The Great Fantasy Migration: Exploring Individual Differences in the Move to an Online World

by

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(Under the Direction of W. Keith Campbell)

ABSTRACT

Individuals in the United States spend increasingly more time online and in virtual worlds, averaging 20.5 hours per week (Ofcom, 2015). I test a potential explanatory model for this shift, the Great Fantasy Migration hypothesis (GFM). The GFM proposes that the move to a virtual or fantasy realm is driven by a combination of high levels on narcissism and low levels of trust or confidence in the world. Virtual or fantasy realms allows esteem needs to be met without the level of challenge that it takes to meet these needs in the "real" world. In Study 1 (N=300) I tested participants' levels of grandiose narcissism, pessimism, geek culture engagement, and time on social media. Study 2 (N=600) served as a preregistered replication of Study 1 with the addition of items testing the effects of gender and positive emotionality. Both studies supported the GFM.

INDEX WORDS: Personality, social media, geek culture, Great Fantasy Migration, narcissism

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By

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INTRODUCTION

Culture – at least in the United States – is changing in the direction of more time spent in virtual or fantasy realms. For example, there has been a massive increase in social media use in the last decade. According to Pew nearly two thirds of American adults used social media in 2015, compared to 7% in 2005. Similarly, although to a lesser extent, there has been a growth in geek cultural engagement ranging from the more intensive (Comic Con attendance, gaming) to the less intensive (popular movies or television shows with superhero themes; McCain, Gentile & Campbell, 2015). While there are clearly many forces working to shape this change – from technological advances to economic changes – I am focusing on a model that involves both individual differences in personality (McCain & Campbell, 2016; Barry, Doucette, Loflin, Rivera-Hudson, & Herrington, 2015; Fox & Rooney, 2015; Qiu, Lu, Yang, Qu, & Zhu, 2015; McCain et al., 2016) and perceptions of opportunity, the *Great Fantasy Migration Hypothesis* (GFM). The GFM proposes that a combination of inflated self-views along with deflated views of reality make an active fantasy life a desirable outcome. In the present manuscript, I test primary predictions of the GFM.

The Great Fantasy Migration Hypothesis (GFM)

Young people are increasingly raised to believe they are special, and to have high expectations for the future (Twenge, 2006); however, the opportunities for self enhancement to support this inflated self-view in the real world is curtailed by a myriad of problems, such as unemployment and debt. These two forces -- an inflated self and a deflated view of reality -- could theoretically move individuals into virtual and fantasy worlds as these offer an opportunity to gain self-esteem and otherwise experience a more positive reality (Campbell & Twenge,

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2015). The GFM can thus be expressed as two main effects of inflated self and deflated reality on virtual/fantasy engagement, as well as their interaction:

inflated self *deflated reality= virtual/fantasy engagement

In this interaction, the highest levels of virtual/fantasy engagement should occur under conditions of inflated self and deflated reality. Lower levels of self-inflation and deflated reality should predict lower levels of virtual engagement. In the following sections I describe the operationalization of each of the terms in this model: inflated self, deflated reality and virtual/fantasy engagement.

Operationalizing Inflated Self

Consistent with other work in this area, I am operationalizing the construct of the inflated self as the personality trait of grandiose narcissism, or a grandiose and inflated self-concept (Miller et al., 2011). Grandiose narcissism is a specific subtype of the personality construct of narcissism. It is exemplified through inflated self-views as well as a sense of entitlement. It is also associated with a range of self-enhancing social behaviors designed to actively enhance and maintains self-esteem, including attention seeking, bragging, and associating with high status individuals (Campbell & Foster, 2005; Morf & Rhodewalt, 2001).

Operationalizing Deflated Reality

Deflated reality is the belief or idea that an individual lacks opportunities for success or meaning. I operationalize deflated reality using two related constructs, *pessimism* and *meaninglessness/distrust*. Pessimism is defined as the general tendency to expect negative outcomes according to past research (Scheier & Carver, 1987). Meaninglessness/distrust is often defined as a subset of anomie, or a sense of futility and suspicion about the world (Heydari, Davoudi, & Teymoori, 2011). It can also be conceptualized as a lack of trust in others or

organizations, which has been increasing over time (Twenge, Campbell, & Carter, 2014).

Operationalizing Virtual/Fantasy Engagement

Fantasy and virtual engagement refers to the individual's opportunity to be involved in virtual or fantasy realms. I operationalize virtual/fantasy engagement as two constructs, *social media use* and *geek cultural engagement*.

Social media use is defined as using social networking sites (e.g., Facebook, LinkedIn) to interact with others. Geek cultural engagement reflects participation in the spectrum of geek culture, or a set of media and fandoms such as science fiction (e.g., Dr. Who, Star Trek, Star Wars), cartoons (e.g., comic books, Japanese anime), and lifestyles (e.g., furries, or adopting an animal alter-ego or "fursona')(McCain et al., 2015).

These two constructs, social media and geek culture, were chosen for four reasons. First, these are large and growing arenas for social activity in current society. Second, they cover somewhat different aspects of the virtual/fantasy realm, with social media use being a more normative practice and geek cultural engagement being a more niche activity (although still widespread). Third, there are good psychological instruments for measuring both variables. And, finally, there is research showing a clear but modest link between narcissism and both social media use (McCain & Campbell, 2016) and geek cultural engagement (McCain et al., 2015). Therefore I have some confidence in one piece of the model.

Study 1

Based on the GFM, I hypothesized that the inflated self and deflated reality should both predict – as main effects and in interaction – fantasy migration. In order to measure inflated self I used a measure of grandiose narcissism. To measure deflated reality, I used the scaled average of pessimism and meaninglessness/distrust. I combined measurements of time spent on social media and geek cultural engagement to serve as the measure of fantasy migration.

Thus, the model tested can be expressed as follows:

grandiose narcissism * (pessimism + meaninglessness) = (geek culture + social media)

While this model shows only the interaction, it is important to note that I am also predicting a main effect of both predictor variables on the outcome variable, with the full model being:

grandiose narcissism + (pessimism + meaninglessness) + grandiose narcissism * (pessimism + meaninglessness) = (geek culture + social media)

In addition, I will test effects for pessimism and meaningfulness separately and social media and geek culture separately to account for the potential loss of precision from aggregating these constructs.

Method

In Study 1, I use self-report measures to assess the participants' levels of grandiose narcissism, pessimism, geek culture engagement, and time on social media. All data were collected on an online survey platform.

Participants and Procedure

Participants were 300 MTURK survey participants. Our sample was 50% male, 50% female with an average age of 34.83 (SD=10.64). Participants who signed up for the study were sent the questionnaires via a Qualtrics online survey. Participants received $1 for answering the survey. In addition to demographics, participants completed several personality scales as follows.

Materials

Grandiose narcissism was assessed using the Narcissistic Personality Inventory (NPI-40; Raskin & Terry, 1988). It consists of 40 forced choice items ("A. I have a natural talent for influencing people. B. I am not good at influencing people"; Cronbach's α = .92).

Pessimism was assessed using the Life Orientation Test- Revised (LOT-R; Scheier, Carver, & Bridges, 1994). It consists of 10 questions ("In uncertain times, I usually expect the best."; Cronbach's α =.88).

Meaningless/distrust was assessed using a multidimensional scale of anomie created by Heydari and colleagues (2011). It consists of 8 questions ("I can trust to the statements of high-ranking officials (authority)"; Cronbach's α=.60).

Geek culture engagement was assessed with the Geek Culture Engagement Scale (GCES; McCain et al., 2015). The GCES is a behavior inventory with 37 items rated on a scale from 1 (*Not At All*) to 5 (*A Lot*). It has seven subscales with questions such as: "For each of the following, please indicate to what extent you engage in this activity: LARPING (Live Action Role Playing Games)" but I am focusing on the overall scale score.

Time on social media was assessed using the face valid measure "Percentage of time online spent on social media". This was answered as a percentage of time spent on social media compared to time spent on the internet doing other activities.

Results and Discussion

Descriptive Statistics

I calculated descriptive statistics and confirmed they were within expected ranges. Means, standard deviations, and alpha values for each scale are presented in Table 1.

Testing the Great Fantasy Migration Hypothesis

My primary test of the GFM involved two steps. First, I standardized all variables and averaged the two indicators of deflated reality (i.e., pessimism and meaninglessness/distrust) and of fantasy migration (i.e., social media and geek culture) to form a combined variable representing each construct.

Next I conducted a series of multiple regression analyses. The first included pessimism + meaninglessness/distrust and narcissism as predictors, and the covariates of gender and age, with an outcome variable of fantasy migration. The model was significant with an overall, $R^2 = .17$, $F(4, 299) = 14.84$. The specific beta weights are reported in Table 3.

Second, I added the cross product of the two predictors to the model to test for the predicted interaction effect of narcissism and pessimism and meaninglessness/distrust. It was also significant, accounting for an increase in variance explained by fantasy migration, $\Delta R^2 = .06$, $F(1, 298) = 23.85$, $p < .001$. Thus, grandiose narcissism was a significant moderator of the relationship between deflated reality and fantasy migration.

The predicted interaction effect is shown graphically in Figure 2. I ran a regression with narcissism as the moderator, and plotted the interaction using outcome values for participants 1 SD above and below the mean of narcissism. The unstandardized simple slope for participants 1 SD below the mean of grandiose narcissism was -.03, the unstandardized simple slope for

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participants with a mean level of grandiose narcissism was .23, and the unstandardized simple slope for participants 1 *SD* above the mean of grandiose narcissism was .50. This difference in slopes indicates the strength of the interaction to some degree.

Ancillary Analyses

I analyzed the interaction model above without the gender and age as covariates. The same interaction pattern was found; the interaction between narcissism and deflated reality was still significant. In the interest of completeness, I also ran this interaction model separately for each predictor and outcome. This resulted in four additional, significant, interaction models. The pattern for each of these models was similar across both studies (Fig 1, 2).

These results are consistent with the predictions of GFM: fantasy migration is predicted by the interaction of meaninglessness/distrust and pessimism by grandiose narcissism. This interaction contains a main effect for both predictor variables. The dissonance between young people's self-views and their social and economic reality is potentially resolved by young people migrating more of their lives into virtual and fantasy realms.

Study 2

The goal of Study 2 was to conduct a pre-registered (OSF link: https://osf.io/496w3/) and well-powered replication of Study 1. This study also extended prior research in three ways: (1) I examined a possible three-way interaction between gender and inflated self and deflated reality. (2) I examined the relationship between fantasy migration and (a) feelings of social status, (b) feelings of belongingness (c) feelings of self-worth and (d) positive emotionality in order to see if higher levels of fantasy migration are associated with these effects on the self, (3) I examined whether fantasy migration served as a mediator for the motivations addressed in research question 2.

Items 2 and 3 above are taken from the GFM as well as the motivational literature on social media and geek culture. The GFM focuses on self-esteem and self-enhancement needs (i.e., social status, self-esteem) as well as general positive feelings (i.e., positive emotionality) and belongingness. Notably, research on social media and geek culture (McCain et al., 2015) has also uncovered the importance of belongingness in these activities. That is, individuals engage with social media and geek culture in part for belongingness needs, which, themselves, are linked to self-esteem needs (Leary et al., 1995).

Links between these needs – social status, belongingness, self-worth, and positive emotionality -- are likely according to prior research. For example, in geek culture research people appear to believe that important people in their life will accept them when engaging in geek activities. In addition, people appear to identify more strongly as a geek when they expect others to accept them for engaging in geek activities as established by McCain and colleagues (2015). The literature has not examined the perceived benefit that individuals report from belonging to a group within geek culture. However, past research has focused on the benefits of

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belonging to a group. As Jetten and colleagues (2015) have shown, belonging to a group has a positive effect on self-esteem, as well as a positive effect on social status.

Hypotheses

Similar to Study 1, I predict that the two main effects of narcissism and meaninglessness/distrust, as well their interaction, will be found to predict social-media and geek engagement. I also answer the following research questions:

1. Does a 3-way interaction which includes gender exist within the GFM model?

2. To the extent to which participants endorse fantasy migration they will also endorse feelings of social status, belongingness, self-worth, and positive emotionality

3. Will fantasy migration mediate the relationship between NPI, pessimism and the feelings above?

Method

Participants and Procedure. This study used 600 MTURK survey participants. The sample was 48% male, 52% female with an average age of 36.94 (SD=12.26). Participants who signed up for the study were sent the questionnaires via a Qualtrics online survey. Participants received $1 for answering the survey. In addition to demographics, participants completed several personality scales as follows.

Materials. The materials used in Study 2 were identical to those used in Study 1 with four additional, face-valid items in two contexts (i.e., geek culture and social media) for 8 total items designed to assess the feelings associated with fantasy migration. I measured the link between geek culture and social media usage on perceptions of social status, belongingness, self-worth, and positive emotionality will be measured by a face valid measure where participants

rated how much they agreed with the statement on a 1 to 5 Likert scale ranging from "Disagree Strongly" to "Agree Strongly". The questions were: "During my involvement in [geek culture/social media] I feel like I have higher social status", "During my involvement in [geek culture/social media] I feel like I have more self-worth and self-esteem.", "During my involvement in [geek culture/social media] I feel like I belong.", "During of my involvement in [geek culture/social media] I feel like I am happier." The first two items were combined to capture self-enhancement.

Results and Discussion

I calculated descriptive statistics and confirmed they were within expected ranges. Means, standard deviations, and alpha values for each scale are presented in Table 1b.

Testing the Great Fantasy Migration Hypothesis

Following the same pattern of analyses as Study 1, I standardized all variables. Then I examined the alpha of meaninglessness/distrust and confirmed it was far below normal values (Study1=.60, Study2=.65) I conducted an EFA of pessimism and meaninglessness/distrust which resulted in convincing evidence for a 1 factor solution, which predominately loaded on pessimism items. Due to this I dropped meaninglessness/distrust and operationalized deflated reality as pessimism. Fantasy migration (i.e. social media usage and geek culture engagement) to form a combined variable to represent each construct.

Next I conducted a series of multiple regression analyses. The first included pessimism and narcissism as predictors, and the covariates of gender and age, with an outcome variable of fantasy migration. The model was significant with an overall, $R^2 = .12$, $F(4, 619) = 22.04$, $p < .001$. Then I added the cross product of the two predictors to the model to test for the predicted

interaction effect of narcissism and deflated reality. It was also significant, accounting for an increase in variance explained by fantasy migration, $\Delta R^2 = .001$, $F(1, 618) = 9.29$, $p < .001$. Thus, grandiose narcissism was a significant moderator of the relationship between deflated reality and fantasy migration. Note, though, that this percent of variance is quite small.

I then analyzed the interaction effect, which is shown graphically in Figure 2a I ran a regression with narcissism as the moderator, and plotted the interaction using outcome values for participants 1 SD above and below the mean of narcissism. The unstandardized simple slope for participants 1 *SD* below the mean of grandiose narcissism was .10 the unstandardized simple slope for participants with a mean level of grandiose narcissism was .26, and the unstandardized simple slope for participants 1 *SD* above the mean of grandiose narcissism was .44. This pattern was like, although less pronounced, than in Study 1.

Extending the above results, I tested gender in the model to see if it moderated the interaction just reported above. There was no change in R^2 due to gender (Table 3). This result for Research Question 1, suggests that gender is not part of the interaction between grandiose narcissism and pessimism in predicting fantasy migration.

In testing Research Question 2 I found a positive correlation between the extent to which participants endorse fantasy migration (i.e., geek cultural engagement and social media use) in terms of: social status ($r=.40$, $p< .001$), belongingness ($r=.32$, $p< .001$), self-worth ($r=.39$, $p < .001$), and positive emotionality ($r=.39$, $p< .001$) from this experience. These results answer research question 2, and the correlation between these motivations would even go so far as to suggest simplifying the statistics for the purposes of this paper to use only geek culture engagement in graphs. The correlation between the two variables is reported in Table 2, and is consistent with the initial research question.

Next, I tested to see whether fantasy migration partially mediates the relationship between inflated self/deflated reality and the motivation items of social status, belongingness, self-worth, and positive emotionality (see Figure 3). These tests were conducted using path analysis on the mediation models specified above. On comparing the model results I found that in all cases, these four motivations mediated the link between inflated self and deflated reality for engaging in a fantasy world.

Discussion

These results are consistent with the predictions of GFM and replicate Study 1 in a pre-registered environment with a larger sample: fantasy migration is predicted by pessimism and grandiose narcissism as well as their interaction. The dissonance between young people's self-views and their social and economic reality appears to be resolved by young people migrating more of their lives into virtual and fantasy realms. In addition to replicating Study 1, Study 2 also provided some insight into the motivational benefits of fantasy migration such as changes in social status, belongingness, self-worth, and positive emotionality.

General Discussion

The Great Fantasy Migration (GFM) holds that when people with more inflated self-views encounter a reality that does not reinforce their self-views – that is a reality where they experience low trust and poor connections – they migrate into virtual and fantasy realms to get the positive self-reinforcement they need. In the present research, I present the first direct test of the full GFM model by examining both hypothesized predictors and their interaction effect. Results were generally supportive of the GFM, at least with the specific variables I chose to operationalize the constructs.

That said, there were two patterns of findings that were not well-specified in the GFM. First, the interaction pattern was relatively weak compared to the main effects. For example, even at low levels of deflated reality there was still a positive association between inflated self and interest in geek culture (social media was consistent as well). For geek culture we found slopes of .14 and .20 at low (-1 SD) and high (+1 SD) levels of NPI respectively. Thus, with less well-powered samples the interaction effect is not likely to be evident. Theoretically, this suggests the model should focus more and predictors of GFM, narcissism and social mistrust/anomie, than their interaction. Both narcissism and social mistrust predict fantasy migration.

Second, the role of the motivations I assessed – social status, belongingness, self-worth, and positive emotionality – was similar to self-enhancement; however the GFM was focused on enhancement, as opposed to emotionality. This suggests that the model might need to be expanded at some point to include self-enhancement and perhaps other feelings such as lowered anxiety. The GFM as a social process may be multiply motivated, and as with geek culture more generally, may be predicted by other variables like neuroticism and openness (McCain, et al., 2015).

Implications

At the individual level, the GFM will help predict who will be most engaged with virtual and fantasy activities. The GFM model might help people design geek or social media activities to meet specific motivations as well. It could also be a gateway to understanding people based on how they play a game- for example instead of predicting actions in game from their personality it might be possible to predict their personality traits from their action in game.

It would be useful to test this model to see if it holds at the country- or culture- level. For example, is there more fantasy migration in cultures that have more inflated selves and deflated reality? Or are other variables more important at this higher level, such as societal pressures like conformity?

Limitations and Future Research

These data are limited primarily by being self-report data (although using validated scales). Future research should move beyond self-report. For example, further study could potentially be done using Experience Sampling Methodology (ESM), which would allow testing directionality of the relationships, as well as the potential to derive fascinating insights about the influence of location on culture and emotionality. ESM could also offer far more nuanced conclusions about how fantasy migration related behaviors affect outcome variables related to the motivations studied in this paper, like self-esteem or depression. Further, this work is limited by focusing on US culture. It is not clear that these same processes even occur in other cultures. In Japan, for example, there is an active and robust fantasy world, but given the relatively low levels of individualism and narcissism in Japan, it is possible that other feelings play a larger role.

Conclusion

These two studies have established a reliable relationship between inflated self, deflated reality and fantasy migration. This provides the first direct test of the GFM. The findings, including a full replication, provided positive support for the GFM. However, they also suggest several ways that the model might be expanded in scope to include a main effect of inflated self and deflated reality, the addition of other motives such as fear to the model, and the use of other personality predicators like neuroticism.

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Tables

Table 1a (Study 1)

Means, SD's, Correlation and Partial correlations (controlling for gender and age)

	1	2	3	4	5	M	SD
1.npi	.92	.09***	.07***	.16***	.12***	12.13	8.79
2. pessimism	-.23***	.88	.23***	.01	.15*	26.06	8.17
3. M/D	0	.47***	.60	.05**	.03*	25.93	4.77
4. geek culture	.36***	.06	.02	.78	.27***	45.6	18.19
5. % time on social media	.27***	.00	.05	.25***	--	19.11	20.04

Note: simple correlations are on the lower left matrix; partial correlations are on the upper right; alpha values are along the diagonal; M/D stands for meaninglessness/distrust; *p<.05, **p<.01, ***p<.001

Table 1b (Study 2)

Means, SD's, Correlation and Partial correlations (controlling for gender and age)

	1	2	3	4	5	M	SD
1.NPI	.90	.14***	.07***	.12***	.06***	10.85	7.87
2. pessimism	-0.2***	.87	.17***	.04***	.05***	25.21	8
3. M/D	-0.02	0.4***	.65	.05**	.04***	26.08	5.1
4. geek culture	0.3***	0.1*	0.07	.75	.13***	42.4	16.34
5. % time on social media	0.18***	0.12**	0.11**	0.33***	--	18.98	19.61

Note: simple correlations are on the lower left matrix; partial correlations are on the upper right; alpha values are along the diagonal; M/D stands for meaninglessness/distrust; *p<.05, **p<.01, ***p<.001

Table 2

Comparison between self-motives and Fantasy Migration (i.e., social media usage + geek culture

engagement) in terms of geek culture and social media

	Fantasy Migration		Fantasy Migration
social status due to geek culture	0.40***	social status due to social media	0.35***
self-worth due to geek culture	0.39***	self-worth due to social media	0.35***
belongingness due to geek culture	0.32***	belonging due to social media	0.29***
happier due to geek culture	0.35***	happier due to social media	0.36***

Table 3

Adding gender to the interaction between pessimism and NPI

Source	B	SE B	β	t	p
1. npi	0.013	0.018	0.310	0.707	0.000
2. pessimism	0.008	0.009	0.163	0.809	0.000
3. gender	0.007	0.348	-0.068	0.023	0.982
4. age	-0.010	0.002	-0.163	-3.997	0.000
1 x 2	0.000	0.000	0.081	0.883	0.377
1 x 3	-0.014	0.025	0.017	-0.590	0.555
2 x 3	-0.006	0.012	0.007	-0.495	0.621
1 x 2 x 3	0.000	0.001	0.028	0.726	0.468

R^2=0.15, p<.001

Fig 1 (Study 1):

Conditional effect of NPI on the relationship between pessimism and geek culture
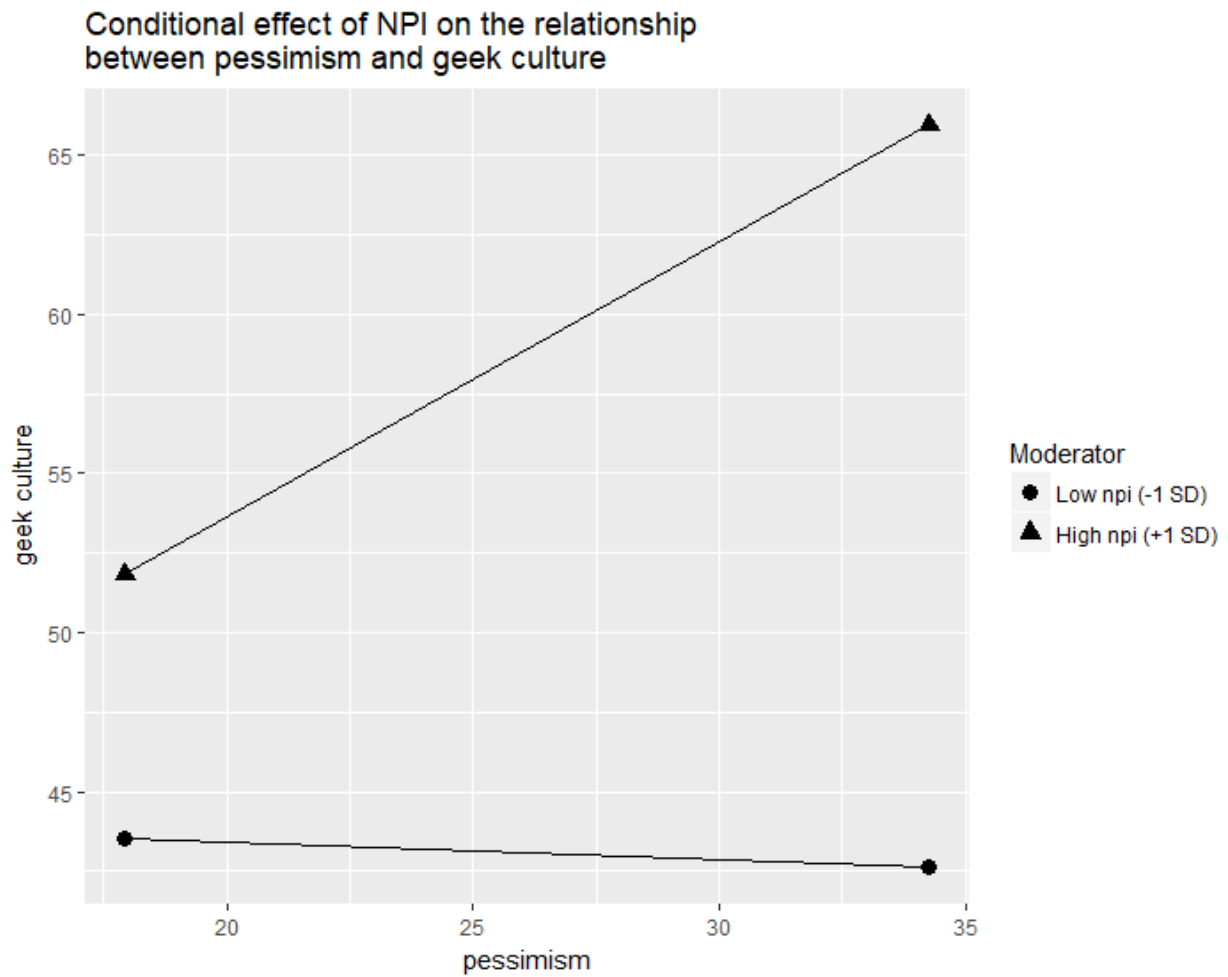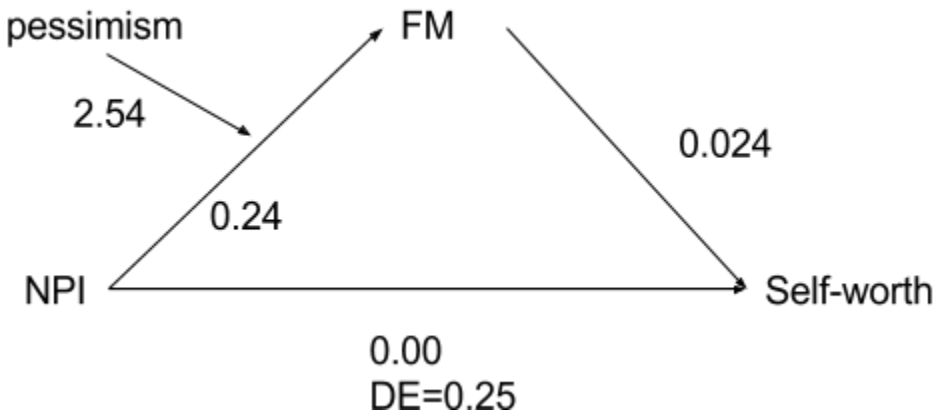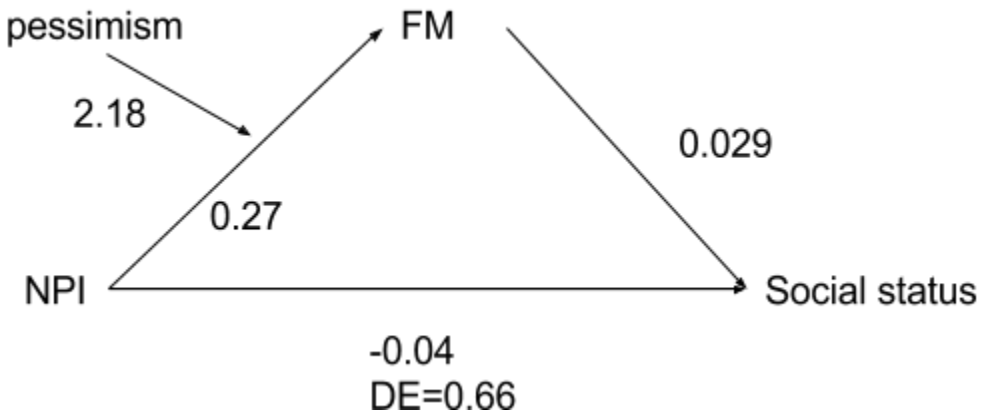
Conditional effects of NPI on the relationships between geek culture and pessimism

Fig 2 (Study 2)

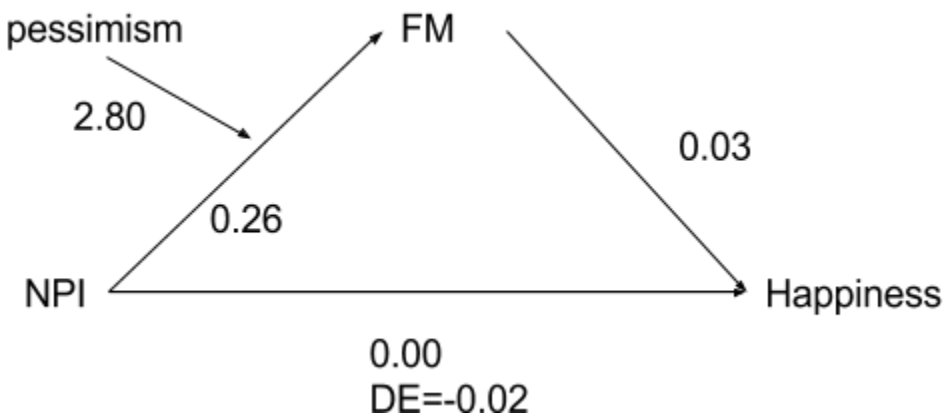Conditional effect of NPI on the relationship between pessimism and geek culture
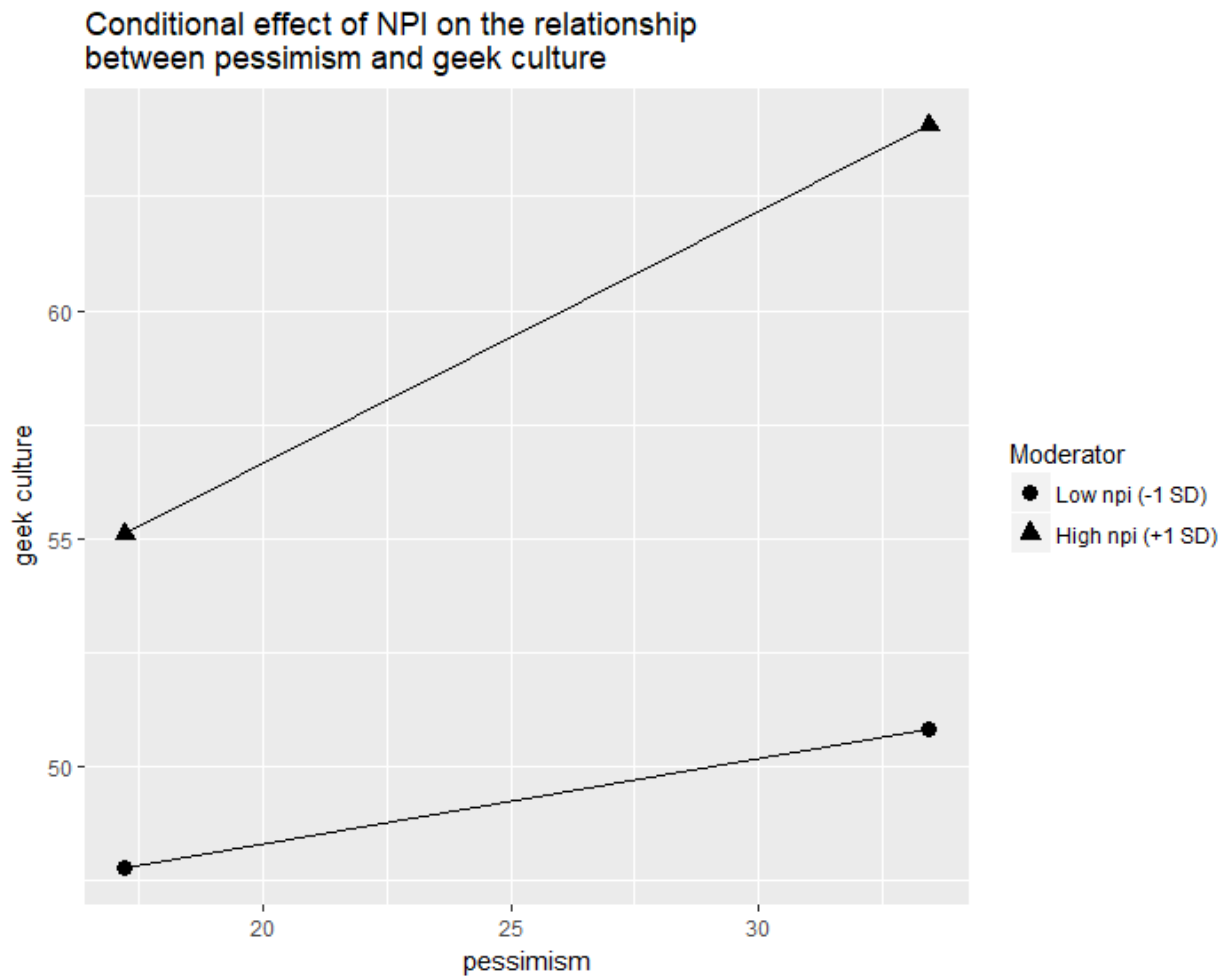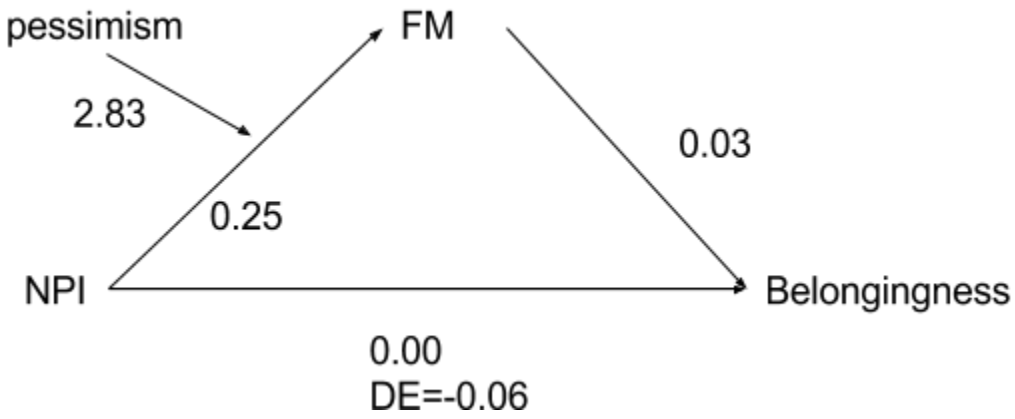
Conditional effects of NPI on the relationships between geek culture and pessimism

Figure 3
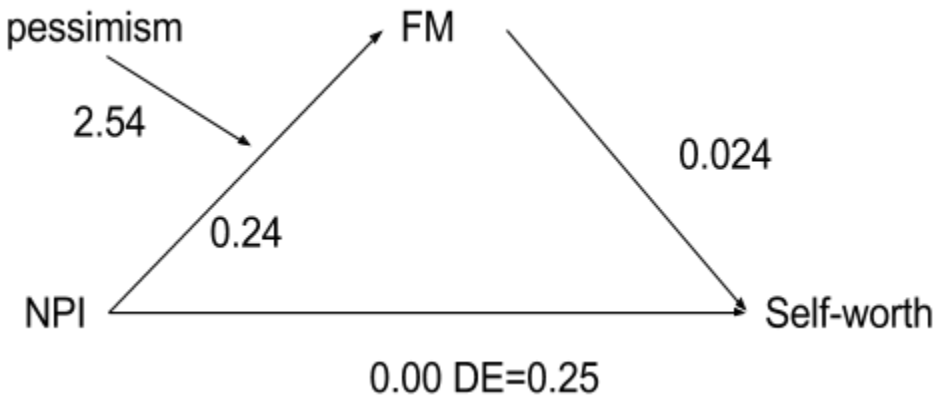
Fantasy Migration as a mediator between NPI and motivations for engaging in geek culture

(measured by GCES).

Motivations measured in terms of social media usage returned similar results and were omitted.

FM = Fantasy migration. The interaction between geek culture engagement (GCES) and

Social media usage