning ladies and gentlemen.*

*It is Friday, November 28<sup>th</sup>, 2014, and you are participating at the workshop of the FTA Seminar in Brussels. You can open your eyes!”*

#### Step 5: Documentation of the Mental Time Travel

For the documentation, you first ask all participants to take their personal notes. If you want to go on working with the more general pictures and results, you can distribute cards or ask to write into a prepared file of a platform via a computer. You need at least another 10 minutes for notes. If you see that after this time, many are still writing you can extend the time.

### **Six Foresight Cases – Application of Mental Time Travel in different contexts**

You can use the cards that are produced. If you prefer to use computers for this, it is also possible but changing the medium has to be taken into account.

Meanwhile, there are a lot of experiences in applying Mental Time Travel in real foresight processes. The way they are described above was developed in private contexts with friends, but the first broad application were the workshops during the **Future Radar 2030** of the Future

Initiative of Rhineland-Palatinate, one of the Federal States in Germany. Here, Mental Time Trips were used as mind-openers when the first workshops (Future Team sessions) started. There were different ways of performing Mental Time Travelling according to the different facilitators: Some were as described above and were focussed on a day in the future. Others were flying over the country in 2030 having a look at specific places. The results were written on cards, used in further discussions, grouped and later on, scenarios were derived from the preliminary pictures. A description of the project can be found in Cuhls, Kolz and Hadnagy 2012. When the project itself ended, additional forward-looking activities were performed in some regions and villages. In some of them, Mental Time Travelling (in this case, they started with a time machine) was also applied as a kind of entrance point to the future.

The method was refined and in 2006, with an experimental design, used in a European context. The project **EPIS** (European Perspectives on the Information Society) was designed to have an outlook on different developments in and for the Information Society. One of the methods applied was a Delphi survey (for the methodology see Friedewald, von Oertzen and Cuhls 2007). In order to start the preparation of Delphi topics, a workshop with experts from information sciences and with an overview on communication developments was conducted in Brussels. Here, moderated Mental Time Travel was used for a first trip into the new world of future media and applications of communication facilities. The pictures and ideas were noted on cards, which were further used to group the topics in a mind map and later on even to formulate some Delphi statements.

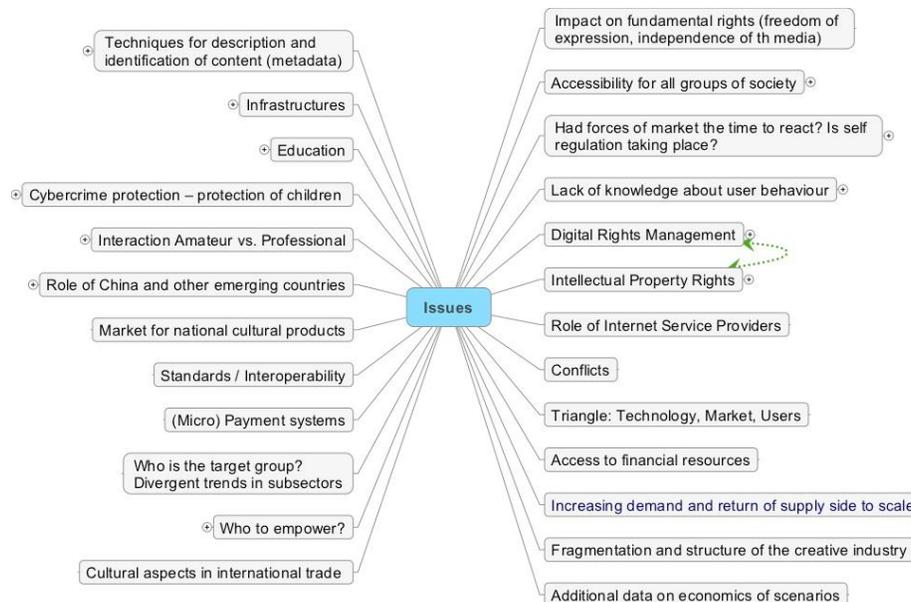


Figure 2: Issue structuring after a Mental Time Travel in EPIS 2006

This was a new experience for the time travellers, most of them were inspired, but some participants expected more in-depth information to come directly from the exercise. The lesson learned here is that clear expectation management is necessary not to evoke too many expectations.

The third project to be reported here was called **FAZIT** (Forschungsprojekt für aktuelle und zukunftsorientierte Informations- und Medientechnologien, a research project on recent and future-oriented ICT) carried out by Fraunhofer ISI and two partners, commissioned by the State Ministry of the Federal State Baden-Wuerttemberg in Germany.

The project made use of different methods. The focus was on market studies and three Delphi surveys, later on scenarios and a roadmap for Baden-Wuerttemberg were formulated. In order to prepare the Delphi topics and statements in the second Delphi survey, which was aimed at analyzing future developments of ICT in the health sector (for details see Cuhls, Kimpeler and von Oertzen 2007), the first workshop started with Mental Time Travel. In this case, experts from technical research institutes, a university, industry and even a German health association were gathered in a workshop and went through the future of the health sector and their field of work in the year 2020. The findings were noted personally and on large cards for further use.

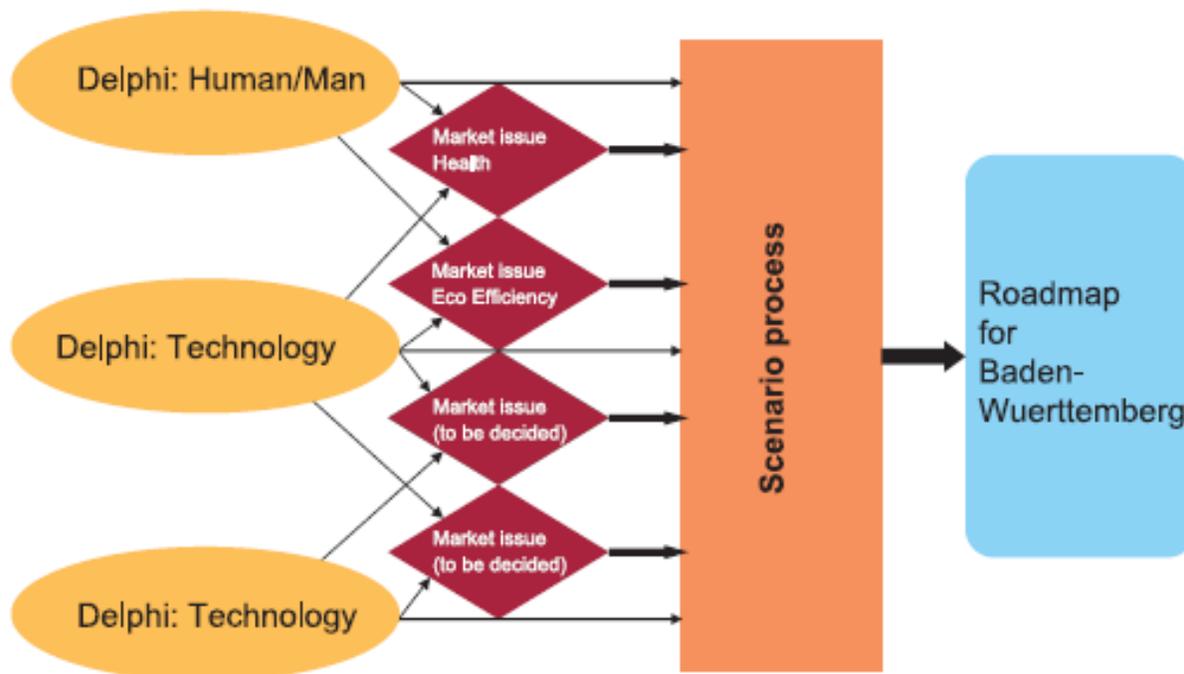


Figure 3: Modules of the FAZIT project

Mindmaps and cluster maps were used to structure the topics together with the cards during the workshop. In a second step, it was tried to fine-tune first topics to Delphi statements. Whereas the first open and creative part turned out to be very fruitful and the experts seemed to “have fun” by bringing in their experiences and examples with really visionary approaches (e.g. a speech controlled surgery robot and its behaviour), the fine-tuning and back to the reality formulations were then rather difficult. Nevertheless, after some additional internal workshops and formulation rounds, the statements were ready for the survey.

The **fourth case** is different: At the Fraunhofer ISI, there are sometimes days when pupils from different schools in the Karlsruhe region are invited to gain experience of research or learn about the institute (called “Schnuppertage”, now Talent School). They are performed in order to raise interest in the topics of the institute. On November 25, 2009, two classes (9<sup>th</sup> class, students aged 15 to 17) were invited to a participation activity. One of the activities was Mental Time Travel. During the 20 minute trip to the year 2029, they experienced one normal working day.

After taking their personal notes, the pupils were offered four topics in the four corners of the room:

- Impacts of Climate Change
- Demographic Change
- Living and Working
- Circumstances of their Lives

The participants were able to choose their topic and then describe it with the help of clustering their cards. The second step was to fill in gaps, defined as important topics for their own futures. This led to lively discussions about the general future of the earth as well as their personal futures, and how interventions were possible.

Working with teenagers is always a special challenge, here the start was difficult. It was almost impossible to have silence in the room as was switching off the mobile phone (“I do not know how, I never switch it off”). But once they started to imagine and the first pictures came to their minds, they successfully thought about their specific future day and also the discussions about the topics were more directed than expected.

**The fifth case** to report was rather a failure: this was an internal workshop at the Fraunhofer ISI. In a working group, some new methods for foresight were to be tested internally. Mental Time Travel was not the starting point but an open discussion about future topics in research that could be relevant for the Fraunhofer ISI. The method resembled a kind of World Café and was called “Tapetenwechsel” (change of scenery), a German saying when you travel or go to another place).

Participants were researchers from the institute, with different backgrounds and of different age groups. After a certain time of discussion in front of a piece of “wallpaper” fixed at a wall in the room and leaving sticking cards with upcoming research fields on the wallpaper in one corner of the room, the group changed to another corner and different colour wallpaper. One person stayed. The same changes took place three times.

After a break, in order to find additional issues, Mental Time Travel was performed – looking 10 years into the future and focussing on future research as well as the future Fraunhofer ISI. Cards were written and the new topics added to the different “wallpapers”.

In this case, it was very difficult for the researchers to switch back to the open pictures because they had already discussed a lot in detail and clustered their topics. Another problem was that the experts were researchers who had already fixed ideas for their research in mind. Thus they had problems to imagine something different and their views remained the same. Some of them were people who use creativity methods themselves – and for them it was very difficult to be on the other side, the non-moderating or being the participant side. In the end, there were about ten proposals for new research topics which were supposed to be worked out later on, which means that the result was good.

The most interesting case was also the most risky one: The **BMBF Foresight Process** (from 2007 to 2009, later on called “cycle I”), BMBF is the German Federal Ministry for Research and Education. The starting point for this foresight process was the 17 thematic fields of the German High-tech Strategy and ongoing foresight activities in the departments, i.e. the BMBF’s portfolio. By mid-2009, a set of advanced methods of futures research had been developed to identify new research and technology focuses in 14 selected **established future fields**. This resulted in the so-called **future topics**.

The future topics were analyzed in several steps, discussed with national and international experts, then evaluated and sorted (see figure 4). In the course of this evaluation, the extent to which the research prospects and structure of the future topics are stable or still in flux was asked about. The topics were then selected, after being measured against the questions formulated at the outset and additional seven very interdisciplinary future fields were formulated. The results are documented in Cuhls, Ganz and Warnke 2010 a, b, c.

## Topic searches

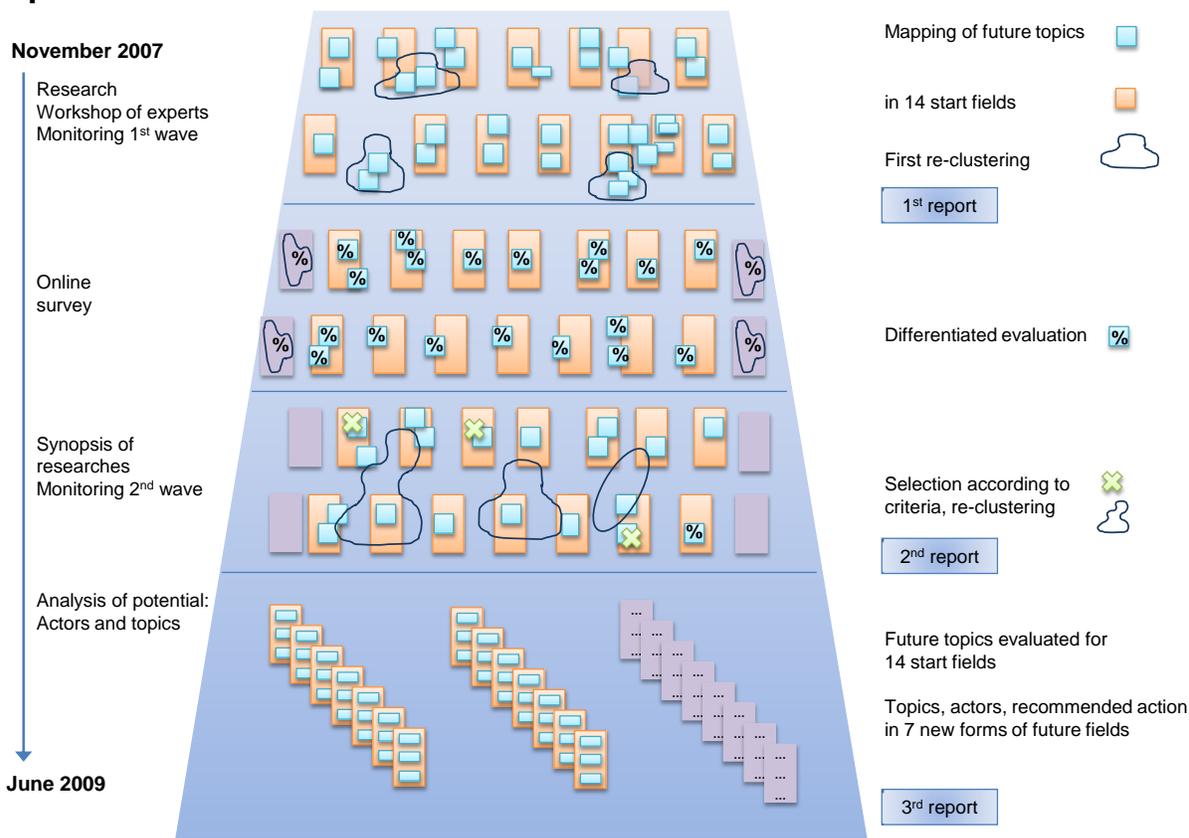


Figure 4: Methods of the BMBF Foresight Process 2007 to 2009

The first participation by external persons took place at a workshop in November 2007 in Berlin. Originally planned for 40 people, the news about a foresight process spread, and in reality, we had 116 participants plus organisers and facilitators for the break-out groups. The rooms that were booked were too small (even the plenary only for 100 persons) so that we had to perform our Mental Time Travel in a rather cosy atmosphere. The invited experts were high ranking scientists who had an overview of their respective fields, generalists from industry or research organisations, some persons from the Federal Ministry of Research and Education and strategic planners from associations and research organisations, some consultants as well as some “generalists” from different NGOs.

It was really quiet in the room. 99% of the participants had their eyes closed, fully concentrated and followed a Mental Time Travel trip into science, technology and daily research of the year 2022. Two persons did not close their eyes: they were writing and writing and writing. They both told us that they feared to lose their ideas and that they had so many ideas that they decided to take notes permanently. But they were quiet and did not disturb the trip.

As we had not dared to bother these high ranking people with PostIts and Cards to write down their ideas, we just asked them to take their personal notes – and to take them home for their own memory. We were sure that they were now open enough for the next workshop parts and they would bring in their images. The following work in smaller technology field groups structured their field according to future areas and detailed science, technology and research approaches of the future (10-15 years ahead and beyond).

Interestingly, we were asked later on, why we had not used the time travel images much more explicitly. This has shown us that even in such expert groups, it is possible to travel in time. Many of the experts hinted at their travel (“you have brought me to a place which is a factory of the future, but in fact it is designed completely differently. The processes are...”).

Our lesson learned here was that hierarchy, rank or status are no reason to prevent us from travelling in our minds. On the contrary, we learned that we need much more courage in applying new creative methods even in such environments.

## **Conclusions**

There are a lot of possibilities to use Mental Time Travelling in Foresight processes. The integration into the flow of the methodology and a documentation of results of Mental Time Travelling as well as the transfer to the next step of the process are essential.

Most Mental Time Travel is just used to stimulate thinking about the future, but there are no limits in combining time travelling with different methods. A lot of empirical work is still needed to test different processes and situations, to gain more experience, to open up more minds to futures thinking and to think of more and different scenarios for the travel. It seems to be promising to let the participants draw pictures or make collages in order to visualize what they have seen and what the diversity of the pictures can be.

One has to take into consideration who the participants are. Although we had very good experiences with managers and high-ranking decision-makers taking part in time travel it is difficult to imagine that these people take part in art design. Whenever they had lost their inhibitions and the group members had built up some trust among each other, even that was possible.

Advantages of Mental Time Travelling are definitely that the travellers open up their minds and see or even feel situations or things of the future and fill in some gaps in explorative work. This new knowledge and upcoming new ideas can be documented, taken into account for next steps of a foresight process and directly transferred to the next step. If a Mental Time Travel is useful depends on the case: participants, topics, objectives and purposes have to be considered carefully. It makes special use of individuals so that their knowledge is really built upon but the work remains in a group.

Mental Time Travelling needs a bit of preparation but resources and material needed are limited – without documentation cards you only need a quiet place and space for the participants. You can also repeat your time travel as often as you like - moderated or individually alone. Mental Time Travelling can be combined with any kind of workshops, scenarios, preparation of Delphi

or survey topics and even for explorative roadmaps. Text or pictures as outcome are both possible. Everybody is able to travel in mind with learning effects for their own futures, some participants just have fun or are content that they can carry something home – their personal notes.

Time Travelling under time pressure does not work because everybody needs some time to unfold pictures. Sometimes there are very tired people in the group who fall asleep – just let them sleep, they might need it.

Disadvantages are that a bit of experience and tacit knowledge is needed. Although the scenarios (for the questions asked during travelling) are rather simple to prepare, to set the participants in the mood of following you and really imaging needs practice. Resistance, and therefore disturbances (“turbulences”) occur when very one-sided thinkers, pessimists, or experienced scientists are in the group, sometimes they are not willing to imagine. Some other people are not able to open up, they might disturb the mood of others, a situation unknown in advance, which means the facilitator never knows what can be expected.

In the cases known, Mental Time Travelling turned out to be practical and not esoteric. We now need more experience and real applications in travelling ahead in time and are continuing to experiment.

千里の行も足下から始まる。

Even a trip of 1000 miles starts with one step. (Asian Saying)

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