A Study of the Cognitive Effects of Facebook: Narcissism

Humans are a social species. Evolution has left us with an innate desire to connect and communicate cooperatively with our fellow man, for this connection in turn helps raise our individual survival and reproductive fitness. This evolution of social desire didn't stop at our genes either; where natural selection may have set the initial stage, cognition pushed it to its limits.

We are now immersed in a world revolving around our peers, sharing a connection that until now has been unheard of within the history of this planet. Though, this innate social desire exists within many other forms of species as well, our kind is the first to take it to the global scale. We have the power as individuals to communicate with other people across the world, sharing news and ideas instantaneously with the push of a button. We are successfully pushing the limits of time and space, and can hold the invention of the internet accountable for this development.

After the internet became public in the early 90's, it wasn't long before it was adapted as a new way of communication. Social networking websites started popping up everywhere. Websites like American Online, Friendster, and MySpace, all understood and built off our innate desire to connect with others, and all quickly became multimillion dollar companies by providing us with that basic service.

Of the entire scope of different social networking sites that have become available, the website, Facebook.com, stands out as the largest and most wildly used of all. The website was first launched in February of 2004, in the Harvard dorm room of founder Mark Zuckerberg and co-founders Dustin Moskovitz, Chris Hughes, and Eduardo Saverin (*Timeline*.). First created as a type of online directory exclusively for college student to keep in touch, the site expanded rapidly and hit a million active users by December of the same year. In September of 2006, Facebook.com expanded its registration to be open to the general public (*Statistics*).

Shortly after Facebook opened its boarders, the website reached 12 million users, more than doubling what it had the previous year (*Timeline*). It wasn't long before this website became a global sensation. Presently, reports indicate that Facebook currently has over 800 million active users (users who have returned to the site in the last 30 days), and the numbers continue to grow exponentially (*Statistics*). There is an estimated 700,000 new user's every day and about 12% of the global population currently has a Facebook profile (*Grossman, 2010*).

We have entered the age of digital social interaction. Social networking has now become so grounded in our everyday lives, that it has become nearly impossible to escape. Even individuals who refuse to join such networking websites are constantly bombarded with reminders of its existence. Traditional media sources, like newspapers and television networks, have started including aspects of social networking as part of their everyday news presentations, providing current information ranging from changes to website interfaces to even the most futile of facts, like controversial status updates posted by pop icons. Most companies nowadays advertise using these sites, providing special offers and discounts to people who "Like" their page. It has also become common for organizations and businesses to take advantage of the fact that these websites are free, and have completely replaced their company webpage with Facebook profiles. It is obvious that online social networking is becoming a fundamental part of our society, and isn't going to be leaving any time soon.

This increasingly growing popularity of social networking sites has caused many concerns among psychologists about the possible impacts these sites may have on individuals, and in turn our culture as a whole. One of the leading areas of inquiry has been on the impacts of social networking sites on individual's cognition and personality, and more specifically, the occurrence of the personality trait narcissism.

Narcissism is a complex of personality traits that can be narrowly defined as having an inflated self concept. Individuals who rate high in narcissism usually have high feelings of entitlement. They like to be the center of attention, and believe that that attention is rightfully owned to them. They are overconfident with themselves, and strive for success in everything they do. Personal failures are usually blamed on temporary outside forces, and successes are believed to be the result of the personal aspects of that individual, which are perceived as permanent parts of their self construct. Narcissism is also shown to be negatively related to things like empathy and impulse control, as well as being positively associated with acts of aggression

Narcissism is a primary topic of interest for psychologists interested in social networking websites for a couple of reasons. The first reason is because of all the negative associations related to the personality trait; which were listed above. The second reason is that sites like Facebook.com contain mostly self promoting features, like status updates and posting pictures. Notifications and the "like" button on Facebook can almost be seen as a reward system for users, which encourages users to use such self promoting features. Because of this, one can easily speculate that there must be some connection between narcissism and use of websites like Facebook.

One of the first studies to ever examine the relationship between narcissism and social networking websites was conducted in 2008, by Laura Buffardi and Keith Campbell, of the University of Georgia. Their study examined two different aspects of the website Facebook.com, and how they related to individual's scores on a narcissism personality test survey. The first aspect they looked at was the amount of activity a user engages in when using the website. What this means is that they examined things like the amount of posts, likes, comments, and updates that an individual makes when they are on Facebook. The other thing the experimenters looked into was the type of content users added to their page. The results of the study indicated that narcissism is directly correlated with the amount of activity one engages in while using the website, and also that a higher level of self promoting content was made by individuals that scored higher on the narcissism personality test (*Buffardi and Campbell, 2008*).

Since Laura Buffardi's and Keith Campbell's study, numerous other studies have been conducted in the same field. Nanyang Technological University, in Singapore, conducted a study that showed that narcissism is positively correlated to the usage of the self-generated content functions of Facebook, like status updated and photo uploads (*Ong, 2011*). A study by Madeline Schwartz, of pace university, revealed that people with higher levels of narcissism accumulate more "friends" than those who are more self less (*Schwartz, 2011*). The two most popular studies on the topic of narcissism and social networking usage was one study conducted in 2010, by Soraya Mehdizadeh, of York University, and another study carried out by Tracii Ryan, and Sophia Xenos, from RMIT University. Both of these studies showed that Facebook users tend to be more narcissistic then non users, and that narcissism is positively correlated with the amount of time daily one actively engages with the website (*Mehdizadeh, 2010*) (*Ryan and Xenos, 2011*).

All of the past research indicates an obvious correlation between narcissism and social networking sites. The problem with the past research, however, is that because the studies were all correlational examinations, they don't provide the necessary evidence to conclude ideologies about cause and effect. All that is known right now is that there is some link between narcissism and online social networking, but which causes the other is still completely unknown.

The present study aimed to help shed some light on this problem by further examining this phenomenon and attempting to supply evidence as to whether online social networking

causes increases in narcissism in individuals, or that narcissistic individuals are just more likely to engage in such sites. To accomplish this, this study compared individuals' level of narcissism to the length of time they have participated in social networking.

It is understood that the present study is still another correlational study, just like the previous ones. However, even though conclusions about cause and effect can't be drawn with 100% confidence and accuracy, the results of this study will still provide a basic idea as to which variable is the source. The reasoning for this is that when examining the likelihood of both scenarios, only one of them seems remotely probable. The chances that narcissistic individuals were the first people to discover and use a social networking website, followed by those slightly less narcissistic, and then those even less, doesn't make much sense. Finding out about certain social networking sites is something that's outside of an individual's control, and therefore cannot be assumed to be the cause of a simple personality trait. There are just way too many social factors involved in the reasoning for an individual to create a Facebook page, that narrowing it down to a personality trait seems unreasonable. Therefore, if the results of the study prove significant, the only alternative option would be to lean towards the idea that social networking causes increases in narcissism.

The present study will be similar to past studies on this topic, in that it will use a questioner to measure levels of narcissism in different individuals. The social networking website chosen for examination in this study is Facebook.com, because it is the most popular social networking site at this time, and because most of its features have self promoting characteristics. If social networking really causes increases in narcissism, then the results of the study should show that participants that have used Facebook for the longest amount of time will exhibit higher levels of narcissism in their personality.

Methods

Participants

Because of limitations in time and money, participants in the study were all recruited from multiple social networking sites. Seventy-three participants in all volunteered to help with the study. Because of the way participants were recruited, little is known about the overall demographics of the participants, except that they all live in areas with access to the internet.

Materials

As a way of gathering data, an online survey was created for participants to complete.

In order to measure individuals levels of narcissism, this study used the Narcissistic Personality Inventory or NPI-16. This personality measure was chosen because it has been tested extensively for face, internal, discriminate, and predictive validity (*Ames and Rose, 2006*). This measure was also chosen over alternative measures because of its length. It is a small enough measure that it should reduce the risk of participants becoming fatigued or bored during the survey, which could have potentially skewed the results. Ratings of narcissism had the potential range of 0 to 5; where 0 indicated low narcissistic personality traits, and 5 meant extremely high levels of narcissism.

Besides the NPI, participants were also asked to answer questions regarding their usage of Facebook. They were asked whether or not they have had a Facebook profile, as well as how many years they have had a Facebook profile for. Answers for Facebook usage were based on a scale ranging from "zero years" to "five or more years".

The complete questioner contained a total of 36 questions and took an average of 7 minutes for participants to complete.

Procedure

The survey was built and hosted on the free website SurveyBuilder.com. This website was chosen because it was free to use, and it had a simple to use interface, which would cause less confusion for participants when filling out the survey. Links to the survey were placed on multiple social networking websites, and were left there for one full week before the data was compiled and analyzed.

Results

The estimated amount of years individuals have used Facebook was compared the average NPI scores of participants. (Refer to figure 1)

Only 2 of the participants in the study did not have their own Facebook profile. The average narcissism rating for these individuals without a Facebook was 2.52, with a standard deviation of 0.04.

Two participants reported only having a Facebook profile for 1 year or less. The average narcissism rating for these participants was 2.5, with a standard deviation of .58.

There were 8 participants that reported having a Facebook profile for about two years, and the average narcissism rating for these participants was 2.71, with a standard deviation of .28.

There were 19 participants that reported having a Facebook profile for 3 years. The average Narcissism rating of these participants was 2.63, with a standard deviation of .3.

There were 26 participants with a Facebook Profile for 4 years. They had an average Narcissism rating of 2.71, with a standard deviation of .31.

Lastly, there were 17 participants with a Facebook for 5 years or more. The average narcissism rating for these participants was 2.78, with a standard deviation of .32. To examine the strength of the relationship between the different pairs of data, a Pearson's product moment correlation coefficient test (one-tailed) was conducted. The test resulted in $r(71)=.1943$, $p<.05$, which indicates a weak, yet significant, correlation between narcissism and the amount of years one has used Facebook.

Discussion

Past research indicated a high correlation between social networking website usage and individuals' levels of narcissism. Narcissism was related to both the ways in which one engages with social networking sites as well as their frequency with such usage. The present study aimed to further examine this phenomenon by examining how narcissistic personality traits are related to the amount of years individuals have used these social networking sites.

As stated before, since this is a correlation study, causation and effect are not clearly defined. However, this study does seem to shed some light on the possibilities of cause and effect. The case where narcissistic people were more likely to create Facebook profiles earlier then unselfish individuals, seems more unlikely then the alternative interpretation. Thus, the case where social networking causes increases in narcissism will be discussed.

The initial hypothesis of this study stated that participants that have used Facebook for the longest amount of time would exhibit higher levels of narcissism in their personality. The results of the study confirmed this hypothesis, showing a weak, yet significant,

correlation between these variables.

The causes for this increase of narcissism with extended use of Facebook, can be interpreted in many different ways, however, until more research is conducted on this subject, these interpretations are nothing more than speculation.

One possible explanation of the current findings has to do with the overall layout and functions of Facebook.com. Many of Facebook's functions contain self promoting aspects; like status updates, posting pictures, and biographical information. The interface of Facebook emphasizes these functions, making the use of them appear (and intern actually be) the social norm of behavior for using the website. An initially selfless individual, beginning to use the site for the first time, will be faced with natural pressures of conformity to engage in the self promoting features of Facebook. As an individual partakes in these self promoting features over a period of time, this context based display of narcissism may gradually permeate into other real world contexts, unrelated to the social networking world.

Another possibility is that social interaction through the internet may actually devalue face to face interactions, and thus hindering interpersonal relationships. Digital interaction creates a sense of detachment that doesn't exist in natural human interaction. Body language, facial gestures, and pitch changes in vocal responses, are some of many things missing from this new kind of communication, and these are all primary human tools for portraying emotion. A study conducted by the University of Essex, showed that emotion recognition is highest when multiple corresponding emotional cues are conveyed together (*Paulman and Pell, 2011*). The internet allows for only a single emotional cue to be conveyed in conversation, which is semantics.

This inability to substantially read emotions creates a world of emotional distance. Since people cannot fully emotionally connect with other people using only written text, personal characteristics like empathy decrease. Eventually, these narcissistic characteristics, like lack of empathy, will seep into other real world contexts.

The final possible reasoning as to why narcissism increases with the use of Facebook has to do with the fact that everything posted on the website is open for a large number of people to view and comment on. The knowledge that everything one posts will be evaluated and open for comments can potentially create a depersonalization of that individual's thoughts and behaviors, where he/she no longer responds logically and within bounds of their true moral character, but instead in terms of what they think will win the public's praise and acceptance.

Though this phenomenon is clearly depicted in any popular reality TV show, I feel that two quotes from the documentary, "We Live in Public," describe it the best. In the documentary, internet pioneer, Josh Harris, and his girlfriend, Tonya Corrin, vowed to live completely in the public eye, and did so by setting up a network of cameras throughout their home, which were then broadcasted live on the internet. The website allowed anyone visiting the site to post comments about the live stream. When later interviewed about their domestic fights while living under video surveillance, Josh Harris and Tonya Corrin had this to say, "When arguing with a lover, the best thing you can really do is stop and really listen to each other, but when arguing in public, it's about egos, it's about winning." "The moment the fight ends, we would rush back to our [computers] to see everyone's viewpoint on how the fight went."(*Timoner, 2009*)

There is an obvious distinction between Facebook and 24 hour video surveillance, although the comparison may not be too far of a stretch. Further studies on the topic of narcissism and social networking are definitely necessary to significantly determine the exact causation of the relationship found in the current study.

The implications of this study provide some insight on how this increase in the popularity of social networking sites may negatively impact our society and the world as a whole. Narcissism is negatively related to things like empathy and impulse control, as well as being positively associated with acts of aggression. If this rise in popularity and usage of social networking sites continues to progress, there could be major repercussions on our way of life. We may be creating a world where people no longer work cooperatively on tasks, where people are motivated solely based on personal gain, where interpersonal relationships cease to exist as people become more and more emotionally distant. We may be creating a world of war, a world of increased fighting among many, for things like power, resources, and control. We may be creating a world that is dark and unjust.

It is important to note however, that one mustn't just jump to such extreme conclusions based solely on this study. We live in such a vast array of interconnected networks, that to flat out say that this new technology is tactless and undesirable would be too quick of a conclusion. We need to examine the complete assemblages that surround social networking websites, and analyze the costs and benefits we receive from this novel convenience. Only then will we be able to fully grasp how we can change or effectively use this technology in appropriate ways where the outcomes won't seem so dark and distasteful.

Limitations and Other Considerations

One interesting aspect of the data that needs to be examined is the massive increase in narcissism at 2 years (see figure 1). This sudden increase and drop in narcissism most likely has to do with one of the major limitations of the study. The chief limitation of the present study was that participants were recruited using multiple websites, all of which could be considered social networking sites. Because of this, there were very few participants which reported using Facebook for 2 years of less, causing notably higher variance within those sets of data. In fact, more than 80% of participants reported using Facebook for 3 or more years, thus possibly skewing the results.

The fact that most participants were recruited via the internet also raises questions on how well the sample was an actual representation of the general public. The fact that all participants can be considered regular internet users might have impacted the data to display false results.

Another limitation to the study is the fact that it was a correlational study. Even though the direction of causation appears to only make sense in that Facebook causes narcissism, the latter cannot be ruled out based on this study alone.

Because of the grim nature of the possible implications of the study and the fact that there is very little research as of now pertaining directly to this topic, further research is definitely needed to be conducted on the relationship between social networking and narcissism. Further research will help stabilize this theory, as well as provide possible explanations as to why this correlation has been found.

A prime future study would be a longitudinal study, which repeatedly measures the same individuals' narcissism levels over a long period of time using social networking websites. This type of study will more accurately examine whether social networking actually causes increases in levels of narcissism, because the same individuals will be examined in every case, and therefore changes in personality can be clearly perceived.

References

Ames, D. R., Rose, P., & Anderson, C. P. (2006). The npi-16 as a short measure of narcissism. *Journal of Research in Personality*, *40*, 440–450.

Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality and Social Psychology Bulletin*, *34*(10), 1303-1314.

Grossman, L. (2010, December 15). *Person of the year 2010: Mark Zuckerberg*. Retrieved from http://www.time.com/time/specials/packages/article/0,28804,2036683_2037183,00.html

Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on facebook. *Cyberpsychology, Behavior, and Social Networking*, *13*(4), 357-364.

Ong, E. Y. (2011). Narcissism, extraversion and adolescents' self-presentation on facebook.*Personality and Individual Differences*, *50*(2), 180-185.

Paulmann, S., & Pell, M. D. (2011). Is there an advantage for recognizing multi-modal emotional stimuli?. *Motivation and Emotion*, *35*(2), 192-201.

Ryan, T., & Xenos, S. (2011). Who uses facebook? an investigation into the relationship between the big five, shyness, narcissism, loneliness, and facebook usage. *Computers in Human Behavior*, *27*(5),

Schwartz, M. (2011). The usage of facebook as it relates to narcissism, self-esteem and loneliness. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *71*, 4541.

Statistics. (n.d.). Retrieved from http://www.facebook.com/press/info.php?statistics

Timeline. (n.d.). Retrieved from http://www.facebook.com/press/info.php?timeline

Timoner, O. (Director) (2009). *We live in public* [Web]. Retrieved from Netflix.com