



ISPR 2011:

THE INTERNATIONAL SOCIETY FOR PRESENCE
RESEARCH ANNUAL CONFERENCE

EDINBURGH, 26-28 OCTOBER 2011

EDITED BY PHIL TURNER



ISBN: 978-0-9792217-4-3

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Choosing Buddy Icons that Look Like me or Represent My Personality: Examining the effect of the Appearance and Psychological Homophily of Buddy Icons on Social Presence

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Abstract

Buddy Icons are an important form of self presentation in online interactions. People are likely to select Icons that will help them meet interaction goals. This project asks users a series of questions about the Buddy Icon they are currently using. Results suggest that people select Buddy Icons that accurately represent their physical characteristics, some psychological aspect of the self, or both, implying that people are relatively honest in their self presentation online. Further, those who selected more anthropomorphic avatars reported them as more likely to accurately represent the physical self and less likely to represent the psychological aspects of the self. Finally, people feel a stronger sense of identification and higher social presence when represented by Buddy Icons that accurately represent them psychologically and physically.

Keywords--Buddy Icons, avatars, Identification, Self presentation, Social Presence, homophily, anthropomorphism, realism.

1. Introduction

The features of communication technologies affect the strategies for self-presentation chosen by users [1], which will likely influence the sense of social presence with others. People can selectively use affordances of certain media to self present information to an unprecedented number of people [2, 3]. Though online formats allow people to present specific attributes while concealing, altering, or inventing others, this does not necessarily mean online self presentation is less honest or accurate than offline self presentation [4, 5].

During the online self presentation process, people select computer generated visual images to represent them in a variety of online settings including synchronous text-based chat applications called Instant Messaging (IM), where they are called “buddy icons.” All of the most

frequently used instant messaging applications including as AIM, Yahoo Messenger, Google Chat, and MSN Instant Messenger allow users to display or even create a buddy icon of their choice. These Buddy Icons are a widely used [6], form of self presentation with likely implications for the sense of presence.

Presence has been recognized as a key performance goal for many systems and increasing social presence with others

may influence the selection of buddy icons. Social presence can provide insight the feeling that the user is “there” with the other person [7]. Social Presence, or extent to which people feel some sense of connection with, or access to, another person and the salience of interpersonal relationships [8, 9], may be a goal of those selecting certain types of buddy icons, particularly for those who strongly identify with their Buddy Icon are likely to feel more social presence.

This project asked current IM users to evaluate the Buddy Icon they were using at the time of the survey. It uses causal modelling techniques to examine how realistic and anthropomorphic people report their Buddy Icons to be and the extent to which they feel the Buddy Icon accurately represents them either physically or psychologically and how much they identify with it. It tests the relationship between those who report their Icons to be anthropomorphic and realistic on perceived homophily, identification and the extent to which users selected the Buddy Icon to increase social presence.

2. Self Presentation and Impression Management Strategies

Whether online or offline, people self present in ways that they believe will give others impressions of them that will help them fulfill their interaction or relationship goals [10, 11]. Impression Management Theory predicts that individuals manage self presentation based on their goals and understanding of what is expected in a situation (subjective and normative beliefs) as well as the feedback

they receive from others [12]. People seek to establish and maintain favorable but believable impressions and select and present information to reach their goals [13]. They balance their desire to give others the most positive impression of themselves with the need to present the authentic self, because it is the presentation of the authentic self that develops intimacy [4], and people can do this online and offline.

Self-presentation strategies will vary with the communicator's goals and perceived audience for the message [14] and this process is not the same across all media, individuals, or contexts [11]. In choosing to use a medium, people have made their first choice about how to self present and expressed an implied belief that the medium can help them meet their communication and interaction goals.

3. Adapting Self Presentation strategies online.

People have continued to express themselves offline through clothes and hairstyles while integrating the many

facets of the Internet and communication technologies to their self presentation strategies [2, 15, 16]. Face-to-face and online communication frequently occur in tandem and many social networking users reported using online systems to enhance or maintain offline friendships [17].

Communication media have unique features used for self-presentation beyond that available offline [1, 18, 19]. People adapt their self presentation strategies to meet the available features of the medium and interaction [2, 20, 21],[6], [13, 22]. Even when synchronous, computer mediated interactions are not as spontaneous as face to face. Thus, computer media allow more planning time for users to consider what to say or how to represent themselves [2, 13, 21, 23, 24] [25], which may facilitate a controlled form of self presentation where users can exercise precise identity management allowing self presentation to be more subject to censorship or embellishment [1, 4]. This may explain why communication partners are rated as more physically and socially attractive in online interactions where senders are not visible to receivers than when senders are visible [26].

Asynchronous communication and leaner media may give communicators greater control over the information

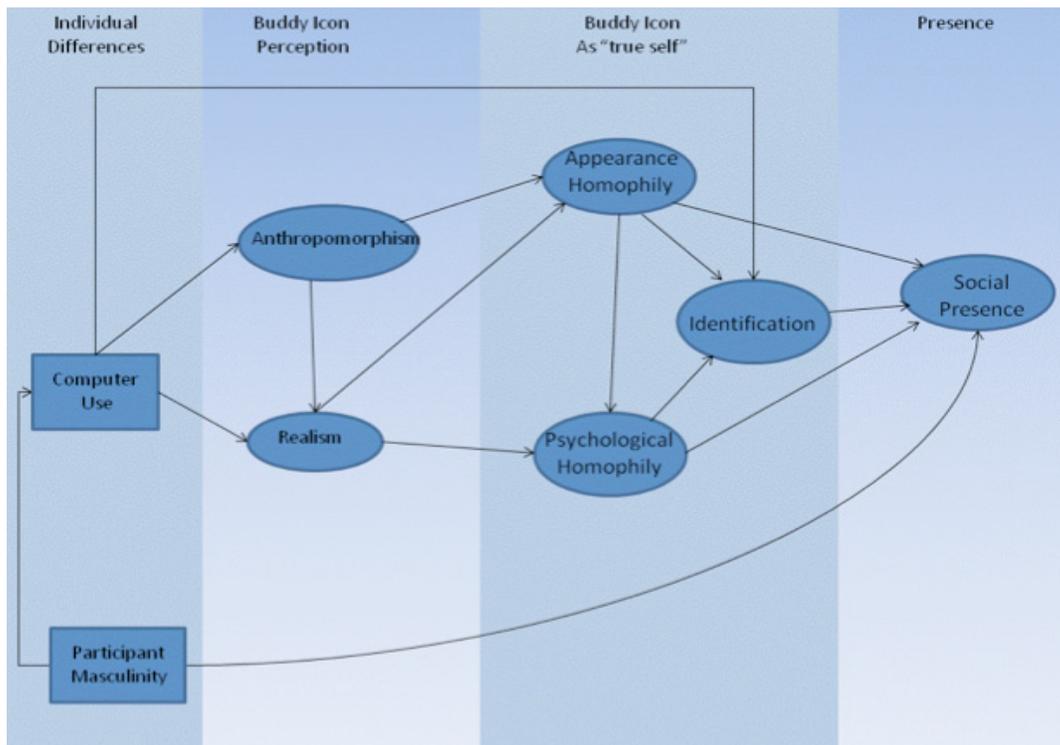


Figure 1 Predicted causal Model

others have about them, though they can force them to use more obvious methods of communicating subtle cues [1, 2]. When people adapt their strategies effectively, text or other “lean” media can be used to foster higher levels of self-disclosure [27] and liking than face to face communication or computer media with more cues [23].

Online self presentation and information sharing (like blogs and web pages) have been described as ‘staged performances’ in which an identity or aspects of an identity can be selectively targeted for presentation [18, 28]. Targeting messages and information to particular audiences becomes harder online where the audience is frequently ambiguous or mixed and the information stays online and is usually available to a wider audience [1, 18, 19]. Social networking pages, home pages and blogs can be designed with a specific audience in mind but information stays online and is generally available to a wider audience so users likely modify their presentation to be appropriate for multiple audiences including different groups of family, friends, coworkers, acquaintances and even strangers at undetermined times in the future. Also, while Facebook and other social networking sites allow users to portray an idealized version of the self through their profiles, they also allow ‘random’ individuating information and information provided by friends on profiles that is not in their control [2, 19], which likely influence perception as well.

3.1. People are the Same Online and Offline

While people may use different strategies in self presentation, it does not mean that people are presenting completely different selves. People may opt to present different parts of their identity in different contexts or with different people, but this is true offline as well. In fact, the unique parameters of online communication have the potential to result in more open and honest self-presentation than in offline environments [4].

Thus, Impression Management Theory can also be applied to online communication recognizing that the increased control over self-presentation online may allow for more selectivity and self-censorship and a wider variety of strategies for exchanging information about the self [2], [28], [1, 13]. It seems people have a desire to present honest representations of relevant pieces of themselves online [4, 29]. Bargh, McKenna and Fitzsimmons [29] found that users reported that online settings allowed them to represent aspects of their true selves they felt unable to present in face-to-face interactions.

Self-presentation strategies occur differently across contexts and several key variables serve to determine self-presentation strategies, including features of the medium, individual differences, contexts, and motivations [25], [10, 14, 30]. This has been shown to apply to the selection of avatars, or Buddy Icons, which also varies across contexts and individuals [31]. Figure 1 shows the predicted causal relationship between computer use and perceptions of avatars including anthropomorphism, realism, psychological and appearance homophily found in previous research [32] and extends the research to include a prediction that all of these variables will increase identification with the Buddy Icon and social presence as discussed in the next section.

4. The Role of Buddy Icons in Identification and Social Presence

As with any other form of self presentation the types of Buddy Icons users select, and the reasons for those selections, is complicated. The highly customizable nature of avatars, or graphical representations of the self online, provides not only a virtual image through which the user interacts with others, but also allows users to create a visual identity that represents elements of the self to others [5, 7, 33], and Buddy Icons are a type of avatar. Buddy Icons, or avatars, are a widely used [6], form of self presentation and provide a way to examine self presentation of identity and the adaptation of the process when it moves online [33].

Self presentation is the component of the identity construction process where people communicate information about the self to influence the impressions being formed of them [34]. Offline, people use language, clothing choice and behaviours [35], and online people use screen names, text and Buddy Icons [36] for this part of the process. The use of Buddy Icons, or any other type of visual representation, can enhance engagement with the interaction and may make interactions seem more 'social' [37, 38] and make the partner more salient, which will likely increase social presence.

In some ways, Buddy Icons are like the physical body offline in that they serve as the visual form of self presentation of identity and representation of the person. They provide clues to the user’s personality and physical characteristics [33]. Communicating when a buddy icon, or avatar, serves as a proxy for the self influences how people are perceived within those interactions [32, 39], and can influence their sense of self as well [33, 40].

In other ways they are not at all like the offline body because they are consciously selected and easily changed

and are part of the medium chosen for an interaction. Users can instead be freed from traditional bodily [41], which can open up new ways to experience and represent the self [42]. Buddy Icons do not limit people to selecting clothes or hairstyles but instead allow users to select the entire visual image presented to others. Given the wide range of choices users have, it is surprising that users report a preference for avatars or buddy icons that are realistic, look like them and accurately represent something about them [30], though individual differences influence this selection, as discussed in the next section.

4.1. Individual Differences Influence Perceptions of Anthropomorphism and Realism

The process of self presentation will be influenced by individual differences, the interaction partner, the user's motivations, the context of the interaction, and different computer systems in unique ways. The user's perception of a Buddy Icon will influence the likelihood he or she will select it. Previous research has shown that males report slightly higher levels of IM use than females, and those with more IM use differ on perceptions of realism and anthropomorphism, which influence homophily (perceived similarity to the self) and the likelihood one will select an image [32, 43]. Thus, Figure 1 predicts that those with more IM experience and computer use have different perceptions of technology (see also [44, 45]), resulting in different perceptions of their Buddy Icons.

Specifically, Figure 1 predicts that those spending more time with IM are likely to have different standards for anthropomorphism. Anthropomorphism is the extent to which an image is perceived to resemble human characteristics and having human morphology [32, 46, 47]. Therefore, objects such as clothing and accessories, which lack visual human-like features should be perceived as having low visual anthropomorphism. The use of IM is predicted to influence the extent to which an image is perceived to be anthropomorphic because it will make them more likely to recognize the anthropomorphic traits and to infer sociability in icons. Those frequent users of IM are likely to select images that they perceive to be more anthropomorphic than those using IM less frequently, explaining the positive predicted path between IM use and anthropomorphism.

The next variable in the model is perceptual realism. Perceptual realism of digital stimuli sometimes understood as the rendering quality of the image itself. In that sense, it would range from cartoon like to photorealistic, though some contents can influence perceptions of realism as well [46, 48]. Certain images

may be photorealistic but not able to exist in the offline world as they may portray something from a fantasy world or imaginary locations or characters. Realism is defined here as something probable, or likely to exist in a non-mediated context [49, 50]. Previous research has shown that perceptions of anthropomorphism influence perceptions of realism [32, 43] and that people prefer avatars where the levels of realism and anthropomorphism are complementary [48, 51]. This leads to the prediction that people prefer more anthropomorphic avatars when they are higher in realism, though previous research has suggested that the expectations for realism may be higher when evaluating anthropomorphic avatars [51, 52].

Finally, Figure 1 predicts that those who use IM more will report different perceptions of, and connections with, their Buddy Icons. People who have spent more time, and possibly money, creating or finding their Buddy Icon are likely to feel more connected to it and identified by it. Further, those who spend more time on IM have more experience interacting with Buddy Icons selected by others. Thus, we predict a negative path between computer use and realism because people with more IM use have seen and engaged with a wider variety of avatars and perhaps have spent more time thinking about possible avatars to select. This will likely cause them to have a higher standard for what seems realistic and make them less likely to say that an image is high on realism. Further, time with IM will likely make the feel more connected to it and more to report that it represents something essential about them, so they are also predicted to feel a higher sense of identification with the Icon than less frequent users of IM.

The next section examines the predicted relationship between realism, anthropomorphism and homophily. All of these variables have been shown to predict the likelihood that one will select an avatar [32, 52] so are predicted to follow the same pattern when people are evaluating buddy icons or avatars they have already selected.

4.2. Perceived Anthropomorphism and Realism Influence Homophily.

As discussed above, individual differences will influence people's perceptions of and likelihood to choose avatars as well as their perceptions of those they are representing [48, 51, 53, 54]. As shown in Figure 1, it is the perceptions of realism and anthropomorphism that influence homophily [32, 43], explaining the direct and indirect predicted paths from anthropomorphism and realism to both appearance and psychological homophily.

These predictions are explained in this section.

People are predicted to select homophilous Buddy Icons. Homophily is the degree of perceived similarity to the self and one can be either physical or psychological [55]. Physical homophily refers to a perceived similarity of physical appearance. Psychological homophily refers to a perceived similarity of attitudes or beliefs. Given that Buddy Icons and avatars are used for self presentation of identity [56], it is likely that people will select those that they perceive accurately represent some aspect of them and how they want to be perceived. It is thus possible that users will select icons that are high on homophily and that represent important elements of their physical and psychological identity that they want to present to their interaction partners, but the model predicts that realism and anthropomorphism will predict perceptions of homophily.

Anthropomorphism is likely to directly predict physical homophily because those that select icons that are highly anthropomorphic are likely to want to represent the physical aspects of the self during the interaction. Essentially, when users pick human like avatars, they are predicted to select those that they feel looks like them in some way. It is likely that appearance homophily will strongly influence psychological homophily.

Anthropomorphism is predicted to only indirectly predict psychological homophily. Psychological homophily is likely to be symbolically displayed by less anthropomorphic avatars such as objects, accessories, or symbols, which lack human-like features. Those Icons that are lower in visual anthropomorphism are likely to be selected because of the symbolic meaning ascribed to the objects by users [57]. This is why the model predicts that users selecting less anthropomorphic avatars such as objects do so to emphasize psychological homophily.

As explained above, realism is predicted to be influenced by perceptions of anthropomorphism and to directly predict both psychological and appearance homophily. Images that are highly realistic, or authentic or real are likely to be more accurate in representing the self and to increase perceived identification as well as sociability or social presence as discussed in the next section.

4.3. Those selecting Homophilous Avatars will feel more Identification and Social Presence

Online self presentation includes choice of medium, communication topic and disclosure strategies as well as the choice of avatar or Buddy Icon [33]. The use of Buddy Icons in Instant Messaging is an example of how

computer technology can allow users to present their identity to an unprecedented number of people [2, 3]. The previous section explained why users are predicted to select Buddy Icons that are high on homophily. This section explains why those selecting Buddy Icons that are high on homophily will also feel more identification and social presence.

Impression Management Theory predicts that individuals manage self presentation based on their goals and understanding of what is expected in a situation (subjective and normative beliefs) as well as the feedback they receive from others [58]. Similarly, the social influence model [59] suggests that decisions regarding media selection are most often made through judgments based on the perceived social norms of the group, rather than the prescribed methods.

Social presence researchers have argued that media selection should be based on the levels of interpersonal involvement needed in the discourses or interactions taking place [9]. Social Presence is a construct dedicated to understanding the perceived or intended connection between people interacting via telecommunication systems [8, 9, 13, 59]. Social presence is generally understood to refer to the sense of salience of others in the interaction and the salience of the relationship more generally [9, 50]. It is likely that people will select media and use self presentation strategies to increase social presence, or the salience of the interpersonal relationships and people with whom they interact [38].

Given that selecting Avatars and Buddy Icons involves media selection and is a type of self presentation, people should select Buddy Icons that will facilitate the goals of the interaction and their self presentation strategies. It is thus predicted that people who select Buddy Icons for their IM interactions that accurately represent them either physically or psychologically, or both, will feel more identification with the Buddy Icon. Essentially, if people feel an Icon looks like them or represents their personality or ideals, they will more strongly identify with it.

Further, those who select more homophilous avatars will feel more identification with their Icons and will thus select Icons they feel represents them and will help others understand them. We predict that those who rate the Buddy Icons they are currently using as high on homophily and identification are more likely to select Buddy Icons to increase the sense of social presence.

5. Methodology

5.1. Participants

The 93 participants in this survey were recruited from undergraduate communication classes at a large public university in the United States. They ranged between 18-25 years of age and were 52% male and 48% female. Seven cases were excluded from the analysis due to errors in survey completion, leaving a total sample size of 86.

5.2. Measurement Instruments

All scales were evaluated for acceptable reliability, and factor structure using confirmatory factor analysis. Item quality was assessed with confirmatory factor analysis (CFA). Three criteria were imposed on items: homogeneity of content, internal consistency, and external consistency. Internal consistency was examined through standard score coefficient alpha reliabilities. Items were considered acceptable if they loaded at a minimum of .5 on their primary structure only. Items that loaded higher on other factors in the analysis of parallelism were deleted from the scale.

Realism was measured using a nine item 7-point scale adapted from [32] ($\alpha = .90$). Items included: "This icon is real", "This icon is unreal", "This icon has cartoon-like features", "This icon is photorealistic", "This icon is natural", "This icon is artificial", "This icon is realistic", and "This icon is authentic".

Anthropomorphism was measured using a scale adapted from [32] and included a six item 7-point Likert-type scale, with 4 items remaining ($\alpha = .85$) after tests of reliability and validity mentioned above including: "This icon looks human", "This icon has human features."

Homophily was measured two modified subscales measuring appearance homophily and psychological homophily [60] using 7-point Likert-type items. Appearance homophily ($\alpha = .84$) was measured using the items "This icon is similar to me", "This icon looks like me" and "This icon resembles me". Psychological homophily was measured with 6 items including ($\alpha = .89$): "This icon represents my attitudes", "This icon represents my financial situation", and "This icon represents my values."

Identification [61] with the Buddy Icon was measured using a scale consisting of seven items ($\alpha = .89$) on a 7 point scale (not at all to very much). Items were: "I relate to this image, This image represents my sense of humor, I identify with this image, This image

represents something in me, This image has meaning for me, and This image represents my social status.

IM use was measured with one Likert-type item asking how frequently the participant used Instant Messaging (1=never, 2=almost never, 3=occasionally, 4=a lot, 5=constantly).

The degree of social presence with Buddy Icons was measured using modified items from [9]. The nine items from this scale were reworded to assess to the goal in selecting the buddy icon. The prompt "This buddy icon..." was given with the following 7-point items: "Gives other a good idea of who I am", "Helps others better understand my message", "Provides a sense of realism", "Helps others better understand me", "Makes me seem more real", "Makes it seem more like my communication partner and I are in the same room", "Makes it seem more like we are having a face- to-face conversation", "Would help me persuade others", and "Would allow others to know me well, even if I only met them online". Following confirmatory factor analysis, item eight (persuade others) was removed, leaving eight items that demonstrated an alpha reliability of .90.

5.3. Procedure

Participants were contacted via email and asked to provide a copy of the Buddy Icon they were currently using in their IM interactions as an email attachment, and were asked to fill out an online questionnaire. The online questionnaire asked to evaluate the Buddy icon they had provided in addition to some demographic questions.

6. Results

The predictions discussed above and presented in Figure 1 were tested using the causal modeling program PMOD [62]. The overall goodness of fit of this model was $RMSE = .12$, $X^2(13) = 14.58$, $p = .33$. In addition to a poor fit of the model, there were large errors between what was obtained and predicted and several significant missing links were reported. To address this, three non significant paths were deleted. These were between Appearance Homophily and Identification and between IM use and both Identification and Realism.

In path modeling, the missing paths are important for improving fit, so 5 paths were added to the model to address the large and significant errors reported by the path analysis. The added paths were from participant sex to Anthropomorphism, from IM use to both Appearance Homophily and Social Presence, from Anthropomorphism to both Psychological homophily and identity. The

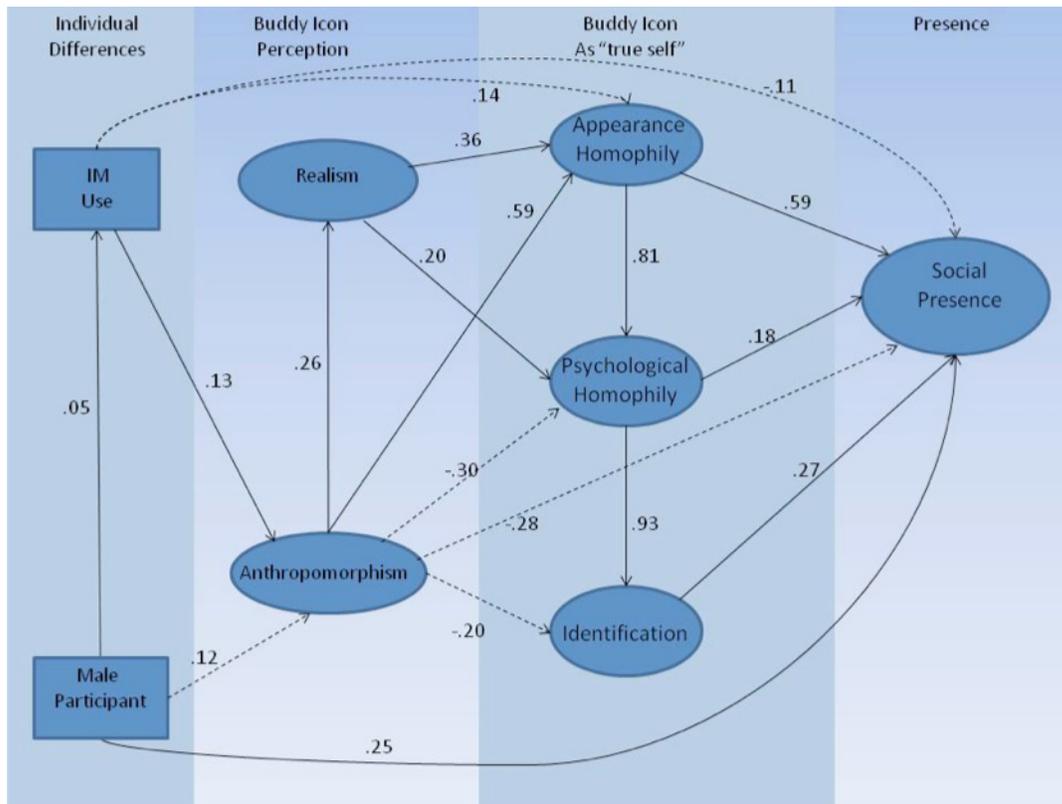


Figure 2 Respecified Model with dashed lines for added paths

respecified model shown in Figure 2 reflects those changes, and is a good fit with the data $RMSE = .07$, $X^2(10) = 3.59$, $p = .96$, with added paths depicted with dashed lines.

Overall, the results were consistent with predictions and the goodness of fit of the respecified model was acceptable with no significant errors. Most of the added paths involved creating direct paths where only indirect paths had been predicted and many of these paths included anthropomorphism suggesting this variable has a direct effect on more variables than predicted and this is worthy of examination in future research. This section will examine the results with respect to the predicted model and implications for theory development and future research.

Participant masculinity did predict IM use, this path was very small (.05). This may reflect recent trends showing that males and females are using computers and the Internet with about the same frequency, though they are using them for different purposes. Along these lines, males were more likely to report that they selected their icon to enhance social presence and were more likely to

report that their Icon was higher on anthropomorphism than women. This may be explained by previous research showing that males and females differ in the types of avatars they perceive as anthropomorphic [32], or it could reflect a difference in the types of avatars males and females are selecting and future research on this is underway. IM use also directly predicted the likelihood that one would select an Icon that represented them psychologically, and negatively predicted social presence, though these paths were not predicted.

The more frequent users of IM rated their Buddy Icons as more anthropomorphic as predicted. Interestingly, the predicted path directly from IM use to realism was not significant so was removed from the model. There is only a direct effect through anthropomorphism. These results suggest that people spending more time with IM select Buddy icons they perceive to have higher social potential. The prediction that more frequent users of IM would feel more identification with the Icon was only indirectly supported. There was not a direct path as predicted, but there is an indirect path through anthropomorphism. One unpredicted

direct path was from anthropomorphism to identification, implying those selecting more anthropomorphic avatars felt less identification with their Buddy Icons, except with mediated through homophily.

The model is consistent with previous research showing that perceptions of anthropomorphism influence perceptions of and expectations for realism, indicating again that those wanting an anthropomorphic image also want it to be high on realism. Also, both anthropomorphism and realism influence perceptions of homophily, though this projects differentiation between physical and psychological homophily and its effect on identification adds to our understanding to this process.

The predicted paths from anthropomorphism to appearance homophily and realism were present, consistent with predictions that those who do select buddy icons that are high on anthropomorphism are likely to select icons that have some similar physical characteristics to the self. As explained above, it was predicted that anthropomorphism would increase appearance homophily but have no effect on psychological homophily because it was thought that those selecting highly anthropomorphic avatars would select those that resemble them physically and those who selected avatars high on psychological homophily would select objects or other things that would be less anthropomorphic. Interestingly, this same process is reflected in the negative paths added from anthropomorphism to psychological homophily, identification, and social presence. The presence of these unpredicted negative paths suggests it is even more likely that those who chose an anthropomorphic image will do so because it is physically similar to the self and those are less likely to represent them psychologically. Further, it suggests that those selecting images that look like them identify with them less and are less likely to have selected their Buddy Icons to enhance social presence.

Interestingly, the direct predicted path from appearance homophily to identification was not significant. This relationship is indirect through psychological homophily, likely because of the negative relationship between identification and identification. Finally, those who selected buddy Icons that they identified with, or that were either physically or psychologically homophilous felt more social presence.

Conclusions

This project asked IM users to evaluate the Buddy Icons they were using at the time of the study to examine their use in the process of Impression Management online and results are consistent with predictions based on the

theory. People seek to establish and maintain favorable impressions and select and present information to make these impressions believable to the ‘audience’ or communication partner. The goals of self presentation and impression management are similar online and offline but the features of the interface used in the interaction will alter how that information is transmitted and perceived and this process influences social presence.

Most users reported that their Buddy Icon accurately represented them either psychologically, physically, or both. This is consistent with previous research showing that people are relatively honest and accurate in their online self presentations, at least when it comes to the Buddy Icons they select. Future research should continue to examine the boundary conditions of this finding and whether people do feel that Buddy Icons in online settings allow them to present aspects of their true selves they are unable or unwilling to present offline [29] This also does not answer the question of how people adapt the Impression Management process in light of the fact that information stays online across audiences and over long periods of time. Some important questions along these lines is how frequently users select anthropomorphic avatars, or how often they alter the Buddy Icon they select for representation across different contexts or with different interaction partners, and research on these questions is currently underway using the Buddy Icons selected for this project.

Finally, the research supports the prediction that those using Buddy Icons that resemble them physically or psychologically felt a much stronger sense of identification with them and a higher level of social presence. This is consistent with both Impression Management Theory and predictions of social presence scholars arguing that people will manage self presentation and their media selection and use to best improve the relationship and to meet the interaction goals, to manage impressions. It shows that people want to select media and use it in ways that will be consistent with their understanding of the social norms [63] and to self present in ways that are expected and socially appropriate [12].

Social presence was predicted by identification with the Buddy Icon as well as both appearance and psychological homophily. It thus seems to be a key variable in understanding why people select their Buddy Icons, and how they use them to represent the self and express identification. Future research should examine the extent to which this explains people’s adaptation of self presentation in other online interactions and media as well.

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