

Personality and Online Behavior

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Abstract

This study looked to find a connection between personality and online behavior. Internet trolling has been described as “the practice of behaving in a deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent instrumental purpose” by Buckels, Trapnell and Paulhus (2014), who suggested that trolling provides enjoyment for persons with certain “dark” personality traits. These traits included psychopathy, Machiavellianism, and especially sadism. While these traits give a sense of who trolls, they fail to provide an explanation for the underlying psychological processes that drive trolling. This study used Rose-Karsnor’s (1997) definition of social competence, which states social competence is “the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across settings” (p. 113). This study utilized the Interpersonal Competence Questionnaire to measure social competence, as this questionnaire has been used for measuring social competence and online behavior before (Jenkins-Guarnieri, Wright, & Johnson, 2013; Yang & Brown, 2015). This study also sought to analyze Effectance Motivation, which is the need to have an effect on one’s environment, in relation to trolling and social competence. Individuals who score high on Effectance Motivation and low on social competence are believed to also score the highest on trolling behaviors. This study utilized the introductory psychology class as a subject pool, and administered online questionnaires to measure the variables of interest. The study used a regression framework, measuring the relationships between the predictor (social competence and Effectance Motivation) and criterion variables (trolling). A relationship between the variables was indeed found, with high Effectance on People and low Emotional Support predicting with high levels of trolling. Specifically, analyses indicate that Effectance Motivation and social competence predicted trolling; $\Delta R^2 = .133$, $p < .000$, and that an interaction effect was also found $\Delta R^2 = .032$, $p < .01$, which indicates that trolling is indeed predicted by a combination of low social competence and high Effectance Motivation. These findings can illuminate previous research on trolling among dark personalities. Empathy and Effectance Motivation among dark personality traits also needs to be studied in the future.

Introduction

This study demonstrates the relationship between personality and online behavior. Specifically, this study shows the personality variables of Effectance Motivation (the desire to have an effect on one's environment, White, 1959) and social competence ("the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across settings" Rose-Krasnor, 1997 p. 113) connect to the online behavior of trolling (the practice of behaving in a deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent instrumental purpose" Buckels, Trapnell, & Paulhus, 2014). These three ideas will be reviewed independently, and then the associations between them will be reported.

Trolling

Trolling is a relatively new behavior, found specifically on the internet. Trolling is "is the practice of behaving in a deceptive, destructive, or disruptive manner in a social setting on the Internet with no apparent instrumental purpose" (Buckels et al., 2014). Other definitions of trolling are multifaceted, in that trolling can be inflammatory, used for the entertainment of a specific group (Coles & West, 2016) and even as a form of passing time (Thacker, 2012). Bishop (2014) elaborates on trolling, claiming it has many different forms. For example, inflammatory trolling occurs when a troll tries to pick a fight with someone in a chat room for their own pleasure, whereas kudos trolling is when two members of a group might try to get the better of each other peacefully (Bishop 2014). So if one encounters a flame troll, only the troll is having fun, whereas with kudos trolling, both individuals understand they are in a fair fight. And there are still many other types of trolls identified.

Thacker (2012) investigated trolling in the video gaming world. He took his study online to www.uk.gamespot.com, which is a popular gaming site in the United Kingdom. In addition, Thacker also utilized the website www.kingofhate.com (a gaming fan site). Thacker asked people who self-identified as trolls to explain why they engage in trolling. The many different trolls who responded reported playing a variety of video games. These mostly included multiplayer games such as Massive Multiplayer Online Role Playing Games (MMO RPG) and First Person Shooters (FPS), and also sports games like such as FIFA (a game about soccer). Participants most often reported textual trolling when it occurred online, yet when trolling occurred in a video game it was most often auditory trolling or griefing.

Griefing is defined as trolling meant to hurt the team the troll is playing on (Thacker, 2012). Trolls started hurting the team by blocking other players' shots in FPS games or by working against the team in a MMO RPG and games like FIFA. In Thacker's study, participants were asked if they had trolled and why they had done so. Interestingly, many trolls reported trolling simply as a way to pass the time.

Since trolling is a behavior found only on the internet, it is a relatively new field of study. While there are studies with a focus on trolling (Buckels et al, 2014; Thacker, 2012), they are few and far between. However, before the internet was developed, trolling behaviors may have been carried out as acts of bullying when done in person, instead of online. There is still much research to be done in this area. So, while trolling has many different forms, each form ties back to a basic sense of action, to have an effect on a targeted individual.

Since trolling is often aimed at one specific individual, or one specific group, there can be negative effects to being trolled. In fact, trolling has been linked to suicide in the cases of two specific popular YouTube personalities (Bishop, 2012). Megan Meier died in 2006, and then

Amanda Todd died in 2012 because of persistent trolling and abuse online. In these two tragic instances, trolling was taken to great extremes. The harassment of these individuals was constant and carried out by many different trolls even after their deaths.¹

Trolling is not always conducted on this scale. Many times, it is done through a specific website or chat room until the victim leaves. This means that the victim most likely felt alienated and alone. Prolonged exposure to such experiences could lead to depression or other negative side effects. Since trolling has occurred even after the victim has committed suicide (Bishop, 2012), this is clearly a behavior that needs to be reined in. Thus, trolling must be studied. It is necessary to learn about this behavior, and why people engage in trolling, to reduce the likelihood of trolling in general.

History doesn't record when the first internet troll showed up, but it probably started shortly after the introduction early forms of social media such as chat rooms. Before Twitter and such social media apps, trolls generally stuck to message boards where they could be anonymous. However, as internet sites started requiring login information tied to real email addresses, trolls had to get creative or move on to greener pastures. So, many trolls moved to websites such as 4chan, 8chan, and reddit (Stein, 2016). However, some trolls found new ways to troll, such as grief trolls on Facebook. These trolls enjoy making insults on webpages dedicated to the recently deceased, or even pretending to be the recently deceased to troll family members (Bishop, 2014).

Trolls are in general looking to get a reaction out of the people they target. Thus, one now-famous internet rule is, "don't feed the trolls." This insinuates that if a troll doesn't get a reaction, they will move on in search of a more reactive target. To a large degree, this is true as

¹ The trolling of the deceased suggests that trolls need not rely on a reaction from the intended victim; reactions from an online audience appear sufficient.

flame or shock trolls have been found to target people who do give a reaction (Thacker, 2012). However, for certain types of trolls the knowledge of having affected the target might be enough. Some shock trolls provide a link in a message board, which then takes their target to a website containing disturbing content. In this form of trolling, the troll may not receive a direct feedback from the recipient, but the victim may immediately leave the chat room (Thacker, 2012). Trolls who are looking to block communication may simply enjoy knowing that they have affected another person's experience on the internet. These trolls are more common in chat rooms (especially in the early days of the internet), and also on social media sites like Facebook.

Since trolls get many different forms of reactions, they may get different forms of satisfaction. This is what makes reducing trolling so difficult. Trolling can be tackled as an issue many different ways. However, there isn't currently a universally accepted strategy for reducing trolling. Some researchers suggest a gamification strategy, where trolls earn "points" for good behavior. Another strategy is to have monitors who watch chat rooms or social media sites, with the power to intervene when trolling gets out of hand. However, both ideas come with difficulties and neither has yet garnered wide acceptance. Thus, this study will move away from the issue of reducing trolling and will instead work towards understanding trolls. To understand trolling, this paper looks to a theory called Effectance Motivation (Breedlove, Abwender & Knapp, 2003, Kusyszyn, 1990, White, 1959).

Effectance Motivation

White's (1959) theory of Effectance Motivation was born from the early work of behavioral psychology. This paper was published at a time when B. F. Skinner and Piaget were among the heavyweight champions of current psychological theory. Given the context, it is understandable that White drew his theory from an earlier view of psychology, and in his paper

he drew a great deal from the theories that were influential at the time. The ideas underlying Effectance Motivation are worth tracing, thus White's original idea is worth studying.

White began his quest to explain effectance by defining it in the context of the development of competence. He stated that, "as used here, competence will refer to an organism's capacity to interact effectively with its environment" (White, 1959, p. 297) and he went on to say that his central argument was that the motivation behind attaining competence cannot be explained by the instincts and drives offered at the time. After that short preview, White began to make his case.

He started with exploratory behavior, and quoted Zimbardo and Miller (1958) on their study that reported, "The opportunity to explore a novel environment or to effect a stimulus change in the environment is the reinforcing agent" (p. 298). While this type of finding is a fundamental principle today, it was a novel find in White's time. Next, White moved on to summarize how exploration differs from fear. He proposed that fear and exploration are fundamentally different, since fear presents freezing and avoidance behaviors, whereas exploration is characterized by approach behaviors. White argued that the value to be found in exploration must be to effect a change in the environment. This suggested gaining mastery or power over the environment that is essentially pleasing. If this is true, then why do we have this desire to master our environment? White relied on the idea that an instinct to master is aimed towards developing ego functions because this gives the organism pleasure, and allows the organism to control and alter his environment (1959). Thus, the weight of the drive seemed to rest on pleasure. From that conclusion, White's belief that "running mild risks and solving problems are inherently rewarding" (p. 313) makes sense, since these behaviors fit under the

umbrella of gaining competence over one's environment. Thus, White began to explain his own ideas on what comprised Effectance Motivation.

White went on to describe effectance as a motive made up from impulses of neurons in the central nervous system. He further described effectance in a rather interesting way stating, "picturesquely, we might say that the effectance urge represents what the neuromuscular system wants to do when it is otherwise unoccupied or is gently stimulated by the environment" (White, 1959, p. 321). He then described effectance as having no peak, no summit. White postulated that effectance can be satiated with interacting with one's environment in a steady and continuous degree, but there are no final acts that eradicate the need for effectance. Unlike hunger, effectance could never be truly satisfied, except for the moments when an individual has an effect on the environment. White also described Effectance Motivation as persistent, in that the motivation is felt consistently whenever other needs and biological drives have been fulfilled. In addition, as the environment changes, so does the manner of interaction with the environment. This means that there will always be something new to have an effect on, and a new way to create an effect. White claimed that if we have no effect in our environment, we lose interest in the environment when we have explored it fully.

White believed that individuals have skills to gain from Effectance Motivation. He went on to argue that the outcome of this desire to interact with our environment is the skills that come from experience. Thus, White offered that Effectance Motivation was intended by nature to grant us skill in manipulating our environment. As a final thought, White offered that Effectance Motivation eventually ties in to larger adult life as a motivation that is no longer a necessity, yet one that is still present. White believed that Effectance Motivation's purpose was to give us skill

to interact with our environment, yet he simultaneously argued that Effectance Motivation never truly goes away either.

White's mantle was picked up many years later by Igor Kusyszyn (1990).² Kusyszyn applied White's ideas to gamblers. He believed that White's theory could be useful in explaining why gamblers continued to gamble, even after heavy losses or extraordinary wins. Kusyszyn studied Effectance as a trait-like individual difference variable that people had more of, or less of. In addition, Kusyszyn also refined the Effectance Motivation as a theory.

Kusyszyn broke Effectance Motivation down into six parts, which he calls concepts. The most applicable to the current study are his second and sixth concepts. His second concept is called effectance, and deals with an individual's need to affect their environment. Kusyszyn focused, as did White, on the idea that individuals needed to have a visible effect on their environment, and that having this effect is inherently rewarding. He then breaks down three different areas that we can affect. Kusyszyn argues that we seek to affect others, objects, and/or ourselves.

Kusyszyn says that individuals affect others with their words and actions, and that individuals really want to see a reaction from others in response to their actions and words. Objects refers to material things in the world. He argues that people seek to affect objects through creation, destruction, or manipulation. Lastly, Kusyszyn says that people seek to affect themselves through experiences, like eating, showering, and other sensation-producing actions.

The other major concept that is applicable to this study is the concept of blocks. In Kusyszyn's own words, "by blocks I mean any of the conditions that have been identified by

² Prior to Kusyszyn, the concept of E.M. had been popular among educational psychologists (e.g., Pearlman, 1982) interested in competence. They strayed from White's notion (that the goal of E.M. was to have a demonstrable effect on the environment) by suggesting that the goal of E.M. was to demonstrate mastery. That literature is not relevant to the present study.

clinicians, that is, tension, fear, anxiety, ego defense mechanisms, feelings of self-doubt, depression, psychosomatic pains, high blood pressure, etc. Blocks may be impediments to effectance or symptoms of non-effectance” (Kusyszyn, 1990, p.165). In sum, blocks are personal or interpersonal issues that get in the way of an individual having an effect on their environment. This could include an issue such as a lack of social competence. If an individual lacks social competence, they for example will likely be unable to achieve a desired reaction from a conversation partner. This would lead to a need to experience effectance in some other manner.

The principle of least effort is Kusyszyn’s 5th concept, and is one that might apply to trolls. Kusyszyn defines this principle as the idea that “humans would rather do less than more.” (1990, p. 165). In other words, people like to have the maximum effect possible for as little work as possible. This concept can be directly applied to trolls. Choosing to create an effect socially through positive actions requires much more effort than creating an effect through starting a fight online. Since trolls prefer the easiest possible method to create an effect, the principle of least effort seems to be at play.

The concept of effectance itself is particularly relevant to trolls. It is possible that trolls engage in attention-getting behavior to satisfy effectance needs. Trolls certainly do have an effect on their online environment; trolls often are the cause of arguments in comment sections. The adage, don’t feed the trolls, is a common rule for interaction on the internet. The concept of blocks also feeds into a troll’s behavior. If trolls lack social competence, this could be seen as a block. A lack of social skills could lead trolls to get a reaction out of other people through any means necessary. A troll will find that saying something controversial is easier than utilizing empathy or sympathy in a conversation.

Kusyszyn's theory proved useful in a study by Breedlove et al. (2003), who looked at how dispositional levels of Effectance Motivation interacted with positive or negative experiences in an interview to influence subsequent effectance behaviors. Breedlove and colleagues were essentially looking to see if people who wanted to have an effect on their social environment but couldn't would be more likely to later inflict punishment rather than reinforcement on their peers. Every participant was given the choice to boo or applaud their interview partner (who was a confederate randomly assigned to be either engaging and forthcoming in the interview or reticent and unresponsive) at the end of the interview. The authors found that participants who are higher in effectance do choose to boo, which should create a stronger impact on the partner than applauding. This suggests trolls (if they are high in effectance) troll precisely because it gets a strong reaction. Moreover, Breedlove et al. (2003) found that those who lacked social competence and were high in effectance more often chose to boo than applaud. Thus, it is proposed in the current study that people who lack social competence will take the route that gets them a reaction even if it is negative.

Social Competence

The Beginnings of Social Competence. Noting a distinct lack of research on the construct of social competence, Levinson and Gottman (1978) began studying the dimensions of self-assertion and dating. In their study, they referenced the idea of social competence many times, but their true focus was to create questionnaires that could successfully differentiate people who had these two situational skills from those who didn't. Their questionnaires were able to successfully distinguish participants who had gone through workshops designed to sharpen dating and assertions skills from those who had not. Levinson and Gottman thus affected a change in the study of social competence by operationally defining social competence and

creating questionnaire to measure it. Miller and Lefcourt (1982) followed the example of Levinson and Gottman by creating their own questionnaire to assess social intimacy by examining married couples and their closest relationships. However, some researchers became worried about construct creep, noting for example that the notion of social competence had begun to overlap with construct of self-esteem (Waters, Noyes, Vaughn, & Ricks, 1985).

While social competence and self-esteem couldn't be seen as the same construct, Waters et al. mention operating on the "implicit theory that good things go together" (1985, p. 521), leading to a decision to look at the relationship between social competence and self-esteem using psychologists as their participants. Waters et al. wanted to determine if actual psychologists would define social competence similarly to self-esteem, so they had psychologists Q-Sort definitions. A different set of psychologists was then asked to rate preschool children on their social competence and self-esteem, using the definitions set forth earlier by their colleagues. When social desirability was controlled for, the concepts of social competence and self-esteem were very closely related even when social desirability was controlled (Walters et al., 1985). Levinson and Gottman, Miller and Lefcourt, and Waters et al. all influenced the study and measurement of social competence. Researchers (Cavell, 1990; Gurtman, 1999) in the following years attempted to refine this construct.

Refining the Construct. Independent of the creation of a good social competence questionnaire, a universal definition for social competence was still widely debated. Cavell (1990) tried to synthesize the available literature into one complete theory, but the theory he created wasn't able to completely capture the construct of social competence.

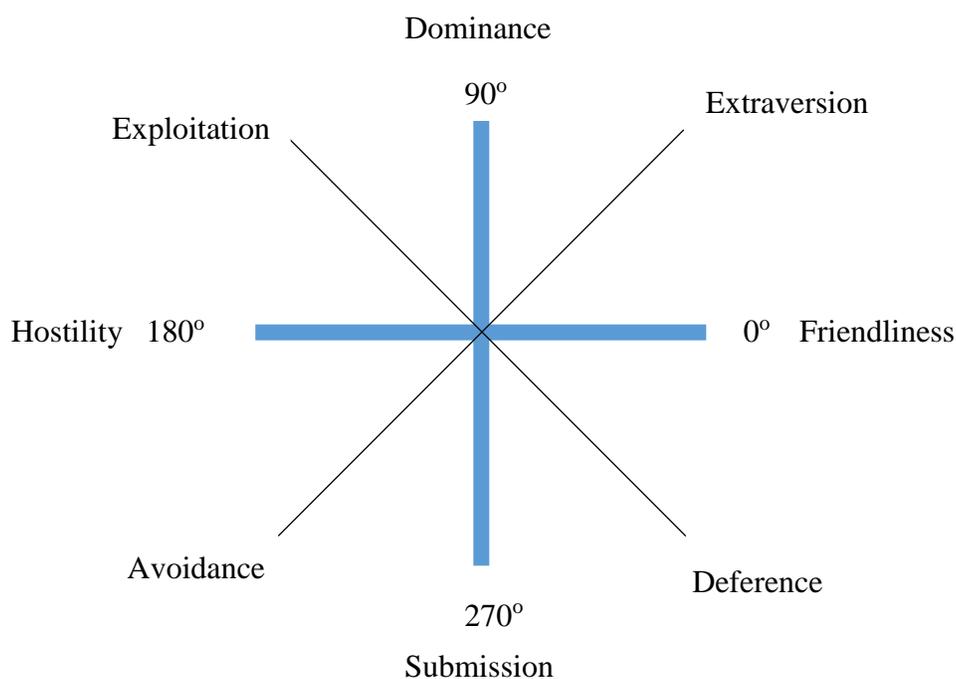
Cavell (1990) developed a model of social competence comprised of three basic components. The first component is called social adjustment. Cavell defines this as "the extent to

which individuals are currently achieving societally determined, developmentally appropriate goals” (1990, p. 117). This includes social interactions with friends, family, and the individual’s achieved social status. The next component is called social performance.

Social Performance treats social actions like a play on a stage; social performance is measured based on how well the individual reacts to the situations they experience. Good social performance dictates reading the social rules in a specific context and reacting according to those rules. Finally, the third component is labeled social skills. These are the specific skills that allow social actions to occur. These skills include “stimulus encoding, decision making, and response enactment.” (Cavell, 1990, p. 118). Cavell also included emotion regulation skills under the heading of social skills, as it requires skill to keep emotions in check during difficult situations. Thus, social competence looks different for each individual. Cavell’s theory didn’t prove to be popular as subsequent researchers were unable to make use of his model, and Gurtman (1999) attempted to create a new model.

Gurtman broke the concept of Social Competence into three domains: Dominance, Extraversion, and Friendliness. He then suggested that each of these axes rests on a circle, and that each domain would have an opposite (see Figure 1, adapted from Gurtman, 1999).

Figure 1



Friendliness sat at 0 degrees, and at 180 degrees sat its opposite, hostility. Gurtman states that friendliness skills are all about social facilitation, “have the purpose of maintaining social interactions at a rewarding level for all participants and encouraging (reinforcing) the behavior and interest of the other. The elements of behavior comprising them . . . convey impressions of warmth, friendliness, sensitivity, and likability.” (1999, p. 242) Warmth and sensitivity are words that are often used to describe empathy. Thus, it is likely that Gurtman’s Friendliness construct would overlap with the construct of empathy. Gurtman’s Friendliness also fits with the definition of social competence given by Rose-Krasnor (1997).

In 1997, Rose-Krasnor gave a definition of Social Competence that is fitting for the current study, since the definition focuses positive behaviors being key to social competence. They described social competence as, “the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across

settings” (p. 113). Trolls will turn to a socially negative behavior to achieve the effect they desire. Thus, it is logical that trolls will not fit this definition of a socially competent individual. *The Interpersonal Competence Questionnaire*. Buhrmester, Furman, Wittenberg and Reis (1988) developed the Interpersonal Competence Questionnaire. They included five subscales: Initiation, Negative Assertion, Disclosure, Emotional Support, and Conflict Management. Each subscale was an attempt to measure a different facet of social competence (Buhrmester et al., 1988). They found that the questionnaire demonstrated good validity and reliability stating, “The measure is reliable, has a sound internal structure, and correlates sensibly with other theoretically related variables” (Buhrmester et al., 1988, p. 1007). Since then, many different studies have used the ICQ to study a diverse range of issues such as Facebook use (Yang & Brown, 2015) and teenage conflict (Vennum & Fincham, 2011).

The Interpersonal Competence Questionnaire (ICQ) has been used by many different researchers, and proved quite useful throughout its lifetime. While there is no universally agreed upon definition for social competence, many researchers utilize this particular questionnaire, which points to some agreement on this questionnaire’s usefulness. Hatcher and Rogers (2009) used the ICQ (as well as other social competence measures) to validate their new measure; the Inventory of Interpersonal Skills (IIS). They used the ICQ to measure the IIS’s positive life skills, since Gurtman (1999) found that the ICQ mainly correlates with things like dominance, extraversion, and friendliness.

Vennum and Fincham (2011) also used the ICQ to demonstrate a new measure’s convergent validity. The researchers studied how adolescents made decisions when undergoing conflict. They decided to create a new questionnaire, and were quite successful. The researchers took the Conflict management subscale and compared their new measure to the results from the

ICQ. Vennum and Fincham successfully used the ICQ to create a new scale called the RDS (Relationship Deciding Scale), which measures thoughtfulness in relationship decisions. The researchers were able to find that thoughtfulness in decisions was predictive of long term benefits such as relationship satisfaction.

In fact, Yang and Brown (2015) and Jenkins-Guarnieri, Wright and Johnson (2013) also utilized this particular questionnaire when engaging in studies that focused in part on Facebook use. Both studies had good results, which shows that the ICQ does lend itself to studies of online behavior. Thus, even though the ICQ is almost 40 years old, each scale has been utilized recently in a series of different studies (Gurtman, 1999; Hatcher & Rogers, 2009; Vennum & Fincham, 2011; Yang & Brown, 2015).

Social Competence and the Prediction of Behavior. So far, the definition of social competence is still debated in the literature. For the purpose of this paper, Rose-Krasnor's definition is most appropriate, as this definition points out that prosocial behaviors are a large part of being socially competent. For studying social competence, the ICQ has proven itself to be a useful and valid questionnaire, and will be the measure utilized in this study. In addition, the Emotional Support subscale asks about positive (and empathetic) behaviors, such as "Being a good and sensitive listener for a companion who is upset" (Buhrmester et al., 1988, p. 994) Specifically, Gurtman (1999) showed that the ICQ subscale Emotional Support maps onto Gurtman's construct of Friendliness. This concept of Friendliness is very close to the idea of empathy. Thus, it is possible that a lack of empathy could be part of a lack of social competence.

Most recently (2015), Yang and Brown looked at social competence and online behavior. They studied how socially competent individuals use Facebook, a prominent social media site. Yang and Brown argued that social support is necessary for health and Facebook allows socially

competent users to establish the social support they need. Using the ICQ, Yang and Brown sought evidence that people who are socially competent will utilize a social media site like Facebook to keep in touch with other people instead of utilizing it as a gaming app or dating site. They found individuals who used Facebook to game or to pursue romantic relationships scored lower on competence than individuals who used Facebook to stay connected. Clearly, the way people use the internet is connected to social competence.

Robinson et al. (2013) studied what happens when social competence is lacking. Thus, Robinson et al. offer a new operational definition; “[social competence] is defined in terms of the extent to which one’s ratings of the effectiveness of a behavior in a social scenario match consensus norms” (p. 1269). Robinson et al. used this definition as an inverse predictor of reactive aggression. In other words, people who are low in social competence will be more likely to react aggressively than those who are high in social competence. Across three different studies conducted, Robinson et al. (2013) found that low social competence was indeed predictive of reactive aggression. The authors suggest that a lack of social competence leads to using the wrong (i.e., aggressive) behaviors in a social situation that calls for tact and sensitivity. The current study will look to see how low social competence and such aggression might link with trolling.

Bringing it all together

As previously mentioned, social competence is “the ability to achieve personal goals in social interaction while simultaneously maintaining positive relationships with others over time and across settings” (Rose-Krasnor, 1997, p.113). Thus, to be socially competent, the capacity for Friendliness must be present (Gurtman, 1999), most likely in the form of empathy. Based on their behavior, trolls may be lacking in empathy and thus would score low on social competence.

It is possible that trolls engage in socially negative (and hurtful) behaviors due to lack of empathy. The negative behaviors get a reaction out of the victim, which is the effect trolls desire.

The current study seeks to tie Effectance Motivation, Social Competence, and Trolling together. Effectance Motivation is the drive to have an obvious effect on the environment. When an individual is low in social competence (and likely low in empathy), they satisfy the need for effectance through negative behaviors. This can lead to trolling, a behavior seen on the internet quite often. Thus, a need for high effectance combined with low social competence is predicted to lead to troll-like behavior on the internet.

Hypothesis

This study has one major hypothesis; high need for effectance and low social competence will predict troll-like behavior. Specifically, it is expected that main effects for high Effectance Motivation and low social competence will appear. In addition to these main effects, it is predicted that an interaction effect like that found by Breedlove et al. (2003) will also be shown. An individual who is both high in Effectance Motivation and low in social competence is expected to be the most likely to troll.

Method

A total of 179 participants (121 female, 58 male) completed the study. Their ages ranged from 18 to 30 years (mean = 19.05 ± 1.94 years). All were enrolled in an Introductory Psychology course at a medium-sized public university and received credit toward a course requirement for their participation.

Measures

The following questionnaires were used (see Appendix for copies):

Balanced Inventory of Desired Responding (BIDR; Paulhus, 1991). The BIDR is intended to evaluate a social desirability response bias among participants (i.e., a tendency to fill out self-report questionnaires inaccurately by endorsing items that make oneself appear especially virtuous and/or faultless). The 40-item measure consists of items describing behaviors indicative of extreme virtue that very few people could honestly endorse regularly engaging in or, alternately, unflattering behaviors that most people perform regularly but that admission of would compromise their positive self-presentation. Each item is rated on a 7-point Likert scale ranging from “not true” to “very true”; individual item responses are then recoded such that extremely socially desirable responses (e.g., 6 or 7 on an items such as “I never cover up my mistakes” are scored as 1 and any other response is coded as 0, yielding a possible score range of 0-40. Paulhus (1991) detailed the testing of the BIDR to show both convergent and discriminant validity. BIDR scores can, if necessary, be used to statistically adjust scores obtained from other measures that are susceptible to social desirability bias (e.g., self-report measures of trolling or social competence).

Global Assessment of Internet Trolling (GAIT; Buckels et al., 2014). The 4-item GAIT utilizes item such as “The more beautiful and pure a thing is, the better it is to corrupt” to which

participants give a 1 (strongly disagree) to 4 (strongly agree) response. The measure was found to be internally consistent ($\alpha = .82$). GAIT items were interspersed among other questionnaires. This questionnaire is combined with another of the researchers' own creation in order to get a more comprehensive evaluation of online trolling behaviors.

Social Media Familiarity Questionnaire. The second questionnaire used to measure trolling was called the Social Media Familiarity Questionnaire. It included 15 items that asked participants to respond to two different sets of questions. The first 10 questions asked how frequently participants utilized different websites, and participants responded on a scale from 1 (never) to 7 (more than once a day). The next five questions used the same response scale used on the GAIT. These face valid questions asked about specific trolling behaviors (e.g., "I like watching other people get worked up over a thread I started.").

Interpersonal Competence Questionnaire (ICQ; Buhrmester et al., 1988). This measure of social competence uses a Likert scale, from 1 (I'm poor at this) to 5 (I'm extremely good at this). There are 5 subscales (Initiation, Negative Assertion, Disclosure, Emotional Support, and Conflict Management), each includes eight questions for 40 questions total. The questionnaire demonstrates good internal consistency, with subscales ranging from $\alpha = .77$ to $.87$. Buhrmester et al. compared the ICQ to a number of different questionnaires (Dating and Assertion Questionnaire; Social Reticence Scale; Social Skills Inventory) to test for convergent and divergent validity, and reported that the ICQ fared well. The ICQ has been successfully employed in studies relating social competence and online behavior (e.g., Walter & Holling, 2008; Yang & Brown, 2015). Of primary interest is the Emotional Support subscale, which is expected to be an especially strong predictor of trolling, based on Gurtman's (1999) analysis that

provides a good rationale for believing this particular subscale will capture the social skills that trolls are thought to lack.

Effectance Questionnaire (Kusyszyn & Lamont, 1983). Dispositional effectance motivation was measured using the Kusyszyn-Lamont Effectance Questionnaire. This 80-item questionnaire, utilizing a true/false response format, has 80 statements intended to measure EM in three domains: Effect on Self (e.g., “I am always trying to improve myself”), Effect on Objects (e.g., “I like to balance things on my fingers”), and Effect on People (e.g., “I always like to make an impression on people I meet”). Lamont (1983) validated this measure utilizing criterion groups and a multitrait-multimethod matrix; good validity was found with all of the above methods. Likewise, solid internal consistency (KR-20) values were reported for the Self (.71), Objects (.84), and People (.86) subscales. In this study, individuals who scored particularly high on the subscale pertaining to Effect on People, which is expected to correlate with trolling, were of most interest.

Results

Descriptive Statistics

Except for question 14, the Social Media Familiarity Questionnaire lacked predictive power. Thus this question was added to the GAIT and treated as one questionnaire in order to minimize the number of analyses and attendant risk of Type I error. Table 1 shows the internal consistencies for each questionnaire used in the current study, including the “Enhanced GAIT.” The alpha for each questionnaire is adequate for the purposes of this study.

Table 1. Internal Consistency for Scales

	BIDR		ICQ Scales			Enhanced GAIT	
	Initiation	Negative Assertion	Disclosure	Emotional Support	Conflict Management		
Alpha	.74	.81	.85	.79	.82	.69	.63

As the correlations in Table 2 show, the basic relationships between trolling, Effectance Motivation, and Social Competence are consistent with the hypothesis. More specifically, a significant positive correlation exists between trolling (Enhanced GAIT) and Effect on People, as does a significant negative correlation between trolling and ICQ Emotional Support. Another negative correlation is seen between trolling and ICQ Conflict Management, although preliminary regressions indicated that this subscale did not add to the prediction of trolling above and beyond the aforementioned variables. Thus, the informationally redundant Conflict Management subscale was not included in the main analysis. The various nonsignificant correlations support the soundness of the results. Had correlations been found between trolling and “extraneous” subscales (e.g., Effect on Self), which should have nothing to do with trolling), there would be cause for concern.

Table 2

Basic Correlations between Measures

Measure	BIDR	ICQ Initiation	ICQ Negative Assertion	ICQ Disclosure	ICQ Emotional Support	ICQ Conflict Management	EQ Self	EQ Objects	EQ People
ICQ Initiation	.102	-							
ICQ Negative Assertion	.235**	.577**	-						
ICQ Disclosure	.052	.612**	.351**	-					
ICQ Emotional Support	.285**	.327**	.356**	.367**	-				
ICQ Conflict Management	.319**	.306**	.190*	.347**	-.358**	-			
EQ Self	.067	.247**	.218**	.164*	.289**	.225**	-		
EQ Objects	.039	.115	.122	-.004	.109	.105	.194**	-	
EQ People	-.081	.299**	.241**	.250**	.112	-.028	.346**	.321**	-
Enhanced Gait	-.335**	.068	.079	-.019	-.358**	-.182*	-.073	.025	.194**

Note. * $p < .05$; ** $p < .01$

Basic descriptive statistics (Table 3) are presented by participant sex, although that variable was not the subject of the study's hypothesis. T-test indicates a significant effect of sex on Kusyszyn-Lamont Effectance Questionnaire scores, as well as on the Enhanced GAIT. Scores on the Emotional Support subscale on the ICQ were not significantly different between sexes.

Table 3. Means (Standard Deviations) of Predictor and Criterion Variables

	Men	Women
EQ Effect on People	17.8 (4.2)**	15.56 (4.71)**
ICQ Emotional Support	31.7 (4.59)	32.36 (4.90)
Enhanced GAIT	1.96 (.54)***	1.68 (.46)***

p< .05 *p< .001

Data Analytic Plan

Regression analysis was used for hypothesis testing, as the study is only looking at relationships between the predictor and the criterion variables. This study used a hierarchical regression with forced entry of predictor variables. The two main effect variables (Effect on People; Emotional Support) were entered as a block on Step 1, followed by an interaction effect variable (calculated as the arithmetic product of the participants' scores on the main effect measures) on Step 2. Because the social competence and trolling measures correlated significantly with the BIDR, all variables were adjusted to control for social desirability bias. This was done by regressing each predictor and criterion variable on BIDR and saving the residualized scores; the residualized scores contain the variance in the parent score excluding

variance attributable to social desirability bias. Correlations between residualized scores and parent scores ranged from .94 to .99.

Regression Analysis

Overall, the results show that the Emotional Support subscale and the Effect on People subscale together account for 13.3% of the variance in trolling. Table 4 shows that Emotional Support was most predictive of trolling, by itself accounting for 8.4% of the variance in the trolling. The Effect on People subscale accounted for a further 4.9% of the variance in trolling behavior. Finally, there is a significant interaction effect, where a further 3.2% of the variance is accounted for. Decomposition of the interaction effect revealed that the combination of high Effectance Motivation and low Social Competence predicted higher Enhanced GAIT scores than would have been expected based on the main effects alone. This supports the hypothesis.

Table 4. Stepwise Regression Results

Predictor	ΔR^2	β	$p <$
Step 1			
Emotional Support	.084	-.332	.001
Effect on People	.049	.223	.002
Step 2			
Interaction Effect	.032	-.180	.010

Discussion

Overview

This study looked into the research question: Will people low on social competence and high on effectance be likely to troll? Indeed, the answer is yes. The current study revealed that low social competence accounted for 8.4 % of the variance in trolling and effectance accounted for another 4.9 % of the variance. The ICQ lent itself to several concepts that are all important to social competence, yet the subscale of Emotional Support proved the most predictive of trolling. This makes sense, as the questions in the Emotional Support subscale seem to measure the construct of empathy. Thus, this idea of empathy seems to be worth looking at further. In addition, this study showed that Effectance Motivation does indeed correlate with trolling. Specifically, this study showed that the Effect on People subscale correlated with the trolling measure (the Enhanced Gait) positively and significantly. Finally, this study did reveal an interaction effect in the analysis, such that the participants with both high Effectance Motivation and low Social Competence reported particularly high levels of trolling.

Interpretations

Clearly individuals who self-report both low Emotional Support and high Effect on People scores were most likely to report trolling. This is interesting but should not overshadow the main effects presented in the analysis. The strongest predictor of trolling was Emotional Support, with Effect on People coming second. The interaction effect accounted for relatively little additional variance in the sample's trolling behavior. Thus, this discussion will focus on the main effects associated with the Emotional Support subscale and the Effect on People subscale.

The Emotional Support subscale mostly measures empathy, which was the strongest predictor of trolling. Empathy is generally split into two types: cognitive empathy and emotional

empathy (O'Meara, Davies & Hammond, 2011). Cognitive empathy refers to being able to understand what another person might be thinking, whereas emotional empathy refers to being able to understand what another person might be feeling (O'Meara et al., 2011). Since trolls sometimes engage in particularly nasty behaviors, it is more likely that a lack of emotional empathy – that is, an utter disregard for how the victim will feel – is predictive of trolling. The other predictor variable in this study was Effectance Motivation.

As expected, the subscale Effect on People was the most predictive of trolling. This connection serves to support the idea that trolls really do want to have an effect on their social environment. This leads to the adage “don't feed the trolls,” since a troll who doesn't get an effect simply moves on to a more reactive target. This might be due to the nature of destructive acts, which cause a large and immediate effect. In contrast, constructive acts take much longer to create an effect. Thus, it is unsurprising that a troll might choose a socially destructive act. Lastly, it is important to note that Effectance Motivation is a trait-like individual difference variable. In other words, different people will desire to have a different level of effect. Thus, this line of research fits in the literature that studies personality characteristics.

Connections to Personality Literature

The Dark Tetrad has recently come into a sharper focus in the psychology literature (Buckels et al. 2014; Domes et al. 2013; O'Meara et al. 2011). As the literature has progressed towards understanding these personalities better, the link between empathy and the Dark Tetrad has been informed. This suggests a whole new area of study when it comes to trolling and personality.

For example, sadists were of particular interest to Buckels et al. (2014).³ In their measure of trolling behavior, they found that individuals who were high on “everyday sadism” (i.e., individuals who are below clinical levels on sadistic behavior [Buckels, Jones, & Paulhus, 2013]) were more likely to troll. Buckels et al. believed that this was because trolls find trolling to be enjoyable, in the same way that everyday sadists find causing pain enjoyable (Buckels et al., 2013). This does fit well with the known literature on sadism, which says that sadists engage in hurtful behaviors because they enjoy it (Buckels et al., 2013; Paulhus, 2014). In addition, it is interesting to note that sadists lack emotional empathy (O’Meara et al., 2011). Since trolling and sadism have been strongly connected by Buckels et al. (2014) it is reasonable to expect that future research on trolls would also find a lack of emotional empathy to be a key ingredient in their behavior.

Sadism has also been known to predict violent video gaming enjoyment. In other words, people who score higher on sadistic tendencies also tend to play violent video games more often. This is interesting to note, as trolls also tend to prefer violent video games such as First Person Shooters (FPS; Thacker, 2012). This reveals another connection between sadists and trolls that would be relatively easy to test. Yet, sadists are not the only dark personality that lacks this emotional empathy.

Psychopaths also lack this emotional empathy, as has been demonstrated in a number of studies (Domes et al., 2013; Paulhus, 2014; Pfabigan et al, 2015). This is interesting, as psychopaths have a slightly different behavioral pattern from sadists, yet they share the emotional empathy deficit. For example, sadists are more likely to inflict pain for their own pleasure, yet psychopaths are more callous to others’ pain. Psychopaths tend to hurt others to get

³ Sadism as a personality characteristic is unrelated to sexual sadism, a paraphilic behavior.

what they want, rather than hurting others for the sake of causing pain. In the Buckels et al. study, the authors mention that trolling did correlate with the Dark Tetrad, but the overlap came mostly from sadism. Perhaps this is because the study focused on trolls who were simply looking to get personal gratification. There may be more significant associations between trolls and psychopathy when the focus changes from the victims' reaction to the troll's intent. Alternatively, the weaker relationship between psychopathy and trolling could lie in the fact that only a subset of psychopaths (so-called primary psychopaths) are notably empathy-deficient (Lishner et al., 2015). Or perhaps psychopaths simply have lower Effectance Motivation than sadists, which also could plausibly account for the less robust connection between trolling and psychopathy.

People with Machiavellian tendencies are described as "master manipulators" (Paulhus, 2014, p. 421). Paulhus describes Machiavellians as people who will lie and cheat to get what they want, with no remorse. Once again, this type of behavior can be related back to a lack of empathy. People who will lie and steal from others are not likely to be high on the ability to care about how others feel. This has been shown true by Jonason and Kroll (2015), however their study did not focus specifically on the emotional empathy that other studies focused on when examining psychopathy (Domes et al. 2013; Pfabigan et al., 2015). Thus, future research could look to see if any specific trolling behaviors might correlate with this type of Machiavellian trait, as well as look into the relationship between Machiavellianism and emotional empathy.

The last member of the Dark Tetrad is narcissism. Curiously, narcissism was actually negatively correlated with trolling behaviors in the past (Buckels et al., 2014). Jonason and Kroll (2015) suggested that narcissists seem to need to employ empathy in order to get their needs met by others, so it is perhaps somewhat natural that narcissists don't show the lack of emotional

empathy seen in the other three personality types of the Dark Tetrad. It is therefore highly worth noting that the only "Dark Personality" that shows some degree of empathetic behavior also scores negatively on measures relating to trolling (Paulhus, 2014). This points even more strongly to the connection between trolling and a lack of empathy.

This lack of empathy does contrast with the "kudos troll" that Bishop (2014) discusses. In his discussion, Bishop describes a kudos troll as a troll who might engage in a "ritual where two members mutually try to get the better of each other peacefully" (Bishop, 2014, p. 10). This type of trolling is seen as fundamentally different from other types of trolling meant to hurt or disrupt other people, which suggests that there may be a difference in who participates in kudos trolling. Thus, it would be worth studying this behavior and considering the relationship between kudos trolling and empathy. It is reasonable to suggest kudos trolls might still have some, possibly high, measure of empathy.

Overall, the Buckels et al. (2014) findings that link dark personality traits to trolling seem to be based in the lack of emotional empathy. The current study hinted at this connection, but more research is required to confirm this idea. In addition, there are more connections between the individual dark personality traits and specific trolling behaviors that are also worth studying. Thus, there is still much work to be done in the realm of personality and online behavior.

Limitations

There are a few concerns to address within the study; namely the use of a convenience sample and the use of online data collection. First, this study utilized freshman from a four year State University. Thus, our sample is demographically limited. However, the individuals included as participants might also be a fairly representative sample of internet users. Thus, this particular concern isn't too compromising to the study's results.

Secondly, the nature of our criterion group raises concerns. It is entirely possible that trolls won't take any research study, especially an online one, seriously and instead troll the study itself. However, the results gained from the Effect on People subscale indicates that even trolls responded appropriately to the questionnaires. For example, the Enhanced Gait and the Effect on People subscales correlated positively. This is interesting since, even though both measures are inquiring about behaviors that affect other people, the Enhanced Gait asks about socially negative behaviors while the Effectance Questionnaire asks about more positively or neutrally valenced questions. This strengthens the findings, as construct validity comes into play when face validity is lacking. Since the questionnaires ask different types of questions, it is encouraging that the two correlate.

In addition, this study revealed that the other two subscales on the Effectance Questionnaire (viz., Effect on Self; Effect on Objects) did *not* correlate with the Enhanced Gait. Such results help confirm that a valid sample of behavior has been obtained. Since the Effect on Object and the Effect on Self subscales did not – and should not – correlate with trolling, even though the subscales correlated with each other, the data appear to consist of honest answers from a potentially disruptive sample.

Conclusion and Future Directions

Trolls need a reaction. In general, starving trolls of the reaction they seek is enough to get a troll to “move on.” However, this is a short-term solution to a long-term problem. The internet is still growing, and this allows the opportunity for more trolls to appear (Stein, 2016). Thus, it might be time to seriously study trolling as a problem. Regarding trolling as a serious problem is the first step to finding a solution. The next step in finding a solution is to better understand the trolls themselves. Empathy seems to play a key role in trolling. However, the two subtypes of

empathy (emotional and cognitive) have yet to be fully understood vis-à-vis this behavior. Thus, in order to study trolling, it would be wise to study empathy.

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Appendix

Questionnaires used in this study

Interpersonal Competence Questionnaire

Please indicate your level of ability and comfort in handling each of the following situations. Use the following 5-point rating scale:

- 1 = "I'm poor at this; I'd feel so uncomfortable and unable to handle this situation, I'd avoid it if possible"
- 2 = "I'm only fair at this; I'd feel uncomfortable and would have lots of difficulty handling this situation"
- 3 = "I'm OK at this; I'd feel somewhat uncomfortable and have some difficulty handling this situation"
- 4 = "I'm good at this; I'd feel quite comfortable and able to handle this situation"
- 5 = "I'm EXTREMELY good at this; I'd feel very comfortable and could handle this situation very well"

1. Asking or suggesting to someone new that you get together and do something, e.g., go out together.
2. Telling a companion you don't like a certain way he or she has been treating you.
3. Revealing something intimate about yourself while talking with someone you're just getting to know.
4. Helping a close companion work through his or her thoughts and feelings about a major life decision, e.g., a career choice.
5. Being able to admit that you might be wrong when a disagreement with a close companion begins to build into a serious fight.
6. Finding and suggesting things to do with new people whom you find interesting and attractive.
7. Saying "no" when a date/acquaintance asks you to do something you don't want to do.
8. Confiding in a new friend/date and letting him or her see your softer, more sensitive side.
9. Being able to patiently and sensitively listen to a companion "let off steam" about outside problems s/he is having.
10. Being able to put begrudging (resentful) feelings aside when having a fight with a close companion.
11. Carrying on conversations with someone new whom you think you might like to get to know.
12. Turning down a request by a companion that is unreasonable.
13. Telling a close companion things about yourself that you're ashamed of.
14. Helping a close companion get to the heart of a problem s/he is experiencing.
15. When having a conflict with a close companion, really listening to his or her complaints and not trying to "read" his/her mind.
16. Being an interesting and enjoyable person to be with when first getting to know people.
17. Standing up for your rights when a companion is neglecting you or being inconsiderate.
18. Letting a new companion get to know the "real you."
19. Helping a close companion cope with family or roommate problems.
20. Being able to take a companion's perspective in a fight and really understand his or her point of view.
21. Introducing yourself to someone you might like to get to know (or date).
22. Telling a date/acquaintance that he or she is doing something that embarrasses you.
23. Letting down your protective "outer shell" and trusting a close companion.
24. Being a good and sensitive listener for a companion who is upset.
25. Refraining from saying things that might cause a disagreement to build into a big fight.
26. Calling (on the phone) a new date/acquaintance to set up a time to get together and do something.
27. Confronting your close companion when he or she has broken a promise.
28. Telling a close companion about the things that secretly make you feel anxious or afraid.
29. Being able to say and do things to support a close companion when s/he is feeling down.
30. Being able to work through a specific problem with a companion without resorting to global accusations ("you always do that").
31. Presenting good first impressions to people you might like to become friends with (or date).
32. Telling a companion that he or she has done something to hurt your feelings.
33. Telling a close companion how much you appreciate and care for him or her.
34. Being able to show genuine empathetic concern even when a companion's problem is uninteresting to you.
35. When angry with a companion, being able to accept that s/he has a valid point of view even if you don't agree with that view.
36. Going to parties or gatherings where you don't know people well in order to start up new relationships.
37. Telling a date/acquaintance that he or she has done something that made you angry.
38. Knowing how to move a conversation with a date/acquaintance beyond superficial talk to really get to know each other.
39. When a close companion needs help and support, being able to give advice in ways that are well received.
40. Not exploding at a close companion (even when it is justified) in order to avoid a damaging conflict.

GAIT

For the following questions, please choose an answer 1 through 5, from 1 (strongly disagree) to 5 (strongly agree).

I have sent people to shock websites for the lulz

I like to troll people in forums or the comments section of websites

I enjoy griefing other players in multiplayer games

The more beautiful and pure a thing is, the more satisfying it is to corrupt

For the following questions, please answer in the space given following each question.

“How many hours per day do you spend on the Internet?”

Please indicate yes or no for the following question: Do you post comments on websites (e.g., YouTube, news sites, forums, etc.) even occasionally?

If yes, how many comments per day do you create on websites (e.g., YouTube, news sites, forums, etc.)?

SMFQ

Below is a list of social media websites. Please select a number 1 through 7 to indicate how often you use each site/app. A response of one would mean the site is never used, 2 means used once or twice a month, 3 means once every two weeks, 4 means once a week, 5 means multiple times a week, 6 meaning once a day, and 7 meaning used more than once a day.

Facebook	1 2 3 4 5 6 7
Instagram	1 2 3 4 5 6 7
Reddit	1 2 3 4 5 6 7
Snapchat	1 2 3 4 5 6 7
Twitter	1 2 3 4 5 6 7
Voat	1 2 3 4 5 6 7
Yik/Yak	1 2 3 4 5 6 7
Youtube	1 2 3 4 5 6 7
4 chan	1 2 3 4 5 6 7
8 chan	1 2 3 4 5 6 7

For the next 5 questions about online behavior, please choose a number 1 through 4. An answer of 1 means strongly disagree, an answer of 4 means strongly agree.

I avoid emotionally charged issues to keep the peace. (R)

I like watching other people get worked up over a thread I started.

Other people respond positively to me online. (R)

I see other online user's reactions to my content as a source of entertainment.

I try not to rock the boat when using social media.

Please fill out the following questions in the box provided:

Age:

Gender: