Using Narratives, Humor, and Social Navigation: An Inspection of Two Systems

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Abstract. In this paper we will examine ways of making tasks that we perform on a computer a socially richer experience. We present two systems: Agneta & Frida and the recipe-based food store. The first system introduces narrative and humor into web browsing by using two anthropomorphic agents that comment and tell stories while a user browses the web. The second system is an on-line food store that uses collaborative filtering techniques and other means to connect people in order to make on-line shopping a more social task.

1 Introduction

Since their inception, computers have been considered primarily as *tools*, making tasks more efficient. In recent years however, computers have entered the field of entertainment and art, not aiming at supporting 'serious' work, but to create pleasurable, fun, social or aesthetic experiences in their own right (Murray, 1997). Chat environments, games, digital art, and hypertext narratives are all examples of this shift from *work* to *pleasure*. The computer is a 'place' where these two dimensions of life come together and possibly interact. Recent studies have aptly pointed out the tight connection between cognition and more affective dimensions (Picard, 1997). Being in, and navigating through, information space are of course influenced by 'rational' decisions and reasoning, but this side is more or less always accompanied with a general overall experience of the browsing, with distinct emotional and affective features. Frustration, anxiety, or 'flow' are just some examples of this.

With these considerations in mind how can we design systems that better support users, than the ones that we see today? One way to tackle the problems mentioned above is to introduce the notion of social navigation. In social navigation we let users (instead of the system) help each other in various ways. For instance, imagine surfing a web site and seeing all the people in it and be able to communicate with them. This will create a sense of not being alone in the space, in effect, reducing the feeling of being lost and the anxiety we feel when navigating large information spaces, such as, the WWW. Another example of social navigation could be in a more indirect way, for example, following trails of people in a web site or getting information filtered based on what other people (similar to you) think.

Finally, we can also design systems to be more 'social'. Using, for example, antrophomorfic agents (characters) with human characteristics acting as "co-users" that aid him/her. For instance, letting them be

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more reflective to their own medium and with a definite humorous twist, teasing out emotive reactions in a user.

In this paper we present two systems that were designed with these ideas in mind. The first system, Agneta & Frida, rely heavily on humor and narrative to make web browsing a richer experience for a user, making it pleasurable and enjoyable. But also using humor to make the user feel more relaxed with the system. In the other system, the on-line food store, we try to make the task of "buying food on the net" to a socially richer experience, by connecting "shoppers" to each other, in a variety of ways. The major difference between the two systems is in the way they introduce social aspects to a task; in Agneta & Frida this is built into the system as two antrophomorfic characters that act as "co-surfers", whilst in the "food store" we use other people to make it socially richer.

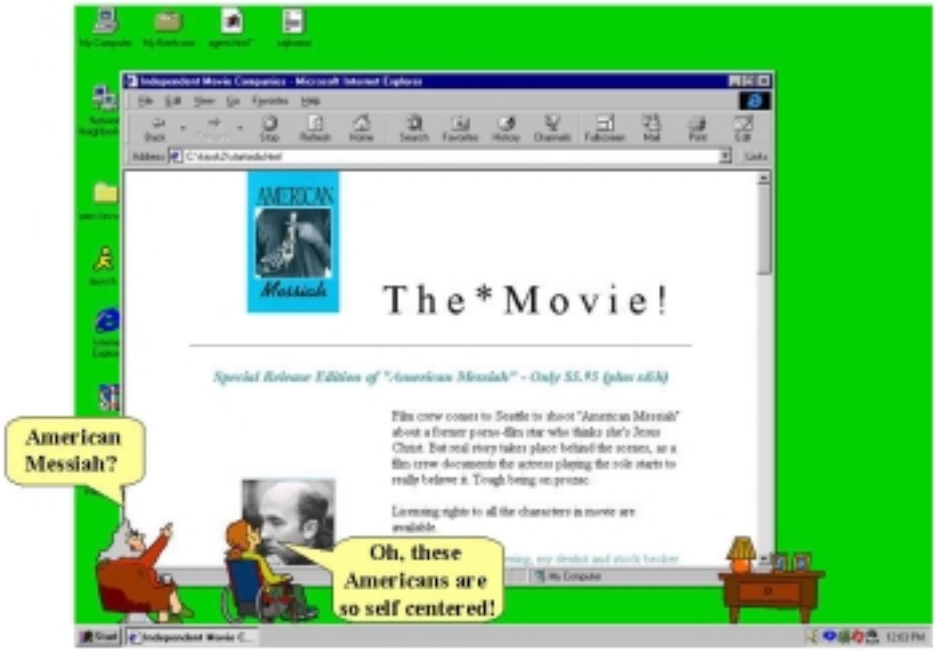

Figure 1 Agneta & Frida reacting to the contents of the web site of a film production

2 Agneta & Frida

On the user's personal desktop are placed two animated females (mother and daughter), sitting in their living-room chairs, watching the browser (more or less like watching television). The motoric or verbal behaviors of the characters are triggered by three sorts of cues.

First, behaviors are connected to the user's activity and document. Loading a page may trigger general everyday speculations to what something on a site means, or what the purpose with the site is or if the design is likable or not (Figure 1). Moving the mouse over an image may trigger a comment on the content of that image. These comments are often humorous and reflexive in nature, containing skepticism towards computer culture in general and its male dominance in particular. Agneta & Frida make remarks on the shortcomings of the system and acknowledge the frustration of a user encountering 'file-not-found' and 'waiting for loading' messages. The reflexive humor aims at trying to place the agents on the same side as the user, not the computer. This is also manifested in the fact that Agneta & Frida look at the browser *with* the user - not out *towards* her (Figure 1). By having two characters instead of just one, we made dialogue possible, and hence a more natural and dynamic way to introduce humor and self-reflection into the design.

The relevance - as well as the humor! - of the commentaries, are in the prototype guaranteed by us, but in the future one could expect that commentaries, or parts of them, might be generated on the basis of some machine based analysis of the textual/imagery content of the site in question. None of he behaviors in this category are repetitive – once executed they will not come back.

Another set of behaviors/comments is of a more general nature, unrelated to content or user's activity. This includes blinking, picking noses, going to the toilet/kitchen, drinking coffee or general gossiping about uncle Harry and Miss Andersson (the owner of a repulsive poodle that often enters Agneta and Frida's back yard, and about which they occasionally fantasize killing). Some of these are repetitive (e.g. blinking, yawning), and they are triggered at certain intervals when there are no other behaviors running. These behaviors were included to create more lively characters, having a life of their own, independent of the happenings in the browsing session. We wanted to avoid the impression that the behaviors were only automatic reflexes of user's actions.

Thirdly, the user can choose to let small narratives run through the browsing session, interweaving with the two behavior types above. So far, the prototype provides one comedy ("Poodles: Cute Fluff or Ambassadors of Evil?") and one melodrama. Each of these plots involves circa ten scenes, which by certain time intervals are played out on the desktop, mingling with the more content related behaviors, thereby (hopefully) encouraging the spectator to make connections between the web sites, content related commentaries, and the narrative information.

The intensity of these three kinds of behavior can be regulated by the user, depending on the browsing purposes (serious information seeking, wayfinding, exploration or entertainment browsing etc.).

Another feature is a search engine situated in their living room drawer on the right hand side of the screen. Here the user can not only search for words in the documents as a usual search engine, but also for words in the Agneta and Frida *comments history*, and then be presented with the page in question. The reasoning behind this idea is that jokes and comments about the information may in fact be better remembered than the information as such. If the user wants to find her way back to a particular site, the search engine supports those users that have a clear memory of the joke presented at that particular site. This again comes back to our focus on experience. The Agneta & Frida comments may be seen as 'affective annotations' of the information nodes, encouraging the

user to pay attention to the experiential side of being in information space. This can, through the

Figure 2. An experimental design of the on-line food store

search engine, be used to support some situations of navigation.

3 The Recipe Based On-line Food Store

The existing food stores on-line are all 'dead' spaces where users fill in how many milk packages, etc. they want sent to their doorstep. In a study by Richmond (1996) on shopping in a VR environment, it was found that the users also wants to be able to access the social aspects of a physical store, they wants to socialize with other people and have a multi-user experience.

How can the ideas of social navigation be made central and be used to inform design? One trail that we can follow is to recommend recipes using collaborative filtering techniques (Resnick, 1997). Recipes are interesting accumulated pieces of knowledge in this context. Through which recipes we cook from we convey a lot about our personality, which culture we belong to, our habits, etc. Making recommendations on which food to buy based on recommending recipes is an interesting functionality in itself. Imagine that we on top of that add accumulation of user behavior so that we understand which groups are most likely to choose which recipes. We have designed one such system that works as follows: as a (by the system) known user logs onto the system, it

will put up a recommended recipe. This recipe is the most downloaded recipe at that point in time for the category of users that this user belongs to. The user can add the recipe to his/her weekly schedule, which in turns adds the ingredients from the recipes to the list of items that will be delivered to their doorstep. The user can then ask for the next-best recipes that fits with his/her category of users - much in the same line as Amazon.com recommendations ("other people who bought this book also bought these books"). The recommended recipe will be chosen on the basis of three different characteristics that the user can manipulate: user groups, the category of food (Italian, Thai, etc.), and any particular ingredient that should be included (shrimps, beef, etc). In the following section we discuss the recommender system in greater detail and the benefits with our approach.

3.1 A Recommender System with Visual User Groups

Since recommender systems recommend based on what other similar users have done in the past we believe that this is a very important piece of information that should be provided to the user. The problem is of course the rather complex task of automating “labeling” of user groups. For instance, it would be extremely difficult for the Ringo system (Shardanand & Maes, 1995) to label a cluster of users as “reggae lovers with a flavor of ska”. However, if this could be done we would get a much richer recommender system. Imagine using the Phoaks (Terveen et al., 1997) system and getting information on what type of users recommend certain links. So, for example, an expert user would probably not follow links the novices often recommend. Our solution to the labeling problem is to put an "editor" back into the loop. The editor will look at the clusters of users (based on which recipes they have chosen) and "name" those with fuzzy names that conveys somewhat of their content: "vegetarians", "light food eaters", "spice lovers", etc.

Labeling of user groups not only tell something abut the user’s own group, but also give information about other user groups. This will allow a user to not only navigate from the highest ranked piece of information to lowest ranked piece of information (based on his/her user group), but also allow a user to navigate among groups of users. In the recipe domain this seems like a sensible idea; a recipe that is rather low ranked because the user is classified as a “meat lover” can still be the recipe to choose since it is highly ranked for “thai food lovers”. Furthermore, when we visually label user groups in this way some interesting opportunities arise. We can now split a user-profile into two separate ones: one that is long-lived and one that is short-lived (during a session with the store). That is, a user often has his/hers preferences when it comes to taste, but once in a while s/he likes to experiment with new and exotic flavors and food. In a way analogous to a user’s personality and current mood respectively. When the different user groups modeled by the system becomes visual to a user it is much easier to take benefit of that, and for instance, try “thai-food” for a while.

Imagine we have the following scenario; in our recommender system there are currently five user groups, five categories, and four ingredients (see Figure 1) for a user to base recommendations upon. A user tells the system that s/he wants recipes based on the oriental category, and with the ingredient curry (the user could herself is classified as a “thai lover”). The system will create a list of recipes (not visible to the user) based on what other “thai lovers” has chosen in the category oriental with the ingredient curry. The user can now start to traverse the list based on his/her group, or more interestingly chose another user group to base the ranking upon (e.g. Meat Lovers). Say that the user now wants to see what vegetarians have to say about the specified category and ingredient. What happens is that the system makes a new selection and ranks it according to the

vegetarian user group. Also, the system changes the user's short-term profile to be a veggie one, but the long-term profile ("thai lover") remains intact. If a user repeatedly chooses recipes based on a particular user group (e.g. vegetarian) his/hers long-term profile will gradually shift towards that user group.

Our solution will provide the users with more insight into the social trails of their own actions as well as other users' actions that have lead to the recommendations they finally get. It also provides some insight into the inner workings of the recommender system since the system gives feedback on how it classifies a user.

3.2 Enriching the basic recommender system

On top of our basic recommender it is possible to give more clues if a certain recipe is a good one or not. In the following section we will discuss four additional features that we add to our recipe store: more from, user comments, the social map, and distribution of weekly schedules.

In the introduction we mentioned that the recipes we cook from can tell a lot of ourselves. Something that we did not mention is the fact that the recipes we chose are often based on other people that we trust. It is often the case that we go to the same source when we search for recipes, especially when we want to try out something new that we never cooked before. We therefore attach to each recipe that we recommend a pointer to other recipes that came from the source (e.g. a person or a cookbook).

To this we add two forms of readware (Hill et al., 1992) to a recipe. Users have the ability to both comment and rate recipes. The ranking will be anonymous, so a user will just see a mean of all users' ranking of a recipe. The comments, on the other hand, will not be anonymous, so a user can see who wrote what.

Thirdly we divide the on-line store into a social map (see the floating frame in Figure 2) where each square (or location) represents a user group. When a user enters the store s/he will be represented as a "blob" in the map (in the user group she belongs to). Users can in this way see users on-line and also initiate chats with them. As one can see from Figure 2 there is a special user group called "Ask the Chefs". In this group are placed people, such as deli managers and chefs that work in the store. In this way a "shopper" can get personalized advice from experts.

Finally, in Figure 2 (behind the map) we see the weekly schedule. This will also be distributed to users. So when a user does not know what recipe to choose, she can look at another user's recipe to get inspiration.

4 Conclusion

The two systems presented represents a major transition of focus from the primarily cognitive user individually interacting with an interface, to a notion of the user that incorporates emotio-social aspects. These interfaces exploits social and affective 'competences' in the user through triggering other forms of processes than those involved in more traditional HCI. Both systems tries to investigate what these 'intelligences' consist of and in what way they may support certain forms of tasks. Thus, the fundamental principle behind both systems is that good design is not solely measurable or visible in quantitative terms of efficiency, but is intimately wound up with qualitative parameters and the way the system is EXPERIENCED by the user. Emotions and social part taking may

provide the incitement for a user to continue to use a system. If true, this will place completely different demands on design as well as interface evaluation techniques.

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