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Celebrity Recommender

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Abstract. This paper presents both a rationale and a pilot study for using celebrities to present computer generated content recommendations. The rationale explores how people's parasocial relationships with celebrities influence decision-making. The pilot study examines if celebrity presentation of recommendations influences subjects' qualitative assessment of a recommender. Statistical tests on a small sample indicate that the use of a celebrity did not significantly enhance users' perceptions of a recommender. However, the results suggest that influence between same-sex and cross-sex matches of subjects and celebrities should be further explored.

Introduction

The increasing number of channels from digital cable and satellite and the availability of entertainment content via the Internet have significantly increased consumers' content options. At the same time, the arrival of TV hard disk recorders such as TiVo and ReplayTV, and the availability of downloadable audio have begun to change the way people select content. For instance, where users once selected a TV program from 100 or so channels, disk-based storage in the home now requires users to select a program from the 15,000+ broadcast each week. Similarly, downloadable audio requires users to select individual songs instead of CDs and albums, creating a 15 fold increase in the number of options. How can people find the content they want from the swelling sea of choices?

The rapid growth in communication technologies has also led to an increase in the number of celebrities [8, 9, 11]. Traditionally, people have trusted celebrities to help them make content decisions. Music, movie, and TV stars appear in magazines, on radio, and on television where they promote their latest projects. Popular disc and video jockeys recommend the music they play and the artists and bands they interview. Celebrity critics rate movies, music, and TV shows. Even TV Guide, a magazine designed to list TV program times and channels, sells itself through the celebrities who appear on the cover. Celebrities are the content, and celebrities sell the content. And as the amount of content increases, so do the number of celebrities.

Recently, technology companies have been developing "content recommenders" to help users manage the increasing number of entertainment choices. Amazon.com

operates one of the most well known recommenders. Registered users on the Amazon.com system automatically see recommendations for books, music, videos, and even electronic equipment. Our research project at Philips focuses on the development of a TV show recommender. Our recommender combines the explicit ratings users make with an implicit method that tracks the TV shows users watch (for detailed information on how the recommender works, please see [10, 7]). While user testing, we discovered that people do not inherently trust computer recommenders. With this fact in mind, we began to explore building on users' trust of celebrities to increase their trust in our recommender. We designed and executed a user test to see if using a celebrity would increase people's perception of how well our TV show recommender performs. In other words, using the same content recommendations, we wanted to see if users trusted our system more when a celebrity appeared to make the recommendations versus when a computer makes those same recommendations.

Celebrity Background

In his 1961 book *The Image*, Daniel Boorstin defined celebrities as people well known for their "well-knowness" [4]. His definition works well, because it captures the most important aspect of being a celebrity: not being forgotten. However, by defining celebrities as people he fails to recognize the full range of modern celebrities. Instead, we suggest considering celebrities as well known characters. This modifies the definition to include both "real" celebrities and fictional characters.

Real celebrities generally appear more like characters than like people. For example, consider Tom Cruise and Tom Hanks. These popular celebrities command high salaries because they guarantee a strong box office draw: their success comes from the consistent delivery of a character. Tom Cruise plays a character one could call "the best." He is the best spy in *Mission Impossible*; the best fighter pilot in *Top Gun*; the best brother in *Rainman,* the best bartender in *Cocktail,* etc. Tom Hanks is a "regular guy" who encounters extraordinary circumstances. He is a regular guy who falls in love with a mermaid in *Splash*; a regular prison guard who witnesses miracles in *The Green Mile*; a regular guy of lower intelligence who leads an incredible life in *Forest Gump,* etc. When people decide to go to a Tom Hanks or a Tom Cruise movie, they know what character to expect.

The character of James Bond offers an excellent example of a fictional celebrity. James Bond possesses as much or more celebrity than the actors who play him. He can appear on the cover of a magazine as a silhouette and textual name, providing the same power to get people to pick up the magazine as Sean Connery. In addition, when people state they are going to see a Tom Cruise movie, their statement communicates as much meaning as when they say they are going to see a James Bond movie.

From this perspective one can view celebrities as merely *products* instead of *characters*. Why is Herbie [14], the Volkswagen Beetle who stars in several Disney movies, a celebrity while any other Volkswagen Beetle is not? What makes celebrities *characters* instead of merely *products* is the fact that they participate in a narrative. Simba, the heroic, animated lion from Disney's *The Lion King,* offers a good example. This movie generated 1.3 billion dollars in film and video release. It

generated three billion dollars in merchandise [1]. Disney sold a lot of stuffed lions. People did not want to own just any stuffed lion; they wanted to own Simba. They wanted to participate in the story.

Human Need

People create celebrities. And they create them because celebrities fulfill a human need for relationships [3, 13]. Celebrities offer parasocial relationships, interacting with people through televisions, radios, and print. People benefit from and enjoy these relationships because they are safe, one-way relationships, where people can select (and dump) celebrities without any fear of rejection.

People most often form parasocial relationships with celebrities, whom they only experience media. They attach their identity to the identity of the star with the hope of rising as the celebrity rises [3]. This phenomenon can be observed with popular music fans. Fans want to be known as having liked a band before it became popular. They publicly state that they have identified with this band for a long period of time. This increases their status with the other fans, because they appear to have "risen" with the band's fame. Similarly, sports fans identify with players and feel they have won when "their" team wins.

People begin and grow these relationships by consuming content featuring celebrities [13] and by allowing these celebrities to influence them [3]. A great deal of work has been done in the medical community on the effectiveness of celebrities to influence behavior. Evidence clearly indicates that people take actions based on celebrity recommendation [5]. David Basil in his study of celebrity identification and the dissemination of HIV information, found that people more willingly accept advice from celebrities (in this case the basketball star Magic Johnson) than they accept the advice of medical experts [3].

Content recommenders offer a unique environment for exploring the power of parasocial relationships between people and celebrities. Computer based recommenders can observe a user's selection of books, music, movies, clothing, TV shows, etc. Recommenders can get to know a user and tailor their interactions and recommendations to match the user's tastes. These recommenders can extend the one-way relationships users currently have with celebrities, making them more like a two-way relationship but with no fear of rejection. Celebrity recommenders also offer a good structure for building parasocial relationships by creating many opportunities for a user to take a celebrity's advice. These enhanced one-way relationships may even be more attractive to users than the one-way relationships available today.

Celebrity Pilot Study

With the long-range goal of building a celebrity recommender, we tested to see if using a celebrity would increase the perceived quality of our TV show recommender. This pilot study tested to see if adding a celebrity's photo to a list of recommendations made a difference in how participants rated the recommender.

The pilot study included 30 subjects (15 male, 15 female) ranging in age from 15 to 25. Research has shown that adolescents are more influenced by celebrities [2]. In addition, teenagers perceive celebrities of the opposite sex more positively than celebrities of the same sex [6]. By using an equal number of males and females we hoped to see if this effect held true with respect to a recommender system.

A few days before the test we had the participants rate 45 TV show genres and 74 channels on a scale between 1 and 10. A rating of 1 indicates genres and channels they hate, a rating of 5 indicates items they are neutral about, and a rating of 10 indicates items they love. These ratings became their profile. We fed these profiles into our TV show recommender, which produced an individual list of twenty highly rated programs from the 2000 programs broadcast the day of the test.

We randomly placed participants into three groups(Text, Generic Photo, and Celebrity) made up of five females and five males each. Group(Text) saw their twenty recommendations along with the following text:

> "Hi *ParticipantName*,
> I've looked at all of the shows on today and here are the top twenty I thought you might like to watch."

Group(Generic Photo) saw the same text, but in addition the text was signed with the name Paul. A photo of an attractive, young man who is not well known (not a celebrity) appeared above the text. Group(Celebrity) saw the same text as group(Text) and group(Generic Photo), but this text was signed with the name Will, and a photo of the celebrity Will Smith appeared above the text. Figure 1 displays how the recommendations appeared to the three different groups.

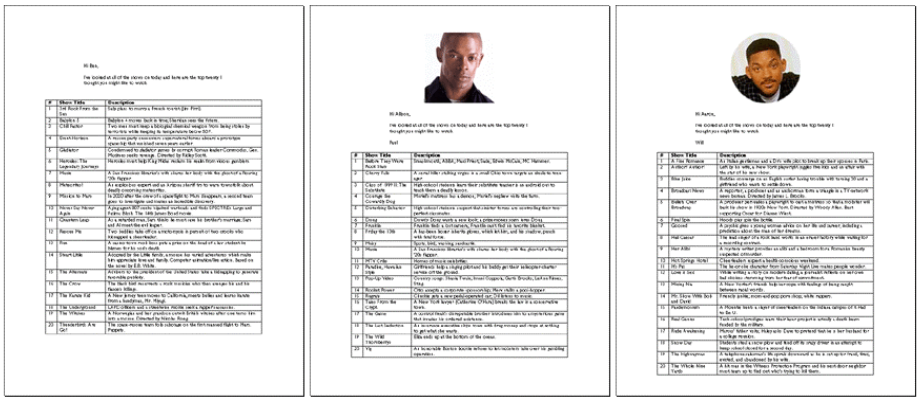

Fig. 1. Presentation of recommendations for Group(Text, Generic Photo, and Celebrity) from left to right.

We used these three groups to control for the effect of a photo. If we tested only the celebrity against the text, it would be difficult to determine if the celebrity made a

difference or if merely the addition of a human face made a difference in subject's perceived quality of the recommendations.

We selected Will Smith after initial polling suggested that he had both high recognition and positive association with our targeted age group. He is also perceived as an expert in the TV domain due to his status as a television, movie, and music star. Research indicates that celebrities who are knowledgeable about the products they endorse are more effective [12]. For the non-celebrity we selected the image of a young, attractive, African American, male-model for the GAP. Choosing a photo of a person of the same race and sex as Will Smith helped controlled for these variables.

During the test, subjects first viewed their personal set of twenty recommended TV shows. The listings included the TV show title and a description, but no scores to indicate that one show might be more recommended than another. After reviewing their recommendations, subjects answered a series of qualitative questions focusing on the quality, usefulness, and trustworthiness of the recommender. They rated each question on a 1 to 5 scale indicating a qualitative value of 1 poor, 3 neutral, or 5 good. Next we asked the subjects which of the twenty recommended TV shows they would actually watch. Again using a 1 to 5 scale, subjects indicated they 1 "would not watch it", 3 "might watch it", or 5 "would watch it".

We hypothesized that using a celebrity would increase subjects' perceptions of the recommender. We expected subjects who saw their recommendations with Will Smith's face to rate the quality, usefulness, and trustworthiness higher than the other subjects. However, we had no hypothesis as to how a celebrity might affect TV shows users would actually watch. By asking both sets of questions we could determine if these two aspects of the recommender are related.

Test results

The results showed a slight increased perception of the recommender for group(Celebrity) with respect to both the qualitative questions and to the TV shows participants indicated they "would watch". However, these scores were only slightly above the scores for group(Text). Group(Generic Photo) stood out most from the other two groups with the lowest scores.

Table 1. Averaged ratings for qualitative questions and "would watch" TV Shows divided by group and sex. (Subjects' answers conformed to a 1 to 5 scale.)

	Sex	**Qualitative**	**Q by Sex**	**Would Watch**	**WW by Sex**
Text	F	3.25	3.25	3.20	3.26
	M		3.25		3.13
Generic Photo	F	2.80	3.05	2.84	3.10
	M		2.55		2.58
Celebrity	F	3.35	3.65	3.23	3.52
	M		3.05		2.94

The difference between males and females proved to be the most interesting. On average, females liked the recommender more than males. In addition, females preferred the celebrity presentation to both the text and generic photo. Males, on the other hand, preferred the text presentation of their recommendations. This pattern appeared for both the qualitative questions and for the "would watch" ratings of the twenty individual TV shows.

The means of participants' responses indicate that females generally liked the recommender more than males. However, viewing the results as bar charts illustrates a different story (see figures 2 and 3). When the females and males see recommendations presented as text, their reactions are quite similar. However, when they see recommendations presented with a generic photo or with a celebrity photo, females appear to like the results more than males. The charts also reveal that this reaction is similar for both the qualitative questions and the "would watch" ratings.

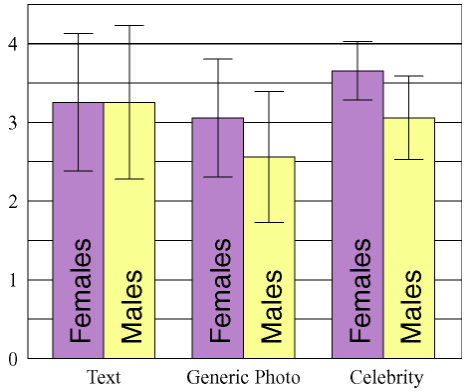

Fig. 2. Averaged results for qualitative questions concerning quality, usefulness, and trustworthiness of the recommender. Error bars display 2 times the standard error of the mean.

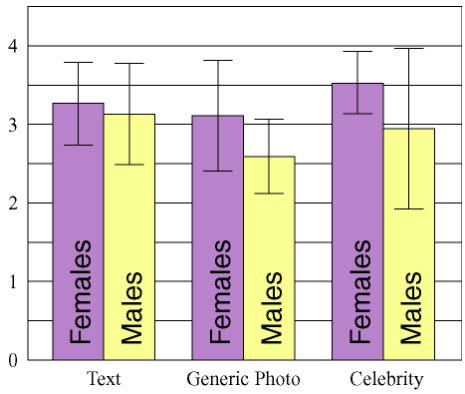

Fig. 3. Averaged results for the "would watch" questions, indicating how likely subjects would watch the recommended TV shows. Error bars display 2 times the standard error of the mean.

We performed a two-way (sex by groups) analysis of variance (ANOVA) on each set of questions. None of the main effects or interactions reached the .05 level of significance. This is possibly due to the small sample size of 5 participants for each sex-group.

Table 2. Averaged ratings for qualitative questions and "would watch" TV Shows divided by group and sex. Subject answers conformed to a 1 to 5 scale.)

	Qualitative p-scores	**Would Watch p-scores**
Groups	0.32	0.44
Sex	0.25	0.14

Conclusion

The results from the pilot study did not match our expectations. We hypothesized that using a celebrity would have a positive influence on users' perception of the recommender. Instead our results hint that same-sex/cross-sex matching between participants and the recommender (as either a celebrity or generic person) might be a more influential feature. Female participants tended to respond more favorably to recommendations presented by a male celebrity than male participants. In addition, female participants tended to respond more favorably to recommendations presented by an attractive, generic male than male participants. This leads us to believe that the relationship between the sex of the recommendation presenter and the sex of the user makes a difference. These findings also support the results of Greene and Adams-Price [6]. They discovered that teenagers have a more positive reaction to celebrities of the opposite sex than to celebrities of the same sex.

Our next step will be to run this same test again, but this time use a female celebrity and female generic photo. It will be interesting to see if this test produces similar results with the male participants liking the female celebrity and generic photo more than the female participants. It will also be interesting to see if the difference between perceptions of males and females is larger or smaller. Are males or are females more influenced by the sex of the recommendation presenter?

While our results about the use a celebrity are not statistically significant, we are not yet ready to abandon our hypothesis. A small sample size might be partially responsible for the weak scores. In addition, we have developed a concept we call "celebrity distance" that forms a scale from "far" to "near". A far celebrity distance might be a name on a piece of paper. A near distance could be a user sitting next to a celebrity, having a conversation. We predict that there is an upper and lower threshold for celebrity distance, where the effect will increase dramatically (see figure 5). With respect to our pilot study, we feel using a celebrity name and a small photo falls a little below the threshold for significantly influencing recommendations.

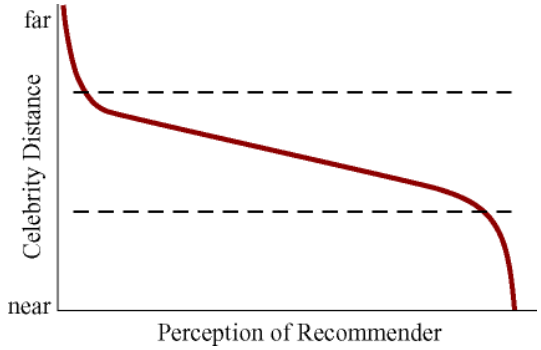

Fig. 4. This figure shows the relationship between celebrity distance and the influence a celebrity has on recommendations.

In addition, we are interested in how other dimensions of celebrity affect users in addition to the celebrity's sex. In the future we plan to focus on both age and race. We feel these additional dimensions might play a role in increasing a celebrity's influence on recommendations. Finally we want to explore the role of user selection. Allowing users to select the celebrity they want to present recommendations may increase their perception of the recommender.

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