More play, more planet

How play adapts behavior and helps solve the climate crisis

zerow

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Humankind has a collective superpower

We all know it, we are facing a climate crisis. And human behavior is hindering us from getting out of the crisis. The many priorities and distractions we have make it difficult for us to truly act.

So what happens if we change our human behavior?

Collectively humans are powerful. Take a look at the recent corona pandemic. It was disrupting the way we lived. To get back to the status quo we worked on all levels as a collective, and were able to get the virus under control.

The corona pandemic was a difficult, painful, but clearly visible problem. The climate change crisis is less clear. It is physically close, but psychologically far away. We are experiencing the effects in nature, with the fires and floods literally at our doorstep. But our minds focus on the many other things we care about and enjoy. And it costs us a lot less effort. This is human nature.

But if we can change, and collectively adapt our behavior, humans can collectively reduce meat consumption, stop using fossil fuels, waste less, and use circular materials. This alone can give our children a future with enough food, water, medicine and natural resources without the need for conflicts caused by climate-related shortages and threats.

But how to get ourselves to adapt our behavior? Here's an unconventional but powerful idea you may not have thought about.

Let's have fun in making meaningful change

We need some fun while making a difference. And not for the selfish reasons that play is fun, but because we know play is a powerful mechanism to adapt behavior.

If you take a look at how we develop ourselves, it's through play. Think about the times you (or your children) learned to walk, talk, fight, play soccer, read, and so on. Most of us learned it through certain concepts of play. Remember the good feeling when you got a high grade at school (goal achievement), or the big warm hug (reward) you received from your mother when you took your first steps.

Also in adult work life it's there - e.g. in competitions to become the best salesperson of the year, winning an engineering contest, or simply the good feeling when you puzzled a lot with your Excel formulas and tables and finally got them to work. You performed better because a form of play was involved. Play is a universal development mechanism. It helps us grow and adapt to our environment.

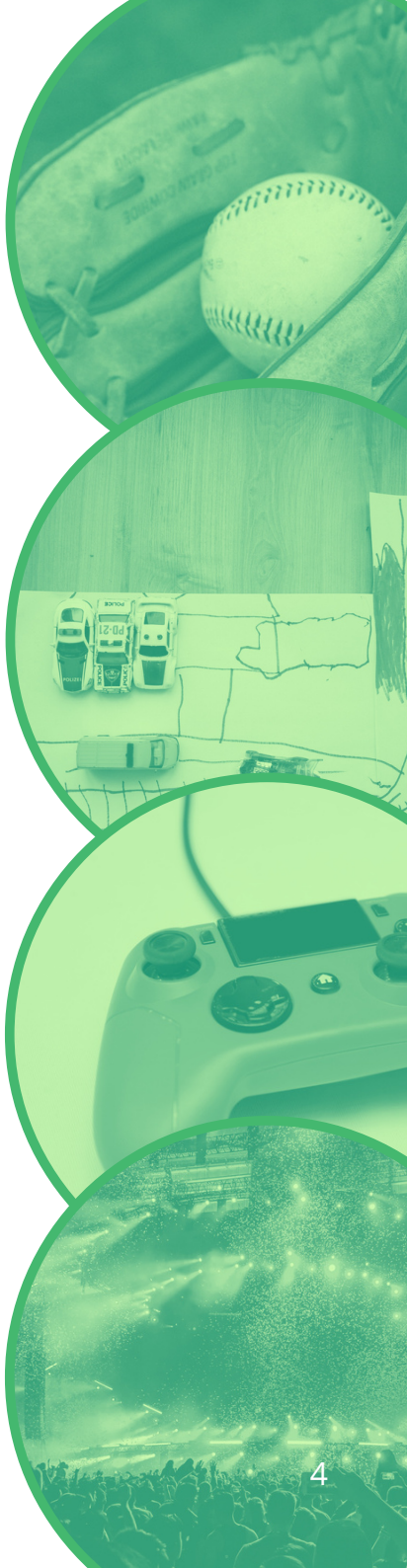
For a deeper understanding, see this **TED Talk by Stuart Brown.**

Here are two examples of playful activities that make people behave differently in a non-sustainability context:

- **Pokemon Go** makes people (both children and adults) walk more than without the game. According to a study (**Khamzina 2019**), this was an increase of 1.446 steps per day.
- Michelin, a car tyre company came up with the Michelin star restaurant guide, which was a gamified concept that made people drive across the country to experience the best cuisine. People used up their tyres quicker, resulting in higher sales for Michelin. See **this video** to learn more about the background.

Seeing the concept of play as a development mechanism, we can leverage it to benefit the planet. If business and government organizations would start to design more playful activities, we could trigger mass behavioral adaptation and help solve the climate crisis. But to know how to leverage play here, we need to first better understand how play adapts behavior.

> *"Play is a powerful mechanism to adapt behavior."*



3 factors how play influences behavior

Playful interventions trigger humans to adapt and make better choices for our environment. We become more motivated and more able to act.

To design playful interventions, let's dive deeper to understand how play influences behavior. This is based on a **theory from behavioral scientist BJ Fogg**. For each of these three factors, we explain how a playful intervention affects us.

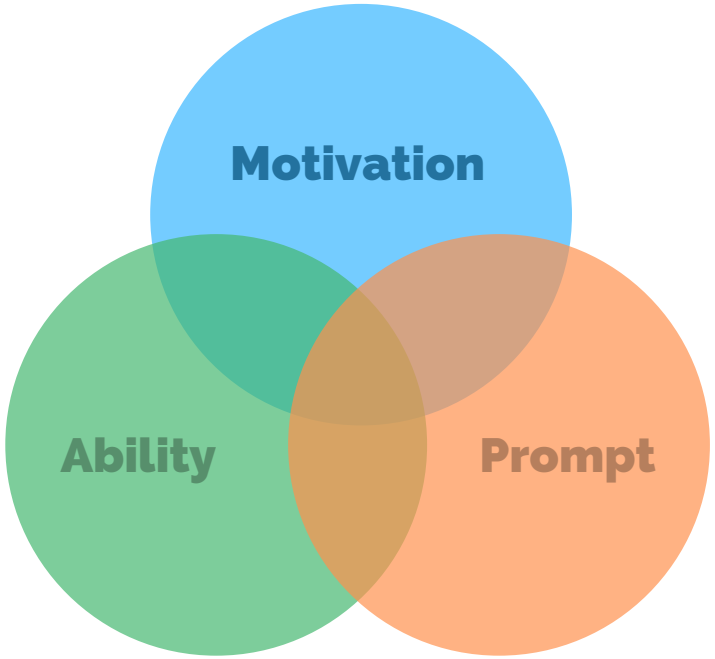


Illustration is based on theory of BJ Fogg (see bjfogg.com)

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What is a playful intervention?

A playful intervention is an activity where playful elements are involved with the objective to improve the current situation. It could be a soccer game, an app where you can collect items or points, a mobile game, wrestling in the park with your friend, or even a wedding reception.

1 Motivation

How motivation works

We are motivated to act because either (1) we ourselves want to do something (intrinsic) or (2) something else pushes us to do something (extrinsic). Extrinsic motivators are of material value, like discounts, free gifts, trophies, salary increases, taxes, etc. They have a powerful but relatively short-term effect.
To have a powerful long-term effect, we need to raise intrinsic motivation, a motivator that comes from inside of you. BJ Fogg describes motivation falls in these three core areas: pleasure versus pain (sensation), hope versus fear (anticipation), and social acceptance versus rejection (belonging).

Let's review all three areas.

3 motivational areas

We seek pleasure and avoid pain

Example: I like eating meat. It tastes good and gives me pleasure. But if we get taxes on meat, I will enjoy meat less and will have a financial form of pain. Moreover, when I watch the **Cowspiracy documentary**, I get an increased awareness on the topic. On top of the financial pain, I feel (moral) pain because I see how much damage meat consumption has on animals, deforestation, land depletion and emissions. I now have more pain than pleasure from eating meat, so I stop my meat consumption.

Taxes are an unpopular and disrupting instrument to use. We could wait a long time for meat taxes to happen worldwide. And only a small portion of society is watching climate-related documentaries, so for real change we need a wider reach.

We seek hope and avoid fear

Fear and hope are opposites. Where fear is negative and closed, hope is positive and open. Both are equally powerful motivators in climate change communications (**Ettinger 2021**). Sadly, the most climate-related media messages raise fear in us. Receiving these messages make you feel depressed, powerless and uncomfortable. Result: we stop consuming that type of content and nothing happens.

We seek social acceptance and avoid rejection

To be loved by someone (e.g. your mother, boss or friend) we behave according to their set of norms & values. In organized groups (e.g. sorority club, company, football club, activist group), you pay fees or do specific tasks to stay part of the group. But these efforts are all worth it when you are socially accepted and feeling a sense of belonging.
We don't like to feel socially rejected and left out. So we jump through all kinds of hoops to belong to certain groups.

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Psychological distance - a hidden and damaging barrier to change

In the area of climate-related natural disasters, psychological distance - i.e. feeling that you are part of something - is another strong factor of motivation. Sometimes issues are too far away for us. When a flood kills many people on the other side of the world, I feel less emotionally involved than when somebody in my village drowned in a nearby lake. I can relate better to people around and feel more connected.

This is a big issue, since climate-harming contributions mostly come from the areas where we experience the climate crisis less.

In Northern Europe and the US, we still emit a lot more CO2 and waste more than in Africa and Asia (excluding China). But the climate effects (of droughts, floods, fires, rising sea levels, natural resource conflicts, etc.) have the biggest consequences in Africa and Asia.

Therefore, reducing psychological distance and becoming more emotionally involved is crucial to getting the general public to take action on climate change. Certain forms of play concepts (e.g. immersive interactive stories using VR technology) can make a difference here.

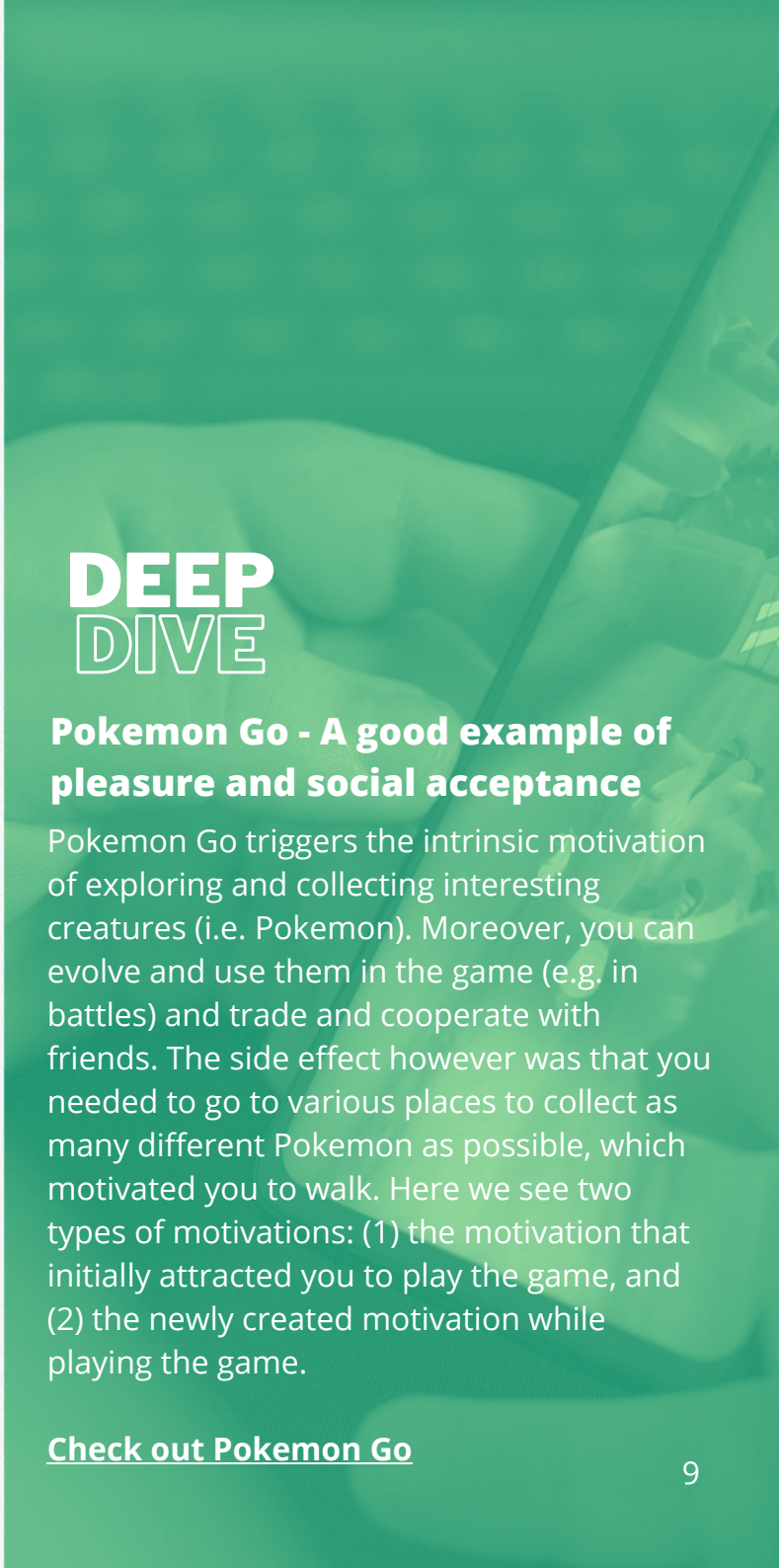
How playful activities raise Motivation

A playful activity is fun. The whole play design triggers your intrinsic motivation - whether it's the story, mechanics, visual design, goal, or all of these combined. What motivates you depends on the type of person you are. It could be to dominate & compete to be the best, explore & discover new things, collect items or achievements, tackle intelligent puzzles, build something beautiful together, etc etc. Good play architects (including game designers) know the target group's intrinsic motivations, and design a playful activity that attracts you and makes you spend time on it.

In addition, playful activities are positive and open minded. You can try things within a safe environment. There is no negativity or fear. If you mess up it's OK. You just start again. And well-balanced playful activities ensure the activity is not too difficult in the start, but become more difficult when your skills increase, to make sure you keep a high motivation. This is the opposite of the much-needed, but negative and depressing climate-related messages we see in the news. We eventually become numb and stop consuming that content.

Let's go back to the meat consumption example I mentioned earlier. Because of higher taxes and watching the Cowspiracy documentary, my pain was higher than my pleasure of consuming meat, so I stopped. A playful activity could achieve the same result by putting a positive and fun spin to it, and through the play process providing me with knowledge and useful tools & tips to consume plant-based food.

And since we know social acceptance is a strong motivator, we can add a social element to the playful activity. What if virtually cooking and puzzling with your plant-based meals also gives you certain social status points. You don't want to be left behind, so you may feel motivated to put in a bit of extra effort.



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Pokemon Go - A good example of pleasure and social acceptance

Pokemon Go triggers the intrinsic motivation of exploring and collecting interesting creatures (i.e. Pokemon). Moreover, you can evolve and use them in the game (e.g. in battles) and trade and cooperate with friends. The side effect however was that you needed to go to various places to collect as many different Pokemon as possible, which motivated you to walk. Here we see two types of motivations: (1) the motivation that initially attracted you to play the game, and (2) the newly created motivation while playing the game.

Check out Pokemon Go

2

Ability

How Ability works

Imagine we are fully motivated to act. Then we still have four ability-related barriers standing in the way of adapting behavior. Feeling the lack of Ability, it has a direct impact on our Motivation to act. We gave up before we even tried. A normal human response.

Awareness

Do we know about climate change-related issues? Most of us know that moving from fossil fuel to renewable energies reduces CO2 emissions. But less people are aware about the issues & consequences of biodiversity loss.

Understanding

Do we understand the causes, consequences, and solutions? Scientific articles can sometimes be difficult to read, especially when we have limited knowledge on the subject. There are definitely some good blogs and videos about it, but that takes a lot of motivation to read.

Skills

Do we have the skills to respond? We may not be trained nor have the physical skills to act.

Resources

Do we have the time, physical & mental capabilities, and financial resources available:

- time (e.g. besides your day job, hobbies, children)
- physical capabilities (e.g. cycling to work)
- cognitive load (e.g. finding plant-based foods)
- finances (e.g. installing solar panels).

How playful activities raise Ability

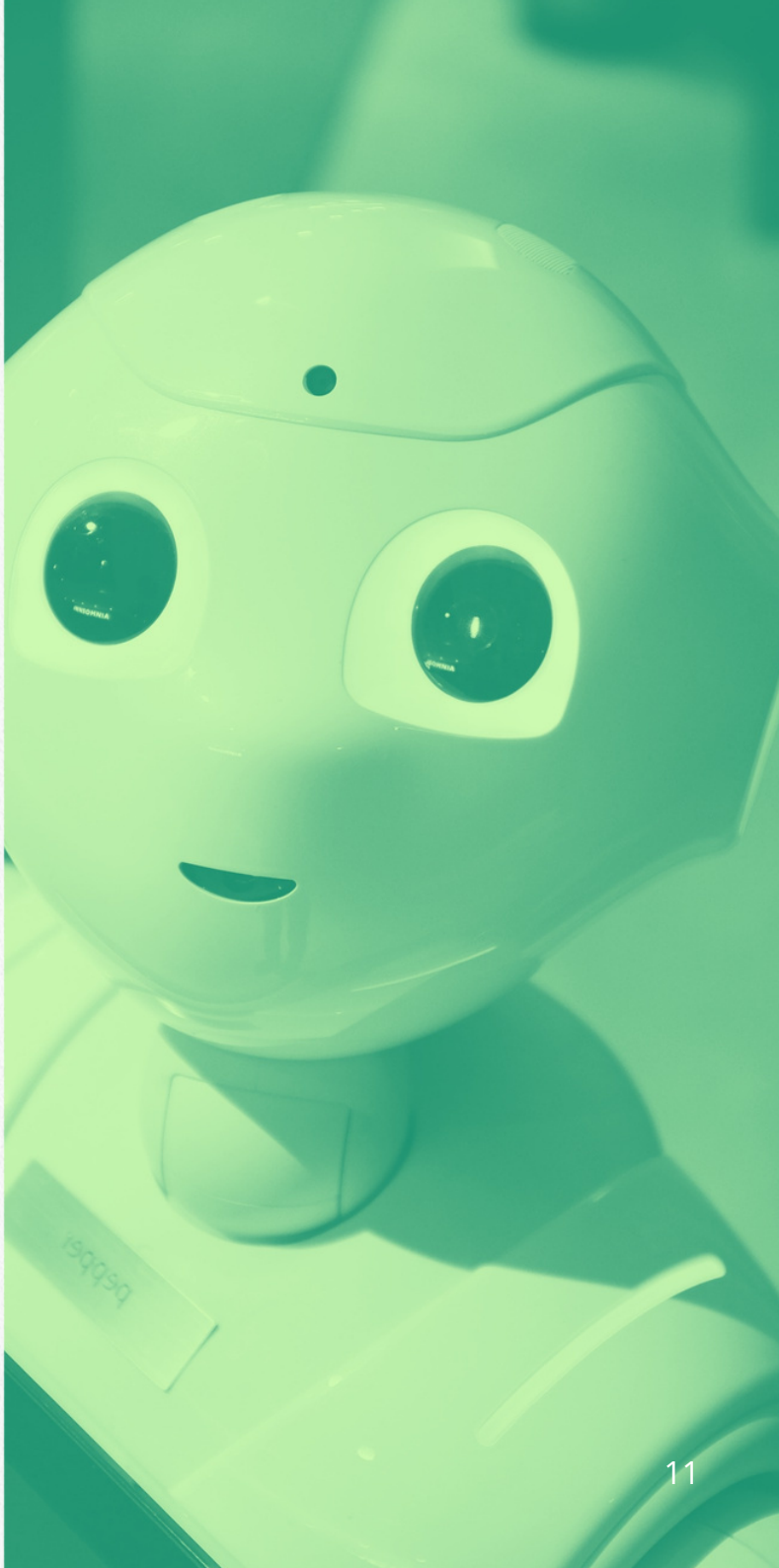
A playful activity is an active process. Watching a movie is a passive activity, where you don't need to (inter)act to influence the result of the movie. A playful activity requires you to act. Your action creates a reaction. And your actions influence the end result. This active mental state enables you to willingly (1) absorb new knowledge, (2) develop physical or cognitive skills and (3) learn how to best use or attract available resources.

Through the playful activity, a normally tedious, negative and paternalistic message becomes a fun and positive exercise. You stay exposed to the activity and return to it long and frequently enough so that you can absorb and maintain all relevant knowledge and skills. When this is achieved, the barrier to adapt to the new behavior drops, and opens up the path to act.

Chess is a great example of how it can improve human abilities. Various studies show it improves IQ (**Ferguson 1995** and **Joseph 2019**), helps to prevent Alzheimer's disease (**Crespo 2019**), makes you more creative, improves memory, and various other skills (**read this blog for more**).

A more climate-related example is PeppeRecycle. In this study (**Castellano 2021**), researchers used a social robot to play a game with a child, in which they both had to compete on how to best recycle waste materials. The experiment with these 51 primary school students showed promising results where the attitude towards recycling positively changed. The social robot and the use of real waste objects (instead of digital on-screen alternatives) increased the children's engagement, which is the Motivation part of the Behavior formula.

Because of the high engagement, the children were able to focus on the "memorization task" during the game. The result: they increased their memorization skills on how to best split the waste, reducing residual waste and increasing the recycling quality.



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The power of (multiplayer) games in solving complex problems

The climate crisis is very complex, with all its environmental, behavioral, political and economical factors. In many cases, there's no simple solution. Fortunately many humans are great at creative problem solving.
Games (or other forms of play) can boost this ability further. Especially simulation games, like SimCity or Minecraft can be used for creative problem solving. These games have so many variables and open possibilities people can experiment with to reach a certain outcome. Researchers found that participants who performed an open-ended task in Minecraft performed higher in a creativity assessment (CAT) than participants that did not do the open-ended task (**Lane 2022**). Read **this blog** to learn how other games build problem-solving skills.
But this is not where the power of play stops. Technology allows us to communicate and cooperate on a massive scale. Multiplayer games give up the opportunity to solve complex problems collectively. Researchers are currently investigating whether Minecraft can be used to let middle school students solve complex real-life problems using their collective creative thinking skills (**University of Illinois**).

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How children gain a deeper understanding of energy transition challenges

In 2021 we made a game that enables children to get a deeper understanding of the energy transition in a playful way.
During the target group research, we learned that teenagers are somewhat aware of the energy transition, but don't find it interesting enough to learn more about it.

Our design goal was to develop a play concept that allowed players to freely experiment and have fun with energy transition. Important was to do this in a non-paternalistic and visually entertaining manner.

Through the play process, you learn what certain objects really do (e.g. how much electricity a wind turbine produces or what it means to turn down the heating a degree). Equally important, you learn to grasp the challenge of energy providers, how to balance energy supply and demand, and reduce CO2 levels while also keeping a stable energy supply.

In just 10 minutes, you learn about a relatively complex topic that would normally (e.g. reading a book or listening to the teacher) be more boring, difficult or take a long time to understand.

Moreover, your mind needs to be actively engaged with the game to influence the game result, which makes you understand and memorize the content better.

And by leaving a few tangible ideas with them that are close to them in their daily lives, children also feel more aware of what their own actions can mean in real-life (turning off the lights, installing solar panels, etc.).

Learn more about the energy transition game.

3 Prompt

How Prompt works

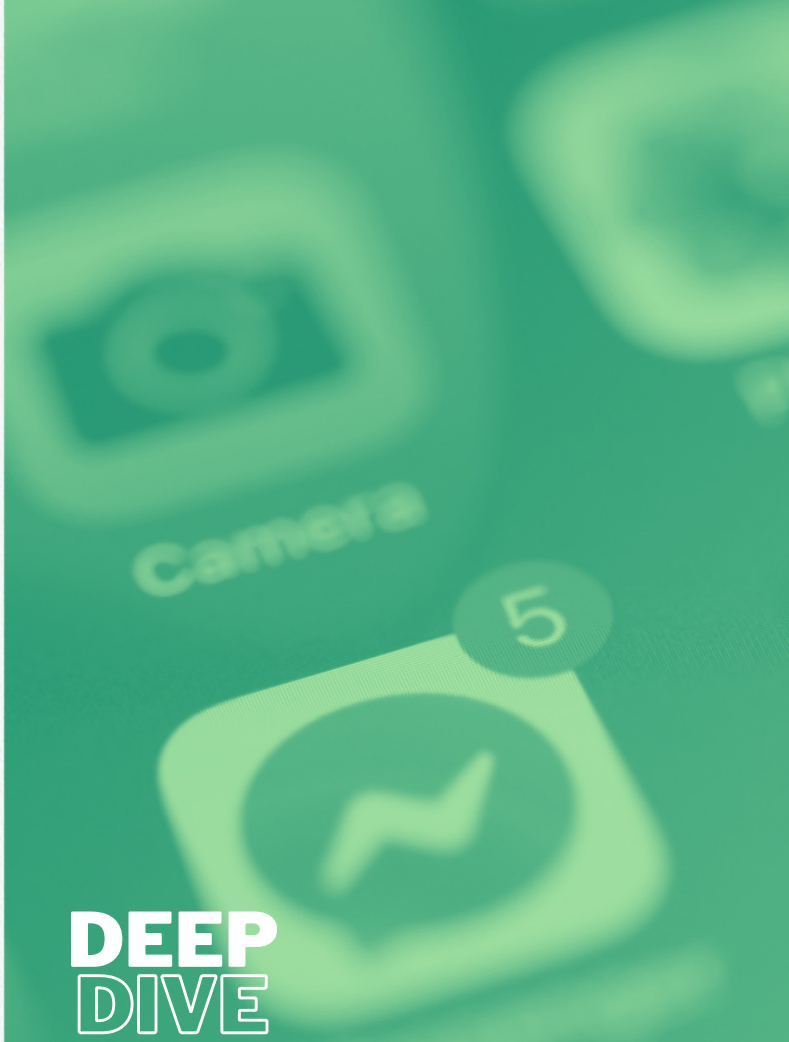
Finally, we need a trigger pushing you to take a specific action. It could be an event or a person giving you that final nudge. And preferably, these triggers are recurring. Humans are inclined to return to our default behavior (being the path of least resistance), so a recurring trigger can help train that newly gained behavior.

How playful activities raise Prompt

By definition an activity triggers you to act. But it's important to introduce the act at the right time in the process. When you introduce it too early, you may not have enough ability or motivation yet, and no change will happen. Introduce it too late, you become bored with the activity and will have missed the trigger.

Mobile games are powerful instruments of play, since the phone sensors have the ability to measure your actions and can send recurring push notifications to keep people doing the intended behavior. Having said that, mobile (or digital) games are not always the solution. It always depends on the user and the given situation.

After being exposed to the new behavior frequently, it will become our new default behavior.



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Adapting behavior takes time

A person needs to be spending a minimum time period on an activity to perceive a certain change in habits (**Lally 2010**). A one-time brief activity is not enough to realize the behavioral change. It needs recurring active engagement.

How to start using play?

This paper explains how a well-designed playful activity raises motivation, builds abilities and prompts people to think and act better for our climate than what they did before. Understanding this powerful concept is the basis for behavioral adaptation.

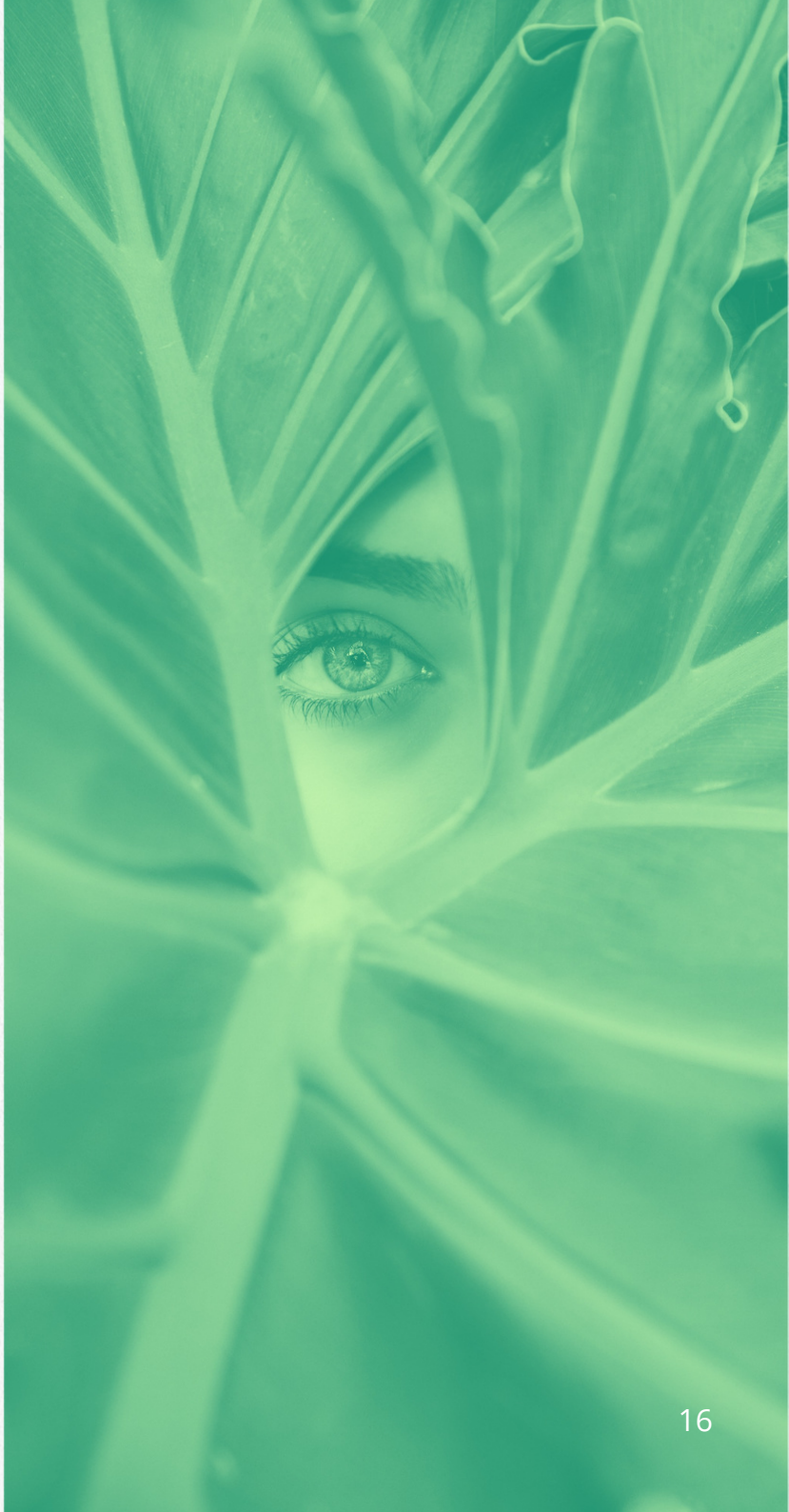
So how to move forward? We need to design playful systems people can play with and through the play process adapt their behavior. To design a good playful activity that adapts behavior, we need to understand a little more than the behavioral basics. It would be good to involve industry, behavioral and game design experts in this stage.

But to not let you leave empty handed, let's briefly review three points to get started.

1

Specify the behavior to address and research the target group behavior

To ensure you successfully adapt the right behavior, it's important to first understand what specific behavior you are intending to adapt. It is equally important to understand how the initial behavior was created, how to get to the desired behavior, and what psychological profile (e.g. motivations, lifestyle, media consumption, etc.) is behind this.
Simply said, you need to know the type of person you are focusing on, understand their behavior in the specific context, and find out what triggers you can use to adapt their behavior.



2 Design the right play concept

In our view, a playful activity is a closed system with its own goals, rules and conflicts. You willingly choose to play with it, and in its core it is enjoyable. A well designed play concept uses the target group's current intrinsic motivations to attract and retain them in the play process.

Finally, the design has a certain balance of the following "play elements" fitting the target group: exploration, surprise, excitement, challenge, competition, cooperation, problem solving, manipulation and audiovisual appeal. Obviously you see these elements in many mobile and console games, but these play elements are not isolated to games only. Many designers in marketing, events, R&D, architecture and so on, use these elements - consciously or unconsciously - to design the right concept people like.

3

Try integrating the play concept in an existing primary process/activity

People have a lot of activities they can choose from. The competition for people's time is very high. The amount of advertising spending on the mobile app marketplace is enormous, just to get that little bit of extra time for you to use the app. Unless you have a lot of money available to burn, it's best to integrate the playful activity with an existing and related activity.

For example, consider a playful activity that triggers people to make their gardens more biodiverse and better protected against excess water. Having the activity in a garden center where you can purchase the right items to achieve more biodiversity makes most sense, since this is where your mind is focused anyway.

So it does not only have a financial advantage, but also lowers the barrier to behavioral adaptation since you are in the right mindset and have the easy possibility to take action.

Let's have fun while making a difference

To survive as humans, we need to act now. But let’s have fun while doing it. And not for the selfish reasons that play is fun, but because we know play is a powerful mechanism to behavioral adaptation.

That’s it. So please consider in whatever activity you set up, how a playful design can trigger your employees, customers, friends and families to act. It will change our lives today, and our lives in the future. Let's become game changers.

Interested to see how play could help in your climate change challenge? Send us an email at contact@zerow.io. We may be able to help.

About the author

Antoin Linssen

Antoin is zerow's Managing Director. He also leads commercial and project-related activities.

After a career in creating music for video games, Antoin spent 15 years in developing marketing concepts, campaigns, events, business models and value propositions for large technology-focused companies. In all his work, understanding human behavior and building the appropriate concept was a core element.

When Antoin is not working, he enjoys running, playing the piano, being outdoors and playing games with his family.

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