

Working paper: Writing and Using Human-centered Stories in Interaction Design

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Abstract

This paper describes briefly how it is possible to write and use stories resembling fiction short stories when doing interaction design. It is based on the results of three published and one pending research project, on my own experiences as a writer and on my experiences with two courses that in total were completed by 29 computer science students who wrote different types of texts, including articles, traditional scenarios and human-centered stories.

How to use the contents of this paper

I hope you will use and be inspired by it. You are free to pass it on to others, and you are more than welcome to send me your comments and questions. In return, I will ask you to do the following:

- Write to me about your good and bad experiences so I can continue to improve the methods. Also, if you like, send me samples of what you have written. I will not quote them without permission.
- If you mention these methods in some of your own writings, please refer to me and to this paper.
- If you have received this paper from someone else, send me an e-mail with your name and affiliation so I can follow its distribution. It is also a good chance for you to tell about your experiences.

Background

Traditional scenarios can visualize the use of a specific interface, but they tend to be driven by the interface and not by the emotions and motivations of users and other characters in them [7]. This is similar to the plot in some James Bond movies: If he is given an exploding wristwatch in the second scene, the plot must include a situation where he will need an exploding wristwatch.

A traditional scenario often gives an unrealistic impression of the situation of use and of the social context in which the interface is used [7]. In addition, it is often difficult for a

writer to realize that his or her scenario is superficial and overly optimistic, and that decision-makers may reject both the scenario and the described interface.

This paper describes how to write and use stories that are driven by the emotions and motivations of users and other characters in them, and where the users must overcome problems or succeed in conflicts when using an interface. Such stories are similar to fiction short stories and use the same methods and effects. This is the type of stories that I define as human-centered stories.

Before I continue, it is necessary to clarify the difference between human-centered stories and fiction. Even though a human-centered story uses dialogue and other methods from fiction writing, it may actually be real – non-fiction. It may for instance describe the work and relations between people in an existing workplace as precisely as possible. In contrast, a scenario or a technical description of a planned interface is a work of fiction. It describes something that has no real existence. This means that even though a human-centered story uses methods from fiction writing, it is not necessarily more fictitious than a technical description of the same interface.

Advantages of Human Centered Stories

The texts written in my courses indicate that computer science students find it a little bit easier to write human-centered stories than to write articles, personas or traditional scenarios. There were fewer basic errors in the stories than in the other types of texts, and the standard was so high that I enjoyed reading most of them. The writing of human-centered stories is probably easier because we have grown up with fiction literature, we are familiar with the structures and elements used in it, and because the motivations and emotions of the characters almost automatically creates a consistency while writing.

It is comparatively easy to write realistic human-centered stories, and it is fairly easy to evaluate whether a story appears to be credible or not. That is because we can use our general human experience about how people normally behave and how they may behave in a specific situation when writing or evaluating such stories.

The texts written in my courses show that the writing of human-centered stories inspires the creation of new functions and features in the interface. When the person in the story faces a problem, it is natural for the writer to think about a function or a feature that may solve the problem.

A human-centered story can be used to describe a flow or a process where an interface is used, without describing every step in details. This means that the story can give a concrete and specific description of how a user experiences an interaction, before any detailed design decisions are made.

My latest research indicate that readers get a better understanding and have fewer misunderstandings when they read a human centered story compared to when they read a traditional scenario. The story includes a social context and a description of emotions and motivations that the reader can use as reference points when trying to understand how an interface is used.

Traditional scenarios may be seen as more objective or serious than human-centered stories. However, my results indicate that decision-makers in general prefer stories with a certain amount of emotions and dramatic elements [6].

Writing human-centered stories

The most exciting stories describe how characters with strong feelings fight to overcome problems it seems almost impossible to overcome. However, when the story shall describe an interaction with an interface, the plot must not be so dramatic that it moves the focus away from the interaction. I have seen both in my own stories and in stories by my students that it is tempting to use plots that include murder, infidelity, serious crime or other life-shattering events. Therefore it is best from the beginning to focus on something less dramatic. Good topics are: Conflicts between the interface and what is demanded by a user or people surrounding him or her, something that goes wrong when using the interface, or the consequences when a user tries to use the interface for another purpose than what it is intended for.

When a story shall describe how an interface is used, it is often best to focus on a difficult, but realistic, user. If the user does not fully know the interface, is impatient or find it difficult to use a computer, it is easier to explore possible problems. However, it is important that the user has some interesting and attractive characteristics. Otherwise, most people do not want to read the story [4] and probably not to design an interface to be used by him or her.

My experience is that stories that describe the use of an interface normally shall be at least two pages and not more than six pages. Longer stories may take too long to read, six pages are normally sufficient to describe one or a few aspects of the interaction, and if the story is shorter than two pages it may be difficult for the reader to get engaged in it.

It is easier to write a compact story if you focus on the most difficult or critical moment: For instance when the user is most busy or most stressed, or when the outcome of the interaction is most important.

In addition, it is important to remember that the situation and the characters shall be presented in the beginning, and that the story shall lead to a climax and a conclusion.

Most fiction writers use freewriting, at least those I have spoken with [5]. Freewriting consists of writing continuously for a period without reading or changing anything that is written, and only afterwards making revisions.

Freewriting can even be used to develop characters and a plot [1]. When you freewrite about a person in a specific situation, you will often experience that the character becomes more real and that the plot is developed through the writing. It is another example of how writing stimulates creativity. (I have described the psychological background of this in another paper [5].)

I am surprised by how easy it has been for both myself and for my students to write dialogue. When the first remarks are written it may feel difficult to stop. That is probably because dialogue is a natural form of expression. Most of us are used to take part in a conversation, and a dialogue is most of all a written conversation between two or more persons.

Most people are used to hear what people say and to judge whether they sound sincere or not. If you write a dialogue where a user tells another person about his or her use of an interface, it is often easier to determine if the interaction is realistic, than if you directly describe each step in the operation of the interface.

Finally, it is always worthwhile to get other people to read and comment on a story. There may be missing information or obvious misinterpretations that it is difficult for you to identify. It is my experience that if a reader tells that there is a problem at a specific point in a story, then in most cases there is a problem at that point, even if the reader cannot explain what the problem is.

Possible problems

The following are problems I have been asked about, experienced or seen in my courses.

You feel you need more knowledge about the application area. It is of course necessary to know something about the users and situations of use before you can write a human-centered story that describes the use of an interface. However, it is easy to overestimate the amount of knowledge that is necessary. Often it is sufficient that you have an impression of the type of users, the types of tasks they carry out, and the interfaces and other tools that they use.

It is difficult to get ideas and to start writing. Use freewriting. Write about a person or a situation, if it does not feel right, stop and write about another. If you continue, there is a good chance that you at some point feel that you have hit right: That you have found the characters, situation and plot you need to describe the interaction with an interface.

There is a long introduction and not enough focus on the interface. Cut away from the beginning. Stories often get better if you remove the first paragraphs or the first page. It may then be necessary to add a short sentence about the situation where the story starts and whom the main character is, but that is all. If other parts of the plot seem too drawn out, the easiest solution is to cut them away. Often it is best only to give the highlights and let the reader imagine the rest.

The description of the interface is too drawn out. That is a common problem if you describe every detail in the operation of it. Actually, it is possible to give the impression that an interface is slow and difficult to operate, simply by describing every step in its operation. If you do not want to do that, describe the purpose of the tasks with only a few specific details, for instance some that are of particular importance for the user.

You cannot fit all possible interactions and problems into one story. It is a problem that I have heard mentioned several times, but I have never actually experienced it as a problem. Maybe because the solution is so simple. It is easy to write a story that describe one user and one type of interaction and then later to write another story that describe another part of the interaction and perhaps another user.

When can stories be used in interaction design?

My interviews show that there are large individual differences in how human-centered stories are perceived. If you want to use such stories in interaction design, the best advice is to try slowly and see how it goes. The following are some applications of human-centered stories that my results suggest are possible.

Human Centered stories can be used when clarifying the precise situations of use with domain experts. I have seen how it is comparatively easy for domain experts to identify details in a story that does not fit the actual situation of use, also details that neither I nor the domain expert normally would be aware of. I have seen that domain experts in general find it easy to discriminate between the realism of a described context of use and the realism of the plot. They can accept a dramatic plot and at the same time detect small errors in the description of the context of use.

A number of developers have indicated that they would like to use stories when discussing and deciding the requirements of an interface. My interviews show that stories facilitate discussions of the social context where an interface is used [6]. They can be used as starting points for discussing which functions that are necessary and how the user might use them. In addition, as earlier described, the writing of stories can in itself generate ideas for new functions or features.

A number of decision-makers and developers told that they would use stories at presentations or negotiations with customers. Some of them would even like to use

stories that described problems or conflicts. Such stories may in particular be useful when discussing in details how a system shall be designed, and how it shall be designed to reduce problems because of misuse. As one example, some developers would like to use a story about the hacking of a control system when discussing the required level of security in specific systems.

Human-centered stories can be used to create general interest and to initiate public discussions of how specific types of technology and interfaces are used. They are in general more interesting to read than technical articles, and the human emotions and motivations in them make it easier for the reader to understand the interaction with the interface. (This is similar to the role that science fiction often has played.)

Human-centered stories are engaging, and my research indicates that they make the reader feel that he or she understands technical details [6]. Therefore it is important to be aware of purposes for which they are less suitable.

My results show that stories are not better than technical descriptions for communication technical knowledge [6]. I found in particular that an ordinary user guide is better than a story for describing the operation of parts of an interface. It is even possible that a user guide may give a better description of an interface than a traditional scenario.

My results show that stories in most cases do not change the attitudes of the readers. It appears that any attitude changes only happen when the reader takes time to study and possibly discuss a story. (Which is something that people who disagree with a story rarely do.)

Finally, even though extreme programming use the term "stories" it is not advisable to try to write software directly from a human-centered story. The story leaves too many unclarified questions about the details of the interface. It is probably necessary to take an intermediate step before starting to program, for instance to write use cases or a user guide that step by step describes the different functions and the structure they are part of.

If you want to learn more

The best and most essential part in learning to write human-centered stories is to sit down and write some. At first simply with the goal of getting some stories written. It is then possible to evaluate and improve them. With a normal typing speed it is possible to complete a story in less than one day.

I hope it will be possible for me to offer a tutorial in some of my methods at one or another European conference, but as now no tutorials are planned.

A good chance to learn more is to enlist in a creative writing course. You may in particular get valuable feedback from the teacher and from other participants. A number of universities and other institutions offer such courses. It is my experience that a forty-hour course in addition to sufficient training often is enough to write human centered stories of an almost publishable standard.

This paper gives only a very brief introduction to the principles used when writing fiction literature. In addition, I can recommend two books for self-study:

- Damon Knight: Creating short fiction [3]. He is himself a master writer and gives a good introduction to the principles of writing fiction short stories. What he describes can be used directly when writing human centered stories.
- Peter Elbow: Writing with Power [2]. This is the best book I have found about the writing process and writing in general. Elbow offers a lot of good advice about how to manage and improve your writing.

Conclusion

Human-centered stories are driven by the emotions and feelings of the characters in them. They are comparatively easy to write, the writing tends to generate ideas for new functions and features, and compared to traditional scenarios they tend to be more realistic and cause fewer misunderstandings.

The stories are useful as a basis for discussing situations of use and when deciding software requirements, but they are not suitable for communicating technical information, and it is uncertain if and when they may change the attitudes of the readers. Finally, human-centered stories are not so detailed that it is advisable to write software directly based on them.

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Literature

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