

Be Me, or Be Mii?: A Study of Self-Presentation and Interaction in the Miitomo Mobile Application

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ABSTRACT

In this study, we consider what Nintendo's widely downloaded Miitomo mobile application, which simultaneously promotes non-idealized self-fictionalization and authentic self-presentation, can suggest to us about self-presentation and technology design. Ten groups of four friends each (N=40), all novice users, engaged with Miitomo for one week, and completed supplementary pre- and post-use surveys. The data were analyzed to assess the extent to which participants' engagement in Miitomo reflected their "real life" selves and correlated with in-app and "real life" features, respectively. Although most participants believed that their behaviors within the app accurately reflected their "true selves," we found that *in-app* traits generally correlated more strongly with Miitomo engagement patterns than did users' "real life" traits and qualities. We discuss implications for social network and online community design, and propose future plans to study authenticity and self-distancing in online self-presentation.

Author Keywords

Self-presentation; self-distancing; fantasy; authenticity; personality; mobile application; social networks.

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION

Miitomo, the game company Nintendo's first mobile app, first launched in Japan and then gradually released worldwide in the Spring of 2016, enjoyed high early success, quickly becoming the 13th most popular social app in Japan and, as of April 2016, had more than 10 million users [12]. It also showed early evidence of success, with average retention exceeding the 3-7 days typical of mobile apps [9]. With its juxtaposition of fantastic and realistic elements, and its simultaneous pull for fictionalized self-distancing and authentic, non-idealized self-disclosure, the app merits further observation from an HCI perspective.

In Miitomo, each user is represented by and interacts through an animated, talking "Mii," a free-form digital avatar. Users begin by setting up their own Mii and answering a series of questions about themselves; other users can later see/hear one another's responses when their Miis "converse." The app allows users to answer questions posed by their own Miis or others' Miis, hear responses to questions from other Miis, comment on or "heart" (i.e., "like") these responses, and change their Miis' clothing.

As we will discuss in more depth momentarily, some elements of the app encourage users to self-fictionalize, but others pull for more authentic self-presentation. In this study, we sought to understand how this interplay of authenticity and fantasy/self-distancing plays out in novice Miitomo users' self-presentation and interactions. Our two primary research questions were:

- To what extent are participants' Miis distinct from their "real selves"?
- To what extent do app-specific and "real life" features correlate with engagement in the app?

RELATED LITERATURE

Miitomo's design lies somewhere between a social network and a game, and we therefore consider literature about self-presentation in a) social networks and b) avatar game contexts. Research of presentation online has consistently found that people are motivated to self-present authentically. For example, in online social settings that involve avatar representation, such as instant messaging, people generally self-present to show their authentic personality and/or appearance [6]. Research has shown that we can reliably predict people's personality from their Facebook profile photos [4], that friend groups present their actual, non-idealized selves in social networks [2], and that individuals self-disclose differently on social media depending on their personality [10]. In fact, people may express their true (not ideal) selves better online than face-to-face [3], although CMC may increase self-awareness and perceiving others as self-centered [7]. Studies have explored authenticity versus self-fictionalization via self-idealization. In one study, users that engaged with avatars representing their ideal future physical selves engaged in more healthy behaviors [5], but other studies have shown that idealized self-fictionalization can impede expression of the "true self," such as in online dating contexts, where there is pressure to present oneself positively [14]. Due to

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the unique design features of Miitomo, in the present study we depart from previous work by focusing on authenticity versus *non-idealized* self-fictionalization.

As suggested by theory and research on the Proteus Effect, [16], users assume the characteristics or traits of their avatars. For example, those embodying a reportedly more attractive avatar were more willing to self-disclose, and those with taller avatars self-presented more confidently. Avatar choices may not align with authentic personality or appearances; examples from the literature on role-playing games have found that players often purposefully choose characters with traits and appearances that diverge from their “real life” selves [17], but that in taking on “other” roles, players also incorporate aspects of their true selves, or, conversely, the role-playing and true selves merge as players assume aspects of their characters in their daily lives [15]. Yet Miitomo differs from such examples in that 1) the “role” you assume is intended to be your own self and 2) while still remaining “me,” users are urged to present themselves in fictional, largely non-idealized ways.

AUTHENTICITY AND FANTASY IN MIITOMO

We present here a more detailed discussion of the Miitomo platform to abet understanding of the dynamic between the authentic self and the non-idealized fictionalized self in Miitomo’s design. The Miitomo platform encourages you to view your Mii as the *you* in many respects. As a new Miitomo user, you can allow the app to automatically create a Mii for you based on their photo, and are instructed, “Choose from a wide library of facial features to make your Mii look just like you” [18]. The app prompts you to set profile features, including five voice dimensions (speed, pitch, depth, accent, and energy) and five personality dimensions (manners, movement, individuality, attitude and expression), chosen using sliders on an 8-point scale.

Yet in the app, it is often unclear whether you should view your Mii as self or other. When you first encounter your Mii, it walks up to you and greets you with, “Oh, hi! How’d you get in? Oh, you’re me! Or I’m you—same thing.” As you continue with the app, your Mii speaks with other users as your representative, but also communicates with you. You may observe your Mii talking to another Mii, ostensibly without your control, but when you click on the Mii, you assume its role and engage directly with the other user.

The 546 distinct questions that users encountered in our study encompassed a variety of questions about the self, including food preferences (25 questions), and interests in movies, books, music or television (44 questions). Some questions seem designed to elicit more intimate or meaningful information about an individual, such as “What’s the biggest adventure you’ve ever had?” or “Tell me about the most nervous time of your life!” Of the 36 questions promoted by researcher Arthur Aron [1] to promote interpersonal closeness, we found 15 questions in our Miitomo dataset that were highly similar. For example,

where Aron asks, *Would you like to be famous? In what way?* Miitomo asks, *If you became a celebrity, what would you want to be famous for?* These questions seem to encourage users to sincerely self-present in the app.

However, questions also incorporate elements of fantasy; 56 of the 546 questions in our study were conditional questions, asking users to consider future or hypothetical circumstances. Several of these involved fantastical scenarios, such as freezing time, combining any two animals into the perfect pet, or being sucked into the TV. Users can also dress their Mii in various outfits, including bizarre options like hot dog costumes and banana suits. The Miis are also cartoonish in both appearance and action, with desexualized bodies that do not vary by gender. When relating a response or comment involving love or affection, a Mii’s eyes might suddenly transform into hearts. When expressing excitement, the Mii may produce a shower of confetti out of thin air. Similarly, the customizable voice options are cartoonish and robotic rather than lifelike. Where prior literature has studied contexts in which users may feel persuaded to present idealized selves, the Miitomo app could be said to *discourage* idealization, leading users to self-present in surreal or even downright ridiculous ways.



Figure 1. Photos of the authors’ Miitomo Mii

Nintendo’s Miitomo design intentions seem purposefully ambiguous, flirting equally with authenticity and playful self-distancing. As producer Sakamoto explained in an interview [11], “It’s a combination of this feeling that you can speak indirectly, and this realistic feeling that this is the real person...” It is not immediately clear to what extent the Mii is intended to be the “real self” or some playful, fictionalized version of oneself.

METHOD

For this study, we recruited 10 groups of four novice Miitomo users each (N=40) to engage with the Miitomo application for one week on their mobile devices. We recruited undergraduate and graduate students (aged 18+) to sign up in friend groups of four. We focused on novice users so as to understand emergent usage patterns in Miitomo; high Miitomo attrition rates [19] further informed this decision, suggesting that few Miitomo users reach “expert” status. Participants ranged in age from 20 to 30, with 20 females and 20 males. Thirty-seven were university students, and English was not a primary language for 27. Twenty-seven participants came from India, 6 from the US, 5 from China, and 1 each from Colombia and Indonesia. Groups tended towards country homogeneity; only 2 of the

10 groups represented more than one native country. However, most groups' participants did not share the same primary language; there were only 2 language-homogenous groups. Groups were mostly gender diverse, with 2 all-female groups and 1 all-male group.

After signing consent forms in person, participants completed the Interpersonal Solidarity Scale [13] for each of the other three participants in their group. This 20-item validated scale measures interpersonal closeness, and asks users to rate statements on a 7-point Likert scale, from strongly disagree (1) to strongly agree (7). It includes statements such as, *This person has a great deal of influence over my behavior, I trust this person completely,* and *I dislike this person*. Each participant received a custom study ID, group ID, and login email for the Miitomo app, which we had pre-linked to the mynintendo.com website. Each participant downloaded Miitomo, created their Miis using the camera feature, and “friended” one another. They were required to log into the Miitomo app at least once a day (no time limit was imposed) during the weeklong study, and were forbidden from adding friends outside the four-person study group, sharing activity on social media, and making paid in-app purchases.

After one week of app usage, participants deleted the Miitomo app from their devices, and completed an online post-questionnaire. This questionnaire again included the Interpersonal Solidarity Scale, as well as the Big Five Inventory [8]. The Big Five are a set of dimensions accepted and referenced widely in psychology research to describe the key characteristics of personality: openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. This inventory asks users to characterize themselves according to 44 different Likert scale items, from 1 (disagree strongly) to 5 (agree strongly). Examples include *I am someone who... is outgoing, sociable; tends to find fault with others; is inventive*. Participants also filled out a short demographic questionnaire and answered follow-up questions—both numeric and open-ended—about their experience in Miitomo, including to what extent they felt their responses in Miitomo showed their personality and values. Upon completion of the survey, participants retrieved their study compensation (\$25 cash).

Miitomo does not yet offer a data download feature for users, so we set up a simple MySQL database and entered all the app information. Our participants encountered a total of 546 distinct questions, and gave 1,591 answers, 1,227 comments, and 438 hearts. We obtained scores for the Big Five and the Interpersonal Solidarity Scale by summing Likert scale answers, reverse coding when necessary, following the instructions in [8,13]. We used the Miitomo scale sliders to score Miitomo personality and voice traits, and translated both in-app Miitomo traits and the Big Five to a scale of 0-10 for smoother comparison and inference.

FINDINGS

To What Extent are Participants' Miis their “Real” Selves?

Miis as Reflective of True Selves

For the most part, participants reported that their Miis authentically reflected their “true” personality and values. We asked participants two questions: “To what extent did your responses in Miitomo show your true personality [values],” using a 5-point Likert scale from 1 (not at all true) to 5 (extremely true). On average, participants reported that they answered questions honestly, in a way that showed their personality (average = 3.9; SE = 0.1), and to a still relatively high, but slightly lesser extent, their values (average = 3.4; SE=0.2). In open-ended questions about how similar or dissimilar to their Miis, 36 of 40 participants felt their Miis were quite similar in appearance, personality, or both, and 38 of 40 admitted to modifying their Mii over the course of the week to increase similarity. As one participant stated, “For an animated avatar, I feel like my Mii looks fairly similar to how I look in real life, albeit a bit exaggerated. I set my Mii's personality to what I believe is fairly accurate of my actual personality, so presumably we're fairly close there” (p2303).

Distance Between Self and Mii

At the same time, participants engaged in aspects of fantasy or fiction that created a separation between their Mii self and their “true” self. Several spoke of choices in the app that were completely contradictory of their “true” selves. For example, one participant said he aimed for authentic skin color and personality, but “For voice and delivery I just picked something that was ridiculously opposite to my avatar (just for fun)” (p2304). Within self-fictionalizing choices, we saw hints of playfulness and even self-ridicule rather than self-idealization. Many participants chose outlandish clothing, and sometimes engaged in fantasy even when responding to straightforward questions. For example, one participant answered “Where are you from?” with, “Planet where unicorns live!” (p2504). Fantasy appears to have coexisted with sentiments and perceptions of authenticity and honesty.

Lack of Connection Between Miitomo Traits and Big Five

Despite reports of authenticity, we did not find significant correlations between the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) and the “Miitomo Five” personality traits (manners, movement, individuality, attitude and expression). Although these two sets of traits are not identical, we might expect to see positive correlations between extraversion and either expression, attitude, or individuality, or openness and expression, and a negative correlation between agreeableness and attitude. However, running a series of simple linear regressions, we found no significant results. Thus, despite participants' perceptions of Mii-self similarity and authenticity, it appears there may have been a separation between the

“true” self and the Miitomo self. We explore this phenomenon further in the following section.

To What Extent do App-Specific and “Real Life” Features Correlate with Engagement in the App?

We ran simple linear regressions to investigate whether any of the independent “real life” and in-app traits were significantly correlated with in-app engagement outcomes (number of and average length of answers given, number of comments and hearts made on other participants’ responses, and number of clothing changes). From Table 1, it appears Miitomo-specific voice and personality traits (expression, individuality, speed and openness) may better predict levels of app engagement (e.g. number of questions answered, comments given, and outfit changes made) than “real life” traits. The only Big Five trait that emerged as a significant predictor—openness—correlated counter to intuition, with more open individuals expected to provide *shorter* answers.

	BFI	outcome	trait	coeff	p-val	F-stat	adj R ²
Miitomo	Voice	ans length	open	-4.31	0.03*	5.23	0.10
		# answers	expr	7.88	0.03*	5.21	0.10
		answer length	speed	3.01	0.04*	4.64	0.09
		# comment	speed	17.41	0.00*	14.77	0.26
		# outfit changes	indiv	1.02	0.03*	4.99	0.09
			expr	1.26	0.02*	5.51	0.10

Table 1. SLR results, 38 dF, for Big 5 (BFI) & Miitomo-specific traits. Traits normalized to 0-10 scale.

We also looked at interpersonal closeness to see if this real world quality affected app usage. Although we did not see any effects looking at either average closeness per person or per group, we found a significant effect in dyadic relationships, but not in the direction anticipated. For both the number of comments and hearts given to specific individuals within a group, we found a small but significant negative correlation with the Interpersonal Solidarity Scale (ISS) score (COMMENTS: coeff: -0.13; $p = 0.025^*$. HEARTS: coeff: -0.095; $p = 0.002^*$). This suggests that participants were *more* likely to comment and heart in their weaker friendships. To further explore this finding, we compared relationship closeness from the pre- and post-surveys. We found that average group closeness actually decreased after one week of Miitomo use. However, this finding was moderated by the level of initial closeness; those groups for which average closeness declined over the week had, on average, higher initial closeness than those groups for which closeness increased (confirmed with a Welch 2-sample t-test, $t=-2.67$, $df=116.7$, $p = 0.009$). Thus, introducing elements of self-fictionalization may have greater intimacy benefits for less well-acquainted groups.

DISCUSSION

In line with the Proteus Effect, participants appeared to assume certain attributes of their Miis while engaging with the app, with in-app traits emerging more often as significant predictors of app engagement than “real life”

traits. At the same time, most participants reported that their Miis accurately represented their true personalities and values, and that they felt quite similar in appearance and personality. We also saw that relationship closeness had a moderating effect, with less close groups and individuals engaging more actively with one another and growing closer to each other after using the app.

These findings contribute to existing bodies of research on the Proteus Effect and online self-presentation, and offers insight into how people engage in technology-mediated circumstances that ask users to present themselves using authenticity as well as fantasy/self-distancing. Where previous research has illuminated the dynamic between authenticity and self-idealization in online context, this study has shown that users can feel they are authentically self-presenting while simultaneously actively engaging in non-idealizing self-fictionalization. It also suggests new directions for online social design. For example, elements of playful fantasy and self-distancing might assist with online community onboarding, or meeting new people (e.g., online dating). “Pop-up” sub-networks specifically designed for short-term, immersive use might serve a need to stimulate self-disclosure and intimacy among little-acquainted individuals in larger networks. We might also think in terms of guided self-disclosure that includes elements of fantasy or self-distancing, or self-presentation “leveling,” in which the context in which one self-presents depends on how close one is to other users in a network or how new one is to a community. This suggests that elements of playful, non-idealizing self-fictionalization may aid in increasing the comfort of new acquaintances to self-disclose authentically. In sum, the present study enriches existing bodies of literature on self-presentation and avatar embodiment, and suggests viable techniques and targets for incorporating elements of fantasy and self-distancing in the design of online social environments.

Future work in this domain should include studying more experienced Miitomo users, as well as conducting more in-depth analyses of group dynamics in Miitomo. We also deem it important to conduct follow-up studies with a larger pool of diverse participants to explore differences in how cultural factors such as country, language, race/ethnicity and gender affect authentic vs. fictionalizing self-presentation under the Miitomo context. This would build upon but also diverge from extant research, which has not sufficiently explored cultural factors (e.g. language, country) and has not studied non-idealized fictionalization in online self-presentation.

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