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BRIEF REPORT

The Role of Habit Strength in Social Network Game Play

Donghee Yvette Wohn

This study tests assumptions that media consumption is, for the most part, automatic behavior. A regression model examining predictors of time spent playing social network games indicates that habit strength, not conscious motivations, is the most salient and significant predictor. Furthermore, specific features of game play that require repetitive activities contribute to habit. The results were consistent with literature in automaticity, and suggest that habit be included in future studies exploring online media use.

Keywords: Automaticity; Habit; Quantitative; Social Network Games; Uses and Gratifications

Social network games (SNGs) such as FarmVille and Mafia Wars are games that incorporate network data from social network sites such as Facebook[®] (Wohn, Lampe, Wash, Ellison, & Vitak, 2011). These games are extremely popular: As of August 2011, the top 10 games on Facebook each had more than 10 million average monthly users (AppData[™], 2011). SNGs are a unique medium, as the nature of being integrated with a social network site facilitates social interaction both within the game and the larger context of the site.

Why do so many people play games on Facebook? Explanations of media use have been mainly studied in the context of motivations, using uses and gratifications (U&G) as a theoretical lens (e.g., Katz, Blumler, & Gurevitch, 1974; Sherry, Greenberg, Lucas, & Lachlan, 2006).

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Parallel to this paradigm, scholars have suggested that after initial adoption, motivations explain very little of the time people spend using the media (LaRose, 2010; LaRose & Eastin, 2004) and that usage relies more on habit (Blumler, 1979; LaRose, 2010). Mass communication research has associated habit with ritualistic use of media, such as passing time (e.g., Papacharissi & Rubin, 2000; Rubin, 1984). However, research in social psychology suggests that habit is not governed by a conscious motivation; it is an automatic behavior that is triggered by an environmental stimulus (Bargh & Chartrand, 1999; Verplanken & Orbell, 2003).

Pilot interviews with players of Facebook games suggested that habit was playing a large role in determining how much time people spent playing the games, contradicting scholarship that claimed that games, being interactive, lead to more active behavior than watching movies or reading novels (e.g., Nakatsu, Rauterberg, & Vorderer, 2005). If theoretical assumptions about automatic behavior in media use (LaRose, 2010) include games, we would predict that habit strength explains more of how long people play than their conscious motivations:

H1: Habit strength will explain more variance in time spent playing SNGs than will motivations.

What contributes to habit? Media research has identified the role of habit in predicting use, but little research has examined the affordances of the media that contribute to habit formation. The literature on automaticity suggests that activities that require repetitive behavior can help develop a habit (Triandis, 1980; Verplanken & Wood, 2006; Wood, Quinn, & Kashy, 2002). This research on habit formation and development may serve as a guide in understanding how game features are associated to habit strength. We thus ask the following research question:

RQ1: Do game features that require repetitive actions positively predict habit strength?

Method

Data for this study were collected through a survey using snowball sampling because privacy settings in social networking sites make it difficult to identify and access game players (see Salganik & Heckathorn, 2004). Four graduate students (2 women and 2 men) sent out e-mail invitations to 226 acquaintances outside of the university who used Facebook, not specifically targeting game-players. Participants were asked to forward an invitation to the survey to five friends who played Facebook games.

SNG motivations and features of SNG play were assessed using existing scales (Wohn, Lee, Sung, & Bjornrud, 2010) that were based on traditional U&G scales of Internet and game use. The four motivations (13 items) were *building common ground* ($\alpha = .86$), *reciprocity* ($\alpha = .90$), *coping* ($\alpha = .76$), and *passing time* ($\alpha = .86$). Questions related to features of social network game play asked about the extent of engagement with each of the features. The seven features were *exchanging virtual gifts* ($M = 4.29$, $SD = 0.74$), *customizing one's virtual space* ($M = 3.41$, $SD = 1.11$),

customizing one's avatar ($M=2.80$, $SD=0.95$), publishing game achievements on Facebook ($M=2.77$, $SD=1.02$), caring about the mechanics of the game ($M=3.49$, $SD=0.78$), spending real money to buy virtual items ($M=1.34$, $SD=0.72$), and advancing one's level ($M=2.80$, $SD=0.80$). Items are listed in Appendixes 1 and 2.

Habit strength ($\alpha = .82$) consisted of three items (LaRose & Eastin, 2004) that were rephrased to replace the term *Internet* with *Facebook games*: "I would miss Facebook games if they were not available," "Playing Facebook games is part of my daily routine," and "I play Facebook games every day." Participants rated all statements on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Time spent playing games was a combined measure of how much time participants spent playing Facebook games per day multiplied by how many days per week they played the games.

Results

Two-thirds of the 253 people who participated in the survey reported that they *currently* play games on Facebook. Only those that played multiplayer games ($N=150$) were retained for analysis as many single-player games are arcade games that do not have elements such as spatial or avatar customization. Participants consisted of 60% women and 40% men, ranging in age from 19 to 70 years ($M=33.0$ years, $SD=9.8$). They played an average of 30 min per day ($SD=0.62$ hr), six times per week ($SD=1.7$), and reported a mean habit strength of 3.180 ($SD=1.073$).

Participants were more likely to play to pass time ($M=3.95$, $SD=0.97$) than to cope ($M=3.13$, $SD=0.90$). A paired-samples t test showed that the difference was statistically significant, $t(149)=8.94$, $p<.001$. The mean for coping was significantly higher, $t(149)=6.06$, $p<.001$, than that of reciprocity ($M=2.61$, $SD=1.08$), which was significantly higher, $t(149)=5.62$, $p<.001$, than that of common ground ($M=2.19$, $SD=0.89$).

Table 1 Stepwise Linear Regression Model on How Motivations and Habit Strength Predict Time Spent Playing Games on Facebook[®]

Predictor	Model 1: Demographics (β)	Model 2: Motivations (β)	Model 3: Habit (β)
Age	0.17*	0.15	0.13
Sex (Female)	0.10*	0.14	0.12
No. of Facebook "friends"	0.18	0.04	0.07
Common ground	—	0.07	0.02
Reciprocity	—	0.21*	0.18*
Coping	—	0.10	-0.03
Pass time	—	0.18	0.10
Habit strength	—	—	0.47**
Adjusted R^2	0.03*	0.14**	0.32**

Note. $N=150$. β = standardized regression coefficient.

* $p<.05$. ** $p<.001$.

Table 2 Multiple Regression Results: Features of Facebook® Game Play That Predict Habit Strength

Predictor	β	t
Spending real money	-0.07	-0.68
Customizing avatar	0.01	0.09
Customizing virtual space	0.30*	2.63
Caring about mechanics	0.35**	3.46
Advancing level	0.07	0.69
Exchanging gifts	-0.10	-1.00
Publishing achievements	0.28*	2.56
Constant	—	1.13
Adjusted R^2	0.35***	—

Note. β = standardized regression coefficient.

* $p < .05$. ** $p < .01$. *** $p < .001$.

A stepwise multiple linear regression was employed to see the predictive strength of motivations and habit on explained variance in game play ($H1$). The dependent variable was total hours spent playing games on Facebook per week. Model 1 contained demographic factors (age, sex, and number of Facebook “friends”): These were control variables. Model 2 added the four motivation variables, and Model 3 added habit strength (see Table 1).

Model 1 explained 3% of the variance in playing games on Facebook, $F(3, 147) = 2.72$, $p < .05$. Model 2 explained about 14% of the variance, $F(7, 143) = 4.57$, $p < .001$; with reciprocity ($\beta = .17$, $p < .05$) as the only statistically significant predictor. Passing time ($\beta = .18$, $p = .07$) was close to statistical significance. Model 3 was statistically significant and explained 32% of the variance, with habit as the strongest predictor, $F(8, 142) = 9.70$, $p < .001$. The change between Model 2 and Model 3 was statistically significant ($\Delta R^2 = .17$; $\Delta F = 37.41$, $p < .001$).

$RQ1$ was tested with an ordinary least squares regression employing the seven elements of game play as predictor variables and habit strength as the criterion. The model was statistically significant, $F(7, 143) = 3.45$, $p < .001$, explaining about 35% of the variance of habit strength (see Table 2). Focusing on the mechanics of game, spatial customization, and publishing game achievements on one’s Facebook “wall” were the predictors of habit strength.

Discussion

This study extends our understanding of the role of habit strength in explaining what factors contribute to Facebook game play. Habit strength was a stronger predictor of time spent playing games on Facebook than were motivations, consistent with results of studies on Internet use (LaRose & Eastin, 2004).

Actions in game play that require repetitive clicking were found to contribute to habit strength. However, publishing game achievements, which was also a significant predictor, may not necessarily be a repetitive behavior. This raises an interesting

question as to whether writing about the game is a reactive form of self-expression that can be seen as an extension of the play. One explanation could be that these games usually prompt users to publish their game achievements through a pop-up window (e.g., “Would you like to post your achievement to your wall?”); thus, clicking on the window is yet another repetitive clicking task. Further studies may be able to explain the automatic function of publishing on one’s Facebook wall.

This study has several limitations. First, the sample was a convenience sample, and the results may not be representative of characteristics of the average player of Facebook games. The second limitation is that the items measured in this study were elements of the game that require repetitive clicking, not repetitive clicking *per se*. To attribute repetitive clicking to habitual use would require a more controlled experiment.

Results of this study suggest that, although habit is an understudied construct, its explanatory power should be taken into consideration, or used as a control, when conducting studies of online media use. Future research should look into methods of habit measurement beyond self-report and the process of habit formation in computer-mediated communication processes.

References

- AppData™. (2011). *App leaderboard*. Palo Alto, CA: Inside Network®. Retrieved from <http://www.appdata.com/leaderboard/apps>
- Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist*, *54*, 462–479.
- Blumler, J. G. (1979). The role of theory in uses and gratifications studies. *Communication Research*, *6*, 9–36. doi:10.1177/009365027900600102
- Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. G. Blumler & E. Katz (Eds.), *The uses of mass communications: Current perspectives of gratifications research* (pp. 19–32). Beverly Hills, CA: Sage.
- LaRose, R. (2010). The problem of media habits. *Communication Theory*, *20*, 194–222. doi:10.1111/j.1468–2885.2010.01360
- LaRose, R., & Eastin, M. A. (2004). A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting & Electronic Media*, *48*, 358–377. doi:10.1207/s15506878jobem4803_2
- Nakatsu, R., Rauterberg, M., & Vorderer, P. (2005). A new framework for entertainment computing: From passive to active experience. *Entertainment Computing*, *3711*, 1–12. doi:10.1007/11558651_1
- Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet usage. *Journal of Broadcasting and Electronic Media*, *44*, 175–196.
- Rubin, A. M. (1984). Ritualized and instrumental television viewing. *Journal of Communication*, *34*, 67–77. doi:10.1111/j.1460–2466.1984.tb02174.x
- Salganik, M. J., & Heckathorn, D. D. (2004). Sampling and estimation in hidden populations using respondent-driven sampling. *Sociological Methodology*, *34*, 193–239. doi:10.1111/j.0081–1750.2004.00152.x
- Sherry, J. L., Greenberg, B., Lucas, K., & Lachlan, K. (2006). Video game uses and gratifications as predictors of use and game preference. In P. Vorderer & J. Bryant (Eds.), *Playing video games: Motives, responses, and consequences* (pp. 248–262). New York, NY: Routledge.
- Triandis, H. C. (1980). Values, attitudes and interpersonal behavior. In John H. Flowers (Ed.), *Nebraska symposium on motivation* (pp. 195–259). Lincoln, NE: University of Nebraska Press.

- Verplanken, B., & Orbell, S. (2003). Reflections on past behavior: A self-report index of habit strength. *Journal of Applied Social Psychology*, 33, 1313–1330. doi:10.1111/j.1559-1816.2003.tb01951.x
- Verplanken, B., & Wood, W. (2006). Interventions to break and create consumer habits. *Journal of Public Policy & Marketing*, 25, 90–103.
- Wohn, D. Y., Lampe, C., Wash, R., Ellison, N., & Vitak, J. (2011). The “S” in social network games: Initiating, maintaining, and enhancing relationships. In Ralph H. Sprague, Jr. (Ed.), *Proceedings of the Hawaii international conference on System Science* (pp. 1–10). Kauai, HI: IEEE. doi:10.1109/HICSS.2011.400
- Wohn, D. Y., Lee, Y. H., Sung, J., & Bjornrud, T. (2010). Building common ground and reciprocity through social network games. In *Proceedings of the 28th international conference extended abstracts on Human Factors in computing systems* (pp. 4423–4428). New York, NY: ACM. doi:10.1145/1753846.1754164
- Wood, W., Quinn, J. M., & Kashy, D. (2002). Habits in everyday life: Thought, emotion and action. *Journal of Personality and Social Psychology*, 83, 1281–1297. doi:10.1037//0022-3514.83.6.128.

Appendix 1: Items for Social Network Games—Motivations

“I play games on Facebook to . . . ”

- Common ground: . . . find others who respect my views, find people like me, improve my future prospects in life, express myself freely, find something to talk about.
- Reciprocity: . . . help other players, get support from other players, provide help to others.
- Coping: . . . feel relaxed, cheer myself up, forget my problems.
- Pass time: . . . find a way to pass the time, relieve boredom.

Appendix 2: Items for Social Network Games—Features

“How much do you agree or disagree with the following statements?”

- Spending: I spend real money to decorate my in-game space/environment, I spend real money to buy virtual cash, I spend real money to decorate my avatar.
- Avatar customization: I change how my avatar looks, I try to look different from other players, I spend a lot of time customizing my avatar’s appearance.
- Space customization: I spend a lot of time decorating my in-game space/environment, I try to make my in-game space/environment unique.
- Publishing: I publish game achievements to my wall, My Facebook wall has information about my game playing, I post comments when my friends share their game achievements.
- Mechanics: I will get gifts if I give gifts, I try to know as much about the game mechanics and rules as possible.
- Advancing: I only give and accept gifts to increase my level, I try to increase my level as soon as possible, I buy virtual items for the sake of increasing my level.
- Gifting: I accept gifts from my in-game friends, I give gifts to my in-game friends.