TOOLBOX

# The Co-Constructing Stories method

In the early phases of the design process, designers would like to be informed about whether the concepts they are generating will be regarded useful by the intended user group. One way to get that information is to explore early design concepts with users, as they are the domain experts. However, early design concepts are not yet concrete proposals and exploration of these concepts with users needs facilitation.

**D. Ozcelik Buskermolen, MSc and dr. J.M.B. Terken**

*Information about the authors*
Derya Ozcelik Buskermolen is a PhD candidate at the Industrial Design department of Eindhoven University of Technology. Her research focuses on design research methods for eliciting, early, informative and inspiring feedback from end-users.
Jacques Terken is an Associate Professor at the Industrial Design department of Eindhoven University of Technology. His research focuses on the user experience and on design methods for the user experience, with a special focus on Automotive.

*Address of correspondence*
Derya Ozcelik Buskermolen
Eindhoven University of Technology
Den Dolech 2
5612 AZ Eindhoven
+31 (0)40 247 52 28
d.ozcelik@tue.nl

The Co-Constructing Stories (CCS) method aims to facilitate the exploration of early design concepts with users, and assist the designer(s) in the decision on (1) whether they are working on the 'right' design concepts, and (2) how they should develop these concepts further. Through the method, the designer has a conversation with an end-user lasting about 45 minutes to an hour. During the conversation, the user is first encouraged to talk about his/her past experiences concerning a particular context or activity. These past experiences serve as a basis for discussing the new concept and the user is invited to imagine future experiences mediated by the concept. Through this dialogue, feedback about whether or not the concept is considered valuable is collected in an indirect way.

## Motivation

When designing, designers do not only create products or services, but also stories explaining why these products or services are likely to be useful and valuable for people. The Co-Constructing Stories method is intended to collect information from users, enabling the designer to enrich the story and make it more convincing and credible. The development of the method was motivated by two observations. First, our previous research pointed out that in the early phases of the design process, designers prefer feedback that is contextualized and grounded in concrete real-life situations. The real-life stories of users are considered valuable, by virtue of being trustworthy, informative and inspiring (Ozcelik Buskermolen et al., 2012). Second, when designing, designers need to envision the future context of use, to understand how future use situations will be affected by the concept (Erickson, 1996; Parrish, 2006). Existing methods focus on helping designers to envision future use and on establishing empathy with users (e.g. Atasoy & Martens, 2011; Bijl-Brouwer et al., 2011). The Co-Constructing Stories method offers designers the pos-

sibility to involve users in this process, and helping users to imagine themselves in future use situations and come to a judgment on whether and how the concept may bring added value to their life.

### How does it work?

A Co-Constructing Stories session consists of two phases: *sensitization* and *envisioning* (figure 1).

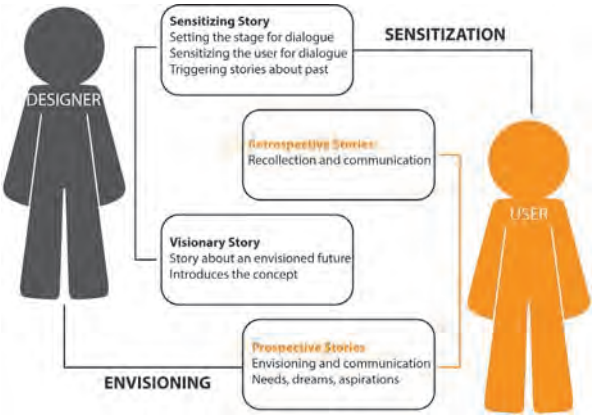
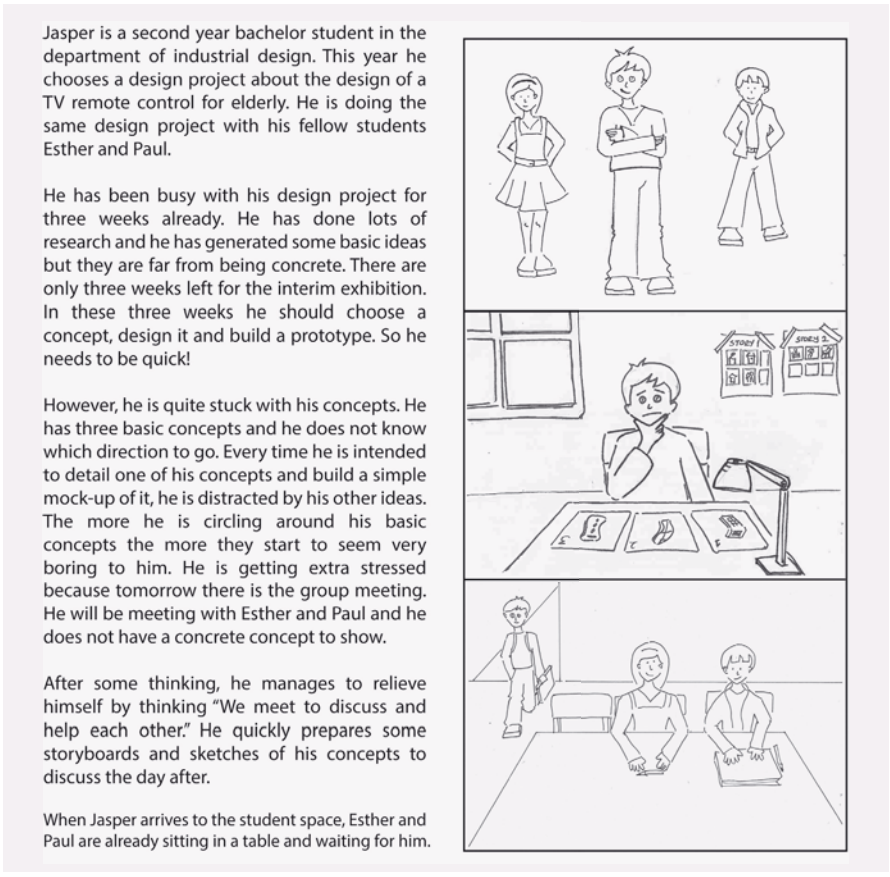



**Figure 1. The protocol of the Co-Constructing Stories method**

The sensitization phase helps participants revive their past experiences and make the relevant use situations more concrete, so that in the envisioning phase they can better envision the future. The sensitization phase starts by a *sensitizing story* presented by the designer. It aims to set the stage for dialogue and introduces the context of interest. After the story ends, the designer asks the user whether he recognizes the story, why or why not, and invites him to continue the story by telling about his past experiences. Through non-directive questions (what?, how?, why?), the designer encourages the user to tell a few stories about relevant past experiences. The user is given prompt materials, such as sketching templates, pictures, maps, et cetera, which help him to focus on a relevant context of use, organize his thoughts and communicate them to the designer. The sensitization phase provides stories revealing past experiences of users which enrich the designer's understanding of the current context of use. Figure 2 shows an example sensitizing story which was prepared by a designer working on the design of an interactive studio, equipped with multi-touch table and interactive wall displays, to be used in collaborative design meetings. Upon this story, the designer elicited stories from the user about his real-life experiences in collaborative design meetings.

The second phase starts with the *visionary story* told by the designer that introduces the concept in an envisioned context. When the story ends the designer elicits the first impressions of the user about the concept by asking what the user liked and disliked in the story. Then, the designer asks the user to envision himself as the user of the con-



Jasper is a second year bachelor student in the department of industrial design. This year he chooses a design project about the design of a TV remote control for elderly. He is doing the same design project with his fellow students Esther and Paul.

He has been busy with his design project for three weeks already. He has done lots of research and he has generated some basic ideas but they are far from being concrete. There are only three weeks left for the interim exhibition. In these three weeks he should choose a concept, design it and build a prototype. So he needs to be quick!

However, he is quite stuck with his concepts. He has three basic concepts and he does not know which direction to go. Every time he is intended to detail one of his concepts and build a simple mock-up of it, he is distracted by his other ideas. The more he is circling around his basic concepts the more they start to seem very boring to him. He is getting extra stressed because tomorrow there is the group meeting. He will be meeting with Esther and Paul and he does not have a concrete concept to show.

After some thinking, he manages to relieve himself by thinking "We meet to discuss and help each other." He quickly prepares some storyboards and sketches of his concepts to discuss the day after.

When Jasper arrives to the student space, Esther and Paul are already sitting in a table and waiting for him.

**Figure 2. Impression of a sensitizing story**

cept. The user is invited to retell the stories that he told in the sensitizing phase by asking: what would this story be like if you had the concept back then? What would still be the same and what would be different? How would you feel about it? The user is given prompt materials, such as sketching templates, pictures, maps, et cetera, which help him to communicate the situations he envisions. The designer facilitates this envisioning process with non-directive questions. With these questions, the designer encourages the user to supplement the basic story about the concept with contents representing anticipated future experiences, based on the needs, dreams and aspirations of the user. Figure 3 shows an example visionary story which was prepared by a designer working on the design of an interactive studio for collaborative design meetings. Upon this story the designer elicited why/why not the users would like to use the interactive design studio and how it could make meaningful contributions to their collaborative design meetings.

Towards the end of the session, participants are invited to compare the current and future situations and to discuss positive and negative points of both situations. The envisioning phase provides the designer with stories containing envisioned experiences that enable him to enrich the story about why the concept will be valuable to people. The whole session lasts about 45 minutes to an hour.

## Relation to other methods

The Co-Constructing Stories method builds on the previous work on scenarios, storytelling and participatory design. Thus it has some elements which also appear in existing tools and techniques; however, why and how these elements are brought together is unique to the method. Like Fictional Inquiry (Dindler & Iversen, 2007) and Storytelling Group (Kankainen et al., 2012), the method aims to elicit visions of people about the future. However, different from these methods the Co-Constructing Stories method do not inquire 'a' dream future but the anticipated future of the user self. Similar to Generative Techniques (Sanders & Stappers, 2012), Contextmapping (Sleeswijk Visser et al., 2005) and Co-reflection (Tomico & Garcia, 2011), the Co-Constructing Stories method also uses past experiences of users to trigger them to envision the future. However in the Co-Constructing Stories method the past experiences and future visions of the user is more attached. User uses the concrete accounts of his past experiences as a ground upon which he builds his vision about his future that will be enabled by the concept. In sensitizing phase the method elicits accounts of users' past experiences and while doing so it uses a dialogue which is similar to Explicitation Interviewing (Light, 2006); however, in addition to this technique the method also uses scenarios and prompt materials which would facilitate the dialogue.

Jasper puts all his drawings in a USB and walks to the meeting room. The meeting room is equipped with a large multi touch table and two interactive wall displays.

When he arrives, Esther and Paul are already waiting for him. They ask him to start showing his concepts. He copies all his storyboards and sketches in the system.

While he is presenting this concepts Esther and Paul are marking the things that they like with a digital, colored marker.

Jasper starts to get really confused with all the comments and the markings made on his original sketches. He decides to move the sketches to the multi touch table so that everybody can do his/her drawings.

Jasper, Ester and Paul make their personal copies of the sketches by double tapping on them. They start to make individual changes on the original sketches and communicate it with the rest. At the end they put their sketches in the middle of the table. Jasper extractes the aspects he liked from the sketches of his friends and combines it with his sketch.

He put his final sketch on the interactive wall. Everybody look at the final sketch and decide that it is going towards the right direction. Now it is time for Esther to present her ideas.

**Figure 3. Impression of a visionary story**

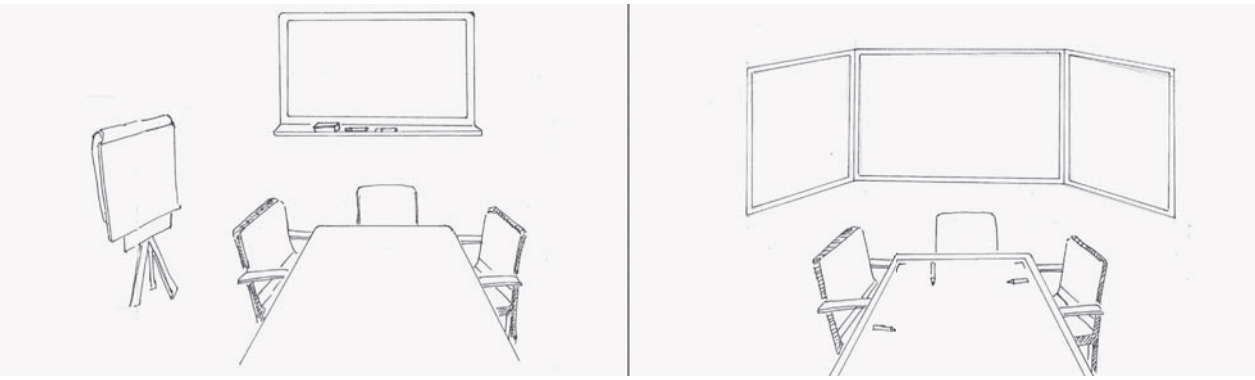


**Figure 4. An impression of sketching templates used as prompt materials in the interactive design studio case. Left for sensitizing phase (current situation), right for envisioning phase (future situation)**

## Preparing the session

*Making the aim of the study and the design space it concerns explicit*

The first step is to make explicit who are the target end users and what benefits the concept is expected to provide to these users. Also, the designer makes explicit what are relevant use situations for the concept. This results in the initial concept story (or stories).

*Preparing storyboards*

Next the designer starts preparing the materials needed for the session: two storyboards and associated prompt materials. One storyboard presents the *sensitizing story* and aims (1) to set the stage for dialogue, (2) to introduce the context of interest and (3) to elicit past experiences of the participant concerning that context. It presents realistic character(s), situation(s) and experience(s) that the participant can easily identify with. It is an open-ended story. After the story ends, the participant is asked whether he has been in such a situation and how the story continued in his case; the participant is encouraged to tell his past experiences. The second storyboard presents the *visionary story*. It is a possible continuation of the first storyboard, including the new concept. It is important that the participant understands the story and empathizes with the presented situation, but he should not be overwhelmed by it. The participant should still feel encouraged to be critical.

The designer should choose a medium which is suited to communicate the storyboards. We recommend presenting them on a screen like a simple flipchart animation, so that the participant is not put under pressure while he is reading the storyboard and the designer is waiting for him to finish. Moreover, looking together at a screen puts the participant and the designer in equal positions. Tools like *idAnimate*, presented in this issue, can be used to create the storyboard.

*Preparing prompt materials*

We found it useful to provide participants with prompt materials to be used by the user when he is telling the stories representing past or envisioned experiences. The prompt materials appear to help participants to organize their thoughts. Some users find it convenient to use them for clarifying and illustrating their stories by sketching. Also, they create a point of attention for gazing, so that the user is not forced to gaze at the designer all the time. The materials should be prepared per case. They can be low-fidelity mock-ups of spaces, blue print maps, pictures, templates for sketching, etc (figure 4). The prompt materials may help to trigger the imagination of the people.

*Choosing the setting*

Before conducting the session the designer should also decide where he will meet with the participant. He should create a relaxing atmosphere, so that the participant feels comfortable. Figure 5 shows an impression of the session. The designer should also decide how he will capture the sessions. We recommend recording the session with video camera so that the conversation is not interrupted by the need to take notes and so that the visual and gestural information can be captured.

## Analyzing the results

The method elicits stories of past and anticipated future experiences. These stories can be used in different ways depending on the case and the needs and interests of the designer. One possibility is to use the raw materials for inspiration during the further design process. In this case the designer immerses himself in the stories told by the users to gain empathy and get inspired (Sanders & Stappers, 2012). A second possibility is to use the feedback and suggestions to give direction to concrete design decisions. A third possibility is to use the stories told by the users to learn what matters to users: as the stories are about past (real) and future (envisioned) experiences, they typically provide information about how the concept might give rise to valuable experiences. A structured method to extract this information is to apply thematic analysis (Taylor-Powel & Renner, 2003). Thematic analysis requires considerable

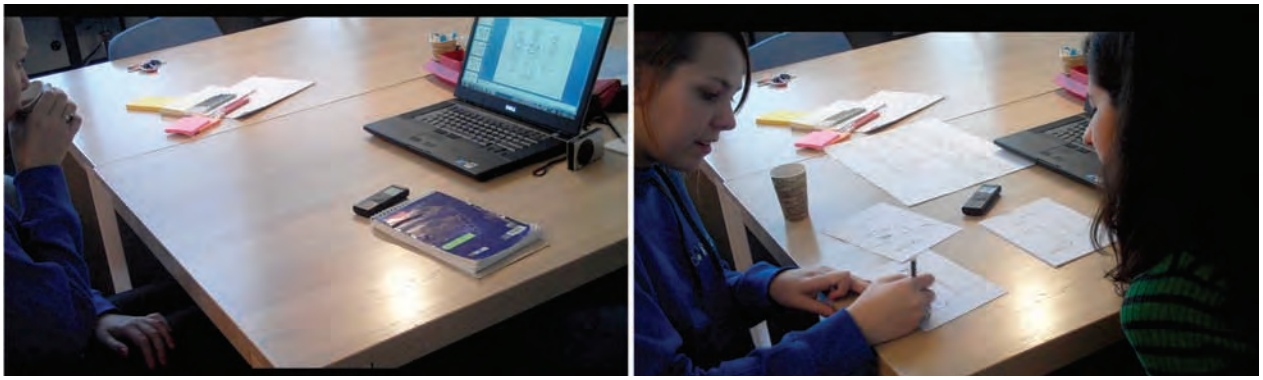


**Figure 5. An impression of the session**

time, however, and not all designers may want/need to conduct such a thorough analysis. In all cases, the stories told by the users should enable the designer to enrich the concept story.

## Reflections on the method

Our experiences so far have shown some advantages of the method over similar methods. Firstly, the method elicits feedback about the future concept which is both deep and specific to the concept. Designers find such feedback both useful, as it is inspiring and trustworthy, and usable because it is specific to the concept, elaborate and structured (Ozcelik Buskermolen et al., 2012). Secondly, the method elicits stories from the users. Stories are easily remembered, communicated and they establish a shared vision among the members of the design team (Erickson, 1996). Last but not least, the method has a discount yet effective sensitization phase, as participants can talk about two to three cases in twenty minutes and reveal several anecdotes.

Although the Co-Constructing Stories method can be used for improving existing products, we believe that the main added value of the method is to elicit feedback on radically new concepts. It is often argued that end users are poorly equipped to provide meaningful feedback on the value of a radically new product. However, we believe that it is a matter of facilitation. The Co-Constructing Stories method helps users to project new design concepts in their future use contexts so that although the concepts are very new to them, they can reflect upon whether these concepts would be valuable for their everyday life.

The Co-Constructing Stories method is developed for the early phases of the design process, when there is no detailed concept for evaluation available yet. However, the procedure may also be used in later phases. The sensitizing phase could still be arranged in the same way, but when more advanced prototypes are available, they could be used for exploration of the concept in the envisioning phase.

## Appendix: Practical guidelines for applying the Co-Constructing Stories Method

*The preparation*

1. While preparing the scenarios, keep in mind that users can comment on any detail you put in the scenarios, thus avoid the details unless user feedback on these details is welcome.
2. Prepare storyboards such that the users can empathize with the story and be drawn in the story space. Incorporating the known traits and attitudes of the user group and the general emotions associated with the context helps users to empathize with the stories.
3. Prepare prompt materials such that it is not hard for users to work with them. Playing with loose materials can be easier for people than sketching certain situations.

*The sensitization phase*

4. After your participant reads/watches the first storyboard you created, ask him if he recognizes the situation and which aspects in the story make the situation recognizable for him.
5. Elicit *concrete* real-life experiences. Make him concentrate on *specific situations* by asking about the last time he experienced such a situation or the first time, or about when he felt most frustrated or happy.
6. Help your participants explain the situation to you vividly, by asking questions such as where he was, what was the context, whom was he with, what was he doing, why was he so frustrated, why was he happy (and some other details that you might be interested to learn), etc.
7. Elicit more than one experience. The first experience your participant remembers may not be the most interesting one, as he is also getting used to the process. In addition, talking about one situation may make him remember further situations which might be more interesting for you.

8. Ask your participants the things he liked and disliked regarding each situation. Elicit his emotions and the underlying reasons for the emotions.
9. Note the experiences that your participants told you about and also the things he said. You will need this information at the end of the session when comparing the past experiences with envisioned ones. If needed, write down keywords as mnemonics for the experiences, but avoid interrupting the conversation by taking extensive notes.

### The envisioning phase

10. After your participant watched the second storyboard, ask him how he found the story. Is it recognizable to him? What does he think about the concept? What does he like about the concept and what not?
11. Ask your participants to imagine what the situation would look like if he had the concept in the situations he told about in the sensitization phase. Ask how things would be different (for good or bad).
12. Repeat the situation for every single situation he told you during the first phase.
13. Note the situations that your participant told you and the things he said. You will need this information while comparing the past and envisioned experiences.
14. Ask your participant to compare his past and envisioned experiences. Ask him about the things he appreciates in each situation. What are the things he is concerned about or does not like in each situation? What would be the added value of either situation over the other? What are the down sides of each situation if compared to the other? Overall which situation he would prefer and why? Or maybe in which kind of situations would prefer to have the concept and in which situations he would see no value?
15. If the user produced sketches, you can put the past and envisioned situations next to each other to facilitate the discussion of these situations, as they are placeholders for the stories that your participants told you. If no such materials were produced, you can use your notes to help your participants. You can remind him the things he said like 'you also talked about xxx while you were telling this story to me.'
16. End the session by thanking your participant.

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## Samenvatting


In de vroege fasen van het ontwerpproces willen ontwerpers graag weten hoe bruikbaar de beoogde doelgroep de voorgestelde concepten vindt. Een manier om deze informatie te verkrijgen is om feedback op de vroege ontwerpconcepten te vragen aan de gebruikers, omdat zij domeinexperts zijn. Echter, omdat de vroege concepten nog niet tot in detail zijn uitgewerkt, kan het zijn dat gebruikers het lastig vinden om te begrijpen wat de resulterende gebruikservaring zal zijn en om relevante feedback te leveren. Daarom moeten gebruikers hierbij ondersteund worden. Ze moeten worden geholpen om zich te verplaatsen in de toekomstige gebruikscontext, en om zich voor te stellen hoe ze het nieuwe concept in deze context zullen gebruiken en of het concept toegevoegde waarde heeft voor hun dagelijks leven en/of werk. In dit artikel introduceren we de Co-Constructing Stories methode, gericht op het ondersteunen van gebruikers bij het verkennen van vroege ontwerpconcepten. Bij de Co-Constructing Stories methode worden gebruikers eerst gestimuleerd om over relevante vroegere belevenissen te praten, en daarna worden ze uitgenodigd om zich toekomstige belevenissen voor te stellen, zoals die door het concept tot stand gebracht kunnen worden. De eerdere belevenissen verschaffen de concrete context waarin de gebruikers nagaan hoe ze het nieuwe concept in het dagelijks leven zullen gebruiken en waarom het wel of geen toegevoegde waarde zal hebben. Hierdoor wordt feedback over de waarde van het concept op een indirecte manier verzameld. In dit artikel beschrijven we de Co-Constructing Stories methode en de motivatie achter de methode. We reflecteren op het gebruik van de methode in de ontwerppraktijk en geven richtlijnen voor ontwerpers die de methode in de toekomst willen gebruiken.