



# Emotion regulation, procrastination, and watching cat videos online: Who watches Internet cats, why, and to what effect?



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## ARTICLE INFO

### Article history:

Available online 12 June 2015

### Keywords:

Internet use  
Guilty pleasure  
Procrastination  
Enjoyment  
Social media  
Cats

## ABSTRACT

Anecdotes abound about the frequent use of the Internet to view cat-related media. Yet, research has yet to seriously address this popular culture phenomenon rooted largely in social media platforms. It is possible that viewing of online cat media improves mood, but this activity may also foster negative outcomes linked to using the Internet for procrastination. The present survey of Internet users ( $N = 6795$ ) explored the correlates of viewing “Internet cats,” motivations for consuming this media, and its potential effects on users. It also tested a conceptual model predicting enjoyment as a function of the relationships between procrastination, guilt, and happiness. Results reveal significant relationships between viewing and personality types and demonstrate conceptual nuances related to the emotional benefits of watching Internet cats.

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## 1. Introduction

Anecdotes and news reports suggest that viewing videos and photos of cats is a common use of the Internet. As of 2014 there were more than 2 million cat videos posted on YouTube.com with nearly 26 billion total views (Marshall, 2014). That is an average of 12,000 views for each cat video—more views-per-video than any other category of YouTube content (Marshall, 2015). There are even annual in-person festivals devoted to “Internet cats,” including the Internet Cat Video Festival in Minneapolis and Chicago (Walker Arts Center, 2015) as well as the Los Angeles Feline Film Festival (LA Feline Film Festival, 2015).

Internet users spend so much time with cat-related media they have turned household tabbies into celebrities. “Perma-kitten” Lil BUB has nearly 1.5 million Facebook fans and the constantly-frowning Grumpy Cat makes more money than many prominent human celebrities (Millward, 2014). Beyond famous cats, Internet users frequently post images of their own felines on social media platforms (Marshall, 2014), further increasing the amount of online cat-related visual content available to Internet users. In fact, industry research indicates that Internet users are more than twice as likely to post pictures or videos of cats than they are to post a “selfie” (i.e., a picture taken of oneself) online (Williams, 2014).

The Internet cat phenomenon has spurred news articles with titles such as “Why do cats dominate the Internet?” (Thornton,

2013) and “The million dollar question: Why does the Web love cats?” (Elliot, 2010). Yet, very little empirical evidence exists to help answer these questions or others like them, such as what motivates people to view online cat content and what type of people are more likely to enjoy cat-related Internet content. Considering the large viewership of online cat media, this topic is understudied. Consumption of online cat-related media deserves empirical attention because, as the news accounts suggest, Internet users spend a significant amount of time consuming cat-related media, some of that while they are supposed to be doing other tasks like working or studying. If this genre is as popular as the online analytics suggest, then there are likely important effects of such media on users, particularly on their emotional states.

Moreover, research on pet therapy indicates that time spent with real pets can improve mood and wellbeing across a variety of populations (Nimer & Lundahl, 2007). Research on “the media equation” argues that media users typically react to mediated content as if it were occurring in real life (Reeves & Nass, 1996). Therefore, mediated exposure to cats could possibly result in similar outcomes found in pet therapy studies, although perhaps to a lesser degree given no physical interaction with Internet cats. If viewing online cats does improve mood, such media could potentially serve as a low-cost and easily distributed intervention to (at least temporarily or at times of stress) improve emotional wellbeing. However, there are also potential negative impacts of watching Internet cats. For instance, if Internet users are watching online cat videos to procrastinate, they may instead experience guilt after

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looking at online cat content. Research is needed to test what exactly are the emotional benefits and drawbacks.

Mood management theory and previous studies of the emotional impact of entertainment media consumption provide a conceptual basis for analyzing the potential motivations for and effects of consuming online cat content, particularly as it relates to emotional states. The present work is an exploratory study of characteristics of Internet cat media consumers, their motivations for such media use, and potential effects of use related to emotional states of the users. Furthermore, this study advances the literature related to the interrelationship between feelings of guilt and enjoyment of Internet media (i.e., the guilty pleasure) by proposing and testing a conceptual model linking procrastination, guilt, happiness, and enjoyment. This study employs a survey of Internet users to explore the Internet cat as its own media genre and to set the stage for subsequent research and theory building in this area of entertainment research.

### 1.1. The nature of online cat-related media consumption

While digital marketing analytics and news accounts demonstrate that cat videos and images are very popular, little is known about the nature of the typical online cat-viewing experience. Critical-cultural scholars have discussed the ability of online cat videos to generate pleasure and positive affect and to promote interaction with audiences (O'Meara, 2014; Shafer, 2014). However, empirical analysis that assesses the details surrounding who, why, and how Internet users consume online cat videos and other cat-related images is lacking. That is, how long do Internet users spend with this type of content? What websites do they turn to for it? Do they seek it out purposefully or encounter it in the course of other online activities? Do they engage with so-called celebrity cats or are they more interested in everyday felines? Does interaction with Internet cats overlap with consumption of media related to Internet dogs or other animals? These questions combine to suggest a first research question asking what, exactly, is the nature of online cat-related media consumption (RQ1).

### 1.2. Motivations for consuming online cat-related media

In the following section, potential motivations for viewing Internet cats are discussed through the lens of mood management theory. Additionally, potential demographic and psychological predictors of enjoyment of Internet cats are outlined.

#### 1.2.1. Mood management

Despite the widespread use of the Internet for posting and consuming cat-related content, little research has addressed the questions of why Internet users seek out this content. Mood management theory (MMT) posits that individuals are motivated to consume media that will dissipate aversive emotional states or maintain positive ones (Oliver, 2003; Zillmann, 1988). Media use can serve as a form of emotion regulation, defined as “the process by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (p. 275, Gross, 1998). MMT also states that media users, often without being cognizant of the reason, select media based on its excitatory potential, absorption potential, semantic affinity, and hedonic valence. These message features, therefore, influence selective exposure to media.

Internet users may seek images and videos of adorable or humorous cats in order to dissipate negative emotional states or to keep up their positive spirits. Anecdotal evidence supports this supposition. The Twitter account “Emergency Kittens” states in its profile description that its Twitter feed is designed “[f]or when you need a kitten (or other type of cat) to cheer you up!”

(Emergency Kittens, 2014). The Apple iTunes Store offers consumers the opportunity to download a free application called “Cute cats – cheer you up!” (iTunes, 2015). There is even an Internet meme called “Cheer Up Cat,” which depicts an orange tabby cat that appears to be winking and smiling at the viewer (Quickmeme, 2015).

Advancements in mood management research have pointed out that not all mood management motivations are hedonic—media consumers may seek affectively-laden content because it promotes connection with other people (Oliver & Raney, 2011), because the content may induce a useful emotional state for pursuing future tasks (Knobloch, 2003), or because the emotional effects of media consumption may help viewers to cope (Nabi, Finnerty, Domschke, & Hull, 2006). Because images of Internet cats are typically cute and funny in nature, hedonic valence is the message feature that may be drawing so many users to view Internet cats. These positively-toned images/videos may be a readily available way to regulate emotional states in the digital era. However, those who are already animal lovers (in particular, cat lovers) may also be drawn to the content due to semantic affinity with their real pets. Moreover, research has shown that depletion can motivate individuals to turn to entertainment media (Reinecke, Hartmann, & Eden, 2014), and because of its jovial nature, Internet cats may have just enough excitatory potential to animate its audiences.

#### 1.2.2. Procrastination

In addition to mood management motivations for viewing online cat-related media, news accounts suggests that many people watch cat videos online to avoid work or unpleasant tasks (FlorCruz, 2013; Garber, 2012). While online cat media is generally humorous or adorable, it may bring with it hedonic pleasures but little educational or utilitarian gains. Research on general motivations for media use also points to procrastination as a reason why individuals watch entertainment media. To procrastinate is to “voluntarily delay an intended course of action despite expecting to be worse off for the delay” (p. 66, Steel, 2007). If viewed during work hours, Internet cats may be thought of as a form of “cyberslacking,” where people use media for personal purposes during work hours (Vitak, Crouse, & LaRose, 2011). Even after work hours, entertainment media may be motivated by a need or desire to procrastinate. Reinecke et al. (2014) found that after a draining day at work or school, individuals in their survey turned to entertainment media as a way to procrastinate. Media use as a form of procrastination, in turn, was related to increased feelings of guilt for having not done more important or meaningful tasks.

The prevalence of procrastination behaviors appears to be increasing (Steel, 2007), alongside an increasing number of digital media options for avoiding work and other responsibilities (Hinsch & Sheldon, 2013). Research has also found a link between Internet use and guilt (Panek, 2014). It is likely that some Internet users may very well interpret Internet cats as a form of procrastination, with emotional implications if prior research holds true within the genre of online cat-related media.

#### 1.2.3. Individual differences

Researchers have connected individual personality traits with greater levels of Internet use and with an affinity for felines. Therefore, certain types of individuals may be more likely to view and enjoy online cat media than others. Traits such as introversion and shyness are associated with greater Internet usage (Ebeling-Witte, Frank, & Lester, 2007), while introversion has also been tied to a preference for cats over dogs (Guastello, Braun, Gutierrez, Johnston, & Olbinski, 2014). It is possible that introverts who are drawn to the Internet may be likewise drawn to Internet cats, with cats often categorized as solitary, even anti-social pets as compared to dogs (Kleiman & Eisenberg, 1973). However, it is

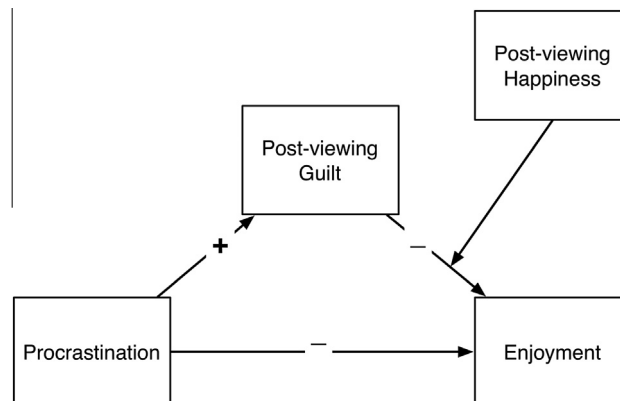
unclear if this personality trait would translate to the Internet context of mediated cats, or if any of the other four of the “Big 5” personality traits—agreeableness, conscientiousness, emotional stability, and openness to experiences (Costa & MacCrae, 1992; Gosling, Rentfrow, & Swann, 2003)—are related to viewing Internet cats. Shyness is another personality trait that has been tied to general Internet use and introversion (Ebeling-Witte et al., 2007) as well as to social media use (Orr et al., 2009), and therefore may likewise be related to consumption of online cat-related media.

Emotional wellbeing may also be a factor related to the type of Internet users who enjoy Internet cats. If certain Internet users are doing well and are generally happy, then they may be drawn to cute or funny content that could guarantee they will remain in their generally positive state. However, it is also possible that individuals who are not doing well or receiving adequate emotional support from those around them may turn to online cat media as a way to generate more positive emotions. Research on Internet use finds a small but negative relationship between amount of time spent online and emotional wellbeing (i.e., depression, loneliness, self-esteem, and life satisfaction) (Huang, 2010). Therefore, variables such as emotional wellbeing and amount of affective support one receives may also predict greater online cat media consumption, although it is not clear in what direction. Between these variables, personality traits, and demographic measures, it remains an empirical question as to which characteristics of Internet users predict enjoyment of cat videos and/or photos (RQ2).

### 1.3. Potential effects of viewing internet cats

While mood management, procrastination, and individual differences in personality or situation may be driving Internet users to sites containing cat-related content, it is also important to consider the potential effects of this content on individuals. Positive emotional responses, as well as being entertained, may be likely reactions to viewing cute or funny cats. Preliminary evidence suggests that this type of media consumption can also increase cognitive, emotional, and behavioral resources for post-viewing behaviors. Researchers have found viewing images of cute animals (including kittens and puppies), promotes attention to detail and behavioral carefulness (Nitto, Fukushima, Yano, & Moriya, 2012; Sherman, Haidt, & Coan, 2009). Sherman et al. posit that this effect is an evolutionarily adaptive one that promotes caring for young children. Yet, the attention-promoting power of viewing cute images may also help explain why Internet users are attracted to images of felines because it reenergizes them and helps them be more attentive to subsequent tasks.

Additionally, literature on pet therapy indicates that the physical presence of animals or pets (i.e., animal assisted therapy) can have benefits for emotional wellbeing (Halm, 2008; Kaminski, Pellino, & Wish, 2002; Nimer & Lundahl, 2007). For instance, Kaminski, Pellino, and Wish found that pet therapy in pediatric hospitals helped improve the mood of sick children and those children displayed more positive affect than did children who did not participate in pet therapy. A meta-analysis on the effects of animal assisted therapy conducted by Nimer and Lundahl found this increase in positive emotions was no fluke. Across the 49 studies, the authors found moderate effect sizes in improving outcomes related to Autism-spectrum symptoms, medical difficulties, behavioral problems, and emotional wellbeing (i.e., decreases in anxiety, depression, or fear). Animal assisted interventions are also associated with physical and mental health benefits such as improvements in blood pressure, heart rate, and salivary immunoglobulin A levels alongside decreases in depression, anxiety, and loneliness (Morrison, 2007). The aforementioned research suggests that viewing Internet cats will increase users' positive emotional states and decrease negative emotional states (H1).



**Fig. 1.** Conceptual model. *Note:* The model predicts that viewing entertainment media as a form of procrastination will be positively related to post-viewing guilt, which will subsequently decrease perceptions of enjoyment of the content. However, the positive emotional benefit of viewing the entertainment content (i.e., post-viewing happiness) should moderate the relationship between guilt and enjoyment such that higher levels of happiness decrease guilt's negative impact on enjoyment.

Another potential emotional response to the consumption of online cat-related media is the aforementioned guilt resulting from spending time on less-than-productive media content instead of doing more important or useful tasks (Panek, 2014; Reinecke et al., 2014). Moreover, using the Internet to procrastinate has been linked to problematic forms of Internet use (Thatcher, Wretschko, & Fridjhon, 2008). Reinecke et al. also found that the increase in guilt from using media as a form of procrastination was negatively related to enjoyment of entertainment media (and to vitality and recovery experience).

In addition to Reinecke et al.'s (2014) work, research on media use as a form of “guilty pleasure” has examined how reality television show consumption is driven by voyeurism (Baruh, 2010) and how a lack of self-control is correlated with higher levels of digital media use and stronger feelings of guilt (Panek, 2014). However, these studies have not tested the role of positive emotional reactions to entertainment media, such as happiness, as a moderator of the guilt–enjoyment relationship. Vorderer (2001) argues that viewing entertainment media is a largely pleasant and joyful experience. As such, the positive emotional benefit from consuming positively valenced entertainment media, like Internet cats, could moderate the relationship between post-viewing guilt and decreased enjoyment such that higher post-viewing happiness would lead to more enjoyment than when the viewer experiences less joy after media consumption (H2). See Fig. 1 for a conceptual model configuring these variables in a moderated-mediation relationship.

## 2. Method

To test the aforesaid research questions and hypotheses, the present study employed an online survey, hosted by Qualtrics. A snowball sample was used to find respondents who self-identified as viewing cat videos or photos online. The researcher posted a link to the survey, described as a study about “Internet cat videos/photos” on Facebook and Twitter and asked others to share it with their social networks. To incentivize participation, the researcher promised to donate \$0.10 USD for each person who completed the survey to Lil BUB's Big Fund at the American Society for the Prevention of Cruelty to Animals (the fund aims to raise money for special needs cats). Lil BUB's human owner shared the link to the survey on Lil BUB's Facebook page, Twitter feed, and email newsletter.

The 10-min survey asked respondents to supply pet-related information (e.g., current and past cat ownership, etc.) before they

were prompted to answer questions related to personality traits and emotional wellbeing. Respondents then were asked about the nature of their typical viewing of Internet cats. Next, they provided information on their most recent experience viewing this type of media (e.g., how they felt before they viewed Internet cats, how they felt after, etc.). The end of the survey asked for demographic information. An Institutional Review Board approved the procedures used in this study.

## 2.1. Participants

Of those who began the survey ( $N = 11,083$ ), 6827 completed it. And of those who completed it, 8 respondents were removed because they reporting spending no time online during an average day. Another 24 participants were removed for reporting being under the age of 18, which was included in the informed consent agreement as the minimum age for participation in the study (final  $N = 6795$ ). Most of the participants (88.4%) identified as female. The racial make-up of the respondents, who were allowed to choose more than one race, was as follows: 90.4% Caucasian, 5.5% Hispanic/Latino(a), 2.9% Asian or Pacific Islander, 2.9% American Indian, 1.0% African-American, and 3.3% as other. The average age of respondents was 38.74 ( $SD = 14.07$ ). More than half (52.5%) of the sample had at least a 4-year bachelor's degree.

## 2.2. Measures

### 2.2.1. Internet cat viewing frequency

Respondents were asked "How often do you view cat videos and/or photos online?" They responded on a eight-point scale with the following labels: Never, less than once a month, 2–3 times a month, once a week, 2–3 times a week, daily, multiple times a day. The average response ( $M = 6.74$ ,  $SD = 1.35$ ) fell between the "2–3 times a week" and "daily" points on the scale was normally distributed (skew =  $-1.43$ , kurtosis =  $2.32$ ).

### 2.2.2. Cat affinity

Respondents were asked to choose one of four sentences that best described themselves: (1) I am a cat person; (2) I am a dog person; (3) I like dogs and cats and about equally; or (4) I do not like dogs or cats. Respondents who chose "I am a cat person" were coded as 2, those who responded as liking cats and dogs as 1, and those who reported liking dogs or not liking either animal were recoded as 0 ( $M = 1.33$ ,  $SD = .53$ ).

### 2.2.3. Current cat ownership

Respondents were shown a text entry box and asked to respond to the prompt "Currently, how many cats do you own?" ( $M = 2.39$ ,  $SD = 4.39$ ).

### 2.2.4. Ever owned a cat

Respondents were shown a text entry box and asked to respond to the prompt "Over the course of your lifetime, how many cats have you owned?" ( $M = 10.32$ ,  $SD = 52.17$ ).

### 2.2.5. Past-year pet assistance behaviors

Four items were adapted from Oliver, Dillard, Bae, and Tamul (2012) to assess how often in the past year respondents had engaged in activities to help domestic pets. The stem of "In the past year (12 months), how many times have you taken the following actions?" was followed by four behaviors: Fostered a cat; Volunteered at an animal shelter or animal rescue group; Donated money to organizations that help animals/pets; and Contacted a legislator or other politician to voice your support for legislation that helps animals. Responses were recoded as 0 for responses of 0 and 1 for responses of 1 or higher for each of

the four behaviors, summed, and divided by four to form an index of behavior ( $M = .31$ ,  $SD = .23$ ).

### 2.2.6. Hours per day online

Respondents were asked "On average, about how many hours per day do you spend online total for any activities (on any devices)?" ( $M = 5.37$ ,  $SD = 3.52$ ).

### 2.2.7. Big five personality traits

Ten items on a 7-point Likert-type scale from Gosling et al. (2003) were used to assess the five personality factors with two items per factor: extraversion ( $M = 3.79$ ,  $SD = 1.69$ ,  $r = .58$ ,  $p < .001$ ), agreeableness ( $M = 5.46$ ,  $SD = 1.17$ ,  $r = .27$ ,  $p < .001$ ), conscientiousness ( $M = 5.44$ ,  $SD = 1.29$ ,  $r = .42$ ,  $p < .001$ ), emotional stability ( $M = 4.60$ ,  $SD = 1.47$ ,  $r = .50$ ,  $p < .001$ ), and openness to experience ( $M = 5.51$ ,  $SD = 1.13$ ,  $r = .22$ ,  $p < .001$ ).

### 2.2.8. Shyness

The Revised Cheek and Buss Shyness Scale (Cheek, 1983) was used to assess shyness. Respondents rated 13 Likert-type items as ranging from 1, "very uncharacteristic or untrue, strongly disagree" to 5, "very characteristic or true." Sample items include "I feel tense when I'm with people I don't know well;" and "I have no doubts about my social competence" [reverse coded], ( $M = 2.88$ ,  $SD = .83$ ,  $\alpha = .90$ ).

### 2.2.9. Emotional wellbeing

The five-item WHO-5 scale was used to assess wellbeing (World Health Organization: Regional Office for Europe., 1998). Respondents were asked to respond on a six-point scale from 0, "At no times" to 5, "All of the time," to five items about the last two weeks such as "I have felt cheerful and in good spirits." ( $M = 3.71$ ,  $SD = .99$ ,  $\alpha = .85$ ).

### 2.2.10. Affective support

The affective support subscale of the Medical Outcomes Study Social Support Scale was used to assess respondents general levels of perceived affective support (Sherbourne & Stewart, 1991). Respondents recorded their ratings on scales from 1, "none of the time," to 5, "all of the time," for three items: "How often is someone available: (1) To show you love and affection? (2) To hug you? (3) To love and make you feel wanted?" ( $M = 3.71$ ,  $SD = 1.20$ ,  $\alpha = .96$ ).

### 2.2.11. Emotional state prior to viewing online cat media

Participants were prompted to recall the last time they viewed cat videos and/or photos online. Twenty-four items were adopted from both Dillard and Shen (2007), Myrick and Oliver (2014), and Oliver, Hartmann, and Woolley (2012) to assess discrete emotional states of users prior to that viewing. They responded on a Likert-type scale (1, "not at all," to 7, "very much") to the prompt "Before viewing cat videos and/or photos online, I felt..." See Table 2 for individual items, means, standard deviations, and reliabilities for each emotion.

### 2.2.12. Procrastination

Four items were adapted from Tuckman (1991) to assess the role of procrastination motives for consuming online cat media. Respondents saw the following stem: "Think about the last time you viewed cat videos and/or photos online. Please rate how well the following statements applied to that situation." They responded on a Likert-type scale (1, "does not apply," to 7, "fully applies") to items such as "I viewed cat videos and/or photos online to find an excuse for not doing something else" ( $M = 2.95$ ,  $SD = 1.92$ ,  $\alpha = .92$ ).



**Table 1**

Bivariate correlations of cat-related and personality trait variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Internet cat viewing frequency													
2. Cat affinity	.16***												
3. Current cat ownership	.19***	.21***											
4. Ever owned a cat	.14***	.21***	.36***										
5. Past-year pet assistance behaviors	.17***	.02	.22***	.10***									
6. Hours per day online	.10***	.01	-.05***	-.01	-.05***								
7. Extraversion	-.02	-.07***	.01	-.04	.08***	-.06***							
8. Agreeableness	.05***	-.05***	.07***	.05***	.09***	-.13***	.56***						
9. Conscientiousness	.01	.02	.07***	.05***	.07***	-.15***	.08***	.19***					
10. Emotional stability	-.04***	-.04***	.05***	.03	.07***	-.16***	.21***	.31***	.32***				
11. Openness to experiences	.02	-.04***	.01	.01	.08***	-.01	.25***	.18***	.07***	.15***			
12. Shyness	.03	.06***	-.03***	-.02	-.10***	.13***	-.64***	-.17***	-.23***	-.44***	-.28***		
13. Wellbeing	-.01	-.02	.05***	.02	.10***	-.12***	.27***	.21***	.28***	.47***	.17***	-.38***	
14. Affective support	.03*	-.01	.06***	.02	.04**	-.05***	.17***	.11***	.13***	.14***	.08***	-.21***	.31***

\*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .**Table 2**Paired samples  $t$ -tests of emotional states prior to and after viewing online cat videos and/or photos.

Variable	Mean	Standard deviation	Reliability ( $\alpha$ )	Bivariate correlation	$t$ (Degrees of freedom)
<i>Arousal</i>					
Prior: Depleted	3.43	1.72	.85	.58***	78.83
After: Depleted	2.05	1.29	.84		(6627) ***
Prior: Energetic	3.27	1.43	.83	.60***	-30.93
After: Energetic	3.78	1.59	.85		(6615) ***
<i>Negative emotions</i>					
Prior: Anxious	2.28	1.47	.88	.60***	52.37
After: Anxious	1.52	0.94	.89		(6628) ***
Prior: Annoyed	2.34	1.53	.91	.48***	54.62
After: Annoyed	1.43	0.89	.92		(6622) ***
Prior: Sad	2.52	1.62	.90	.57***	57.87
After: Sad	1.57	1.00	.89		(6622) ***
Prior: Guilty	1.62	1.08	.87	.62***	26.66
After: Guilty	1.34	0.82	.89		(6622) ***
Prior: Negative emotions (combined)	2.19	1.24	.87	.60***	58.95
After: Negative emotions (combined)	1.46	.82	.92		(6593) ***
<i>Positive emotions</i>					
Prior: Hopeful	3.67	1.44	.82	.60***	-32.39
After: Hopeful	4.21	1.59	.86		(6628) ***
Prior: Happy	4.08	1.53	.91	.53***	-64.79
After: Happy	5.22	1.43	.90		(6626) ***
Prior: Content	4.23	1.45	.83	.51***	-35.46
After: Content	4.85	1.40	.83		(6628) ***
Prior: Positive emotions (combined)	3.99	1.34	.89	.58***	-51.27
After: Positive emotions (combined)	4.76	1.31	.87		(6604) ***

\*\*\*  $p < .001$ ; Measures comprising each variable are as follows: Depleted (depleted, drained, tired), Energetic (energized, motivated, excited), Anxious (anxious, uneasy, nervous), Annoyed (annoyed, aggravated, irritated), Sad (sad, gloomy, depressed), Guilty (guilty, remorseful, ashamed), Hopeful (hopeful, inspired, optimistic), Happy (happy, cheerful, jolly), Content (content, tranquil, relaxed).

### 2.2.13. Interaction with online cat media

Respondents were asked to respond (no = 0 and yes = 1) if they had interacted with the content they saw during the most recent time online cat viewing by: (1) Posting a comment; (2) Liking/favorite-ing/retweeting and/or rating the content; and, (3) Sharing the content with others in their online social networks.

### 2.2.14. Enjoyment of online cat media

Four items (e.g., “I enjoyed viewing cat videos and/or photos online”) adapted from [Oliver and Bartsch \(2010\)](#) were used to assess their enjoyment during the most recent time they had viewed online cat media. Respondents rated their agreement with the four items on a Likert-type scale ranging from 1, “strongly disagree” to 7, “strongly agree” ( $M = 6.55$ ,  $SD = .84$ ,  $\alpha = .96$ ).

### 2.2.15. Emotional state after viewing online cat media

The same items were used to assess post-viewing emotions as were described above to assess respondents self-reports of their emotional states prior to their most recent viewing of online cat media. The only difference was the stem: “After viewing cat videos and/or photos online, I felt...” See [Table 2](#) for means, standard deviations, and reliability of each emotion variable.

### 2.2.16. Cat video production

Respondents were asked how often they personally post their own cat videos online: Never, once a month, a couple times a month but not once a week, once a week, a couple times a week but not every day, once a day, Multiple times per day. The responses were recoded to be continuous such that never = 0 and multiple times per day = 7 ( $M = 1.61$ ,  $SD = 1.15$ ).

### 2.2.17. Cat photo production

Respondents were asked how often they personally post their own cat photos online: Never, once a month, a couple times a month but not once a week, once a week, a couple times a week but not every day, once a day, Multiple times per day. The responses were recoded to be continuous such that never = 0 and multiple times per day = 7 ( $M = 2.86$ ,  $SD = 1.74$ ).

### 2.2.18. Online dog media consumption

Respondents were asked how often they view videos and/or photos online featuring dogs on the same scale used to assess cat video and photo production ( $M = 4.80$ ,  $SD = 2.12$ ).

### 2.2.19. Online consumption of media related to other animals

Respondents were asked how often they view videos and/or photos online featuring animals other than cats or dogs on the same scale used to assess cat video and photo production ( $M = 4.80$ ,  $SD = 1.96$ ).

## 3. Results

RQ1 asked about the nature of the online cat media viewing experience and the people who partake in it. A third of respondents

(36.2%) described themselves as cat people while few (3.0%) reported being only a dog person or someone who does not like cats or dogs (0.1%). A majority of respondents reported liking both cats and dogs (60.6%). The average respondent currently owns at least two cats ( $M = 2.39$ ,  $SD = 4.39$ ). However, this variable was positively skewed (29.99) and leptokurtic (1524.48) due to outliers (range: 0–249). Therefore, in further analyses this variable was coded as 0 for not currently owning a cat ( $n = 1145$ ) and 1 for currently owning a cat ( $n = 5647$ ). Similarly, lifetime cat ownership ( $M = 10.32$ ,  $SD = 52.17$ ) was positively skewed (50.27) and leptokurtic (3091.20) due to outliers (range: 0–3500) and likewise transformed into a dichotomous variable: 448 never owned a cat and 6345 owned a cat at some point in their lives.

Bivariate correlations revealed the interrelationships between personality, cat-related behaviors, cat affinity, and viewing of cat-related Internet content (see Table 1). These analyses demonstrated that higher frequency of viewing Internet cats was positively and significantly associated with cat affinity, cat ownership (current and past), pet assistance behaviors, agreeableness, shyness, and affective support. Frequency of viewing was negatively and significantly associated with emotional stability, with negative values of emotional stability similar to higher trait anxiety/neuroticism (Gosling et al., 2003). There was no significant association with extraversion, conscientiousness, openness to experiences, or wellbeing.

Online cat media viewers also reported viewing videos and/or photos of dogs ( $M = 4.80$ ,  $SD = 2.12$ ) and other animals besides cats or dogs ( $M = 4.80$ ,  $SD = 1.96$ ) slightly more than a few times a month, on average. The most popular websites used by respondents to view online cat media were Facebook (90.6% of respondents), YouTube (87.0%), BuzzFeed (61.2%), I Can Has Cheezburger (60.8%), Huffington Post (49.8%), LOL Cats (47.1%), Instagram (31.1%), Cute Overload (26.0%), Tumblr (23.6%), Twitter (22.5%), Yahoo (17.5%), and assorted others (37.4%, e.g., Catster, Reddit's cat videos thread, Snapchat, etc.).

On average, respondents reported purposefully seeking out cat-related media 25.4% of the time ( $SD = 26.15$ ) and that nearly three-quarters of the time ( $M = 74.59\%$ ,  $SD = 26.14$ ) they happened upon it incidentally while in the midst of using the Internet for other purposes. Respondents also reported some Internet cat viewing while at work, with the average response situated between “once a month” and “2–3 times a month” on the scale ( $M = 3.81$ ,  $SD = 2.62$ ). When they did view online cat media, respondents often interacted with it. Nearly a quarter (22.9%) of the sample posted on comment on the most recent cat-related online media they viewed, 75.4% liked, made a favorite, or provided some sort of rating for the cat-related content, and 54.3% shared the cat media with others via social media. Only 17.7% of the sample participated in none of these behaviors (29.1% did only one, 34.4% did two, and 18.2% did all three during their most recent online cat media viewing).

Respondents reported being familiar with multiple celebrity cats. The average respondent knew at least six of the Friskie's top 20 most popular cats on the Internet ( $M = 6.94$ ,  $SD = 3.55$ ). They also reported following multiple celebrity cats via social media ( $M = 2.99$ ,  $SD = 2.81$ ). While they were familiar with and following famous Internet cats, respondents infrequently posted online videos ( $M = 1.61$ ,  $SD = 1.15$ ) or photos ( $M = 2.86$ ,  $SD = 1.74$ ) of their own felines.

H1 predicted that viewing Internet cats would be associated with an increase in users' positive emotions and a decrease in negative emotions. Paired *t*-tests examining the differences in respondents' emotional states prior to and after their most recent online cat viewing experience confirmed this hypothesis (see Table 2). Respondents reported experiencing a significant increase in each type of positive emotion (i.e., hope, happiness, contentment) after

viewing online cat videos and/or photos. Paired samples *t*-tests also revealed that participants felt significantly less of each type of negative emotion (i.e., anxiety, annoyance, sadness, guilt) afterward than they did before their most recent viewing of online cat content. Internet cats also impacted participants' reports of arousal, with significantly lower levels of depletion after viewing than before and significantly higher energy levels reported after than before.

Additionally, a principle components analysis with Promax rotation revealed that the positive and negative emotions as more general emotion groups were different from each other. The four aforementioned negative emotions all loaded cleanly onto one factor (all factor loadings were greater than .87) that explained 49.92% of the variance. The three positive emotions also cleanly loaded onto one factor (loadings all great than .87) that explained 30.42% of the variance. Paired samples *t*-tests also revealed that self-reported negative emotions were lower and positive emotions were higher after viewing online cat media.

Another affect-driven outcome of online cat-related media consumption to consider is how entertaining respondents find this content to be (RQ2). A hierarchical linear regression was run to see what factors predicted an enjoyment as an outcome of online cat media viewing (see Table 3). The first step in the regression included demographic variables (age, gender, and education). The second step added variables that were significant in the initial correlations associated with frequency of Internet cat viewing (current and past cat ownership, hours spent online, last year helping behavior, and frequency of Internet cat viewing). The third step included variables related to active engagement with cat content, such as purposefully seeking it out and liking or sharing it with others. The final step in the regression included emotion-related variables (i.e., cat affinity, post-viewing positive emotions, post-viewing negative emotions). The overall model explained 25.1% of the variance in enjoyment. Ten variables were positive predictors of enjoyment while age and post-viewing negative emotions were negative predictors of enjoyment. Of the variables predicting enjoyment, the strongest predictors were Internet cat viewing frequency ( $\beta = .23$ ,  $p < .001$ ) and positive emotions ( $\beta = .25$ ,  $p < .001$ ).

H2 predicted a moderated-mediation relationship between procrastination as a motivation for viewing Internet cats, emotional responses to entertainment media (i.e., guilt and happiness), and enjoyment of that media. Using the Process Macro for SPSS (Hayes, 2013), Version 2.10, a moderated-mediation analysis (Model 14) with 2000 bias-corrected bootstrap samples tested this conceptual model. Procrastination was a significant predictor of post-viewing guilt ( $B = .088$ ,  $SE = .005$ ,  $CI[.078, .098]$ ), while guilt was negatively related to enjoyment ( $B = -.386$ ,  $SE = .043$ ,  $CI[-.471, -.302]$ ). Additionally, post-viewing happiness was positively associated with enjoyment in the model ( $B = .148$ ,  $SE = .013$ ,  $CI[.123, .174]$ ) and the interaction between guilt and happiness was likewise significant ( $B = .048$ ,  $SE = .009$ ,  $CI[.030, .065]$ ).

The conditional negative indirect effect of procrastination on enjoyment via post-viewing guilt confirmed the hypothesis that higher levels of happiness would mitigate the effects of guilt on enjoyment. At one degree above the standard deviation of post-viewing happiness, the negative indirect effect of procrastination via guilt on enjoyment was smallest ( $B = -.006$ ,  $SE = .002$ ,  $CI[-.010, -.002]$ ). On the other hand, at one standard deviation below the mean of post-viewing happiness, the indirect effect on enjoyment was more negative ( $B = -.018$ ,  $SE = .002$ ,  $CI[-.023, -.014]$ ). The index of moderated mediation was significant (Index = .004,  $SE = .001$ ,  $CI[.002, .007]$ ), indicating that the effects of guilt on enjoyment do depend on how happy Internet users felt after their media consumption. In addition to indirect effects of

**Table 3**

Hierarchical regression predicting enjoyment of Internet cat content.

Variable	B	SE(B)	$\beta$	B	SE(B)	$\beta$	B	SE(B)	$\beta$	B	SE(B)	$\beta$
<i>Step 1 (<math>\Delta R^2 = .01</math>)***</i>												
Age	.00	.00	.02	.00	.00	-.03*	.00	.00	-.04**	.00	.00	-.06***
Gender	.23	.03	.09***	.15	.03	.06***	.15	.03	.06***	.11	.03	.04***
Education	-.01	.01	-.01	.00	.01	.00	.02	.01	.03**	.03	.01	.04**
<i>Step 2 (<math>\Delta R^2 = .12</math>)***</i>												
Current cat ownership				.22	.03	.10***	.21	.03	.09***	.16	.03	.07***
Ever owned a cat				.21	.04	.06***	.21	.04	.06***	.15	.04	.04***
Hours online per day				.00	.00	.00	.00	.00	.00	.01	.00	.03*
Past-year pet assistance behaviors				.10	.05	.03*	.00	.05	.00	-.03	.04	-.01
Internet cat viewing frequency				.20	.01	.30***	.17	.01	.26***	.15	.01	.23***
<i>Step 3 (<math>\Delta R^2 = .03</math>)***</i>												
Percent of time purposefully seeking Internet cats							.00	.00	.09***	.00	.00	.05***
Interacting with Internet cat content							.32	.03	.12***	.16	.03	.06***
<i>Step 4 (<math>\Delta R^2 = .09</math>)***</i>												
Post-viewing negative emotions										-.15	.01	-.15***
Post-viewing positive emotions										.16	.01	.25***
Cat affinity										.11	.02	.07***

Gender: 0 = male, 1 = female.

\*  $p < .05$ ,\*\*  $p < .01$ ,\*\*\*  $p < .001$ ;

procrastination on enjoyment, there was a small but significant ( $p < .001$ ) positive direct effect of procrastination on enjoyment ( $B = .023$ ,  $SE = .005$ ,  $CI [.013, .033]$ ).

#### 4. Discussion

This initial investigation of the personalities of individuals who consume online cat content, of the nature of the experience of using the Internet for this purpose, and its potential effects on Internet users revealed a number of insights into this phenomena. Higher frequency of viewing Internet cats was tied to attitudinal (e.g., greater affinity for cats), behavioral (e.g., owning a cat currently or in the past, past-year pet assistance behaviors, time spent online) and personality variables (e.g., agreeableness, anxiousness, shyness) as well as to adequate affective support levels. According to the data presented here, the experience of viewing Internet cats online often involves happenstance more often than a strong motivation to seek out feline images. However, the construction of one's social networks by liking or following Internet cats may mean that individuals know that going online increases the likelihood they will view Internet cats, even if that is not their initial motivation for turning to the Internet. When Internet users do view mediated felines, they tend to interact with that content, often in multiple ways from commenting to sharing it. This finding can help explain perceptions that Internet cats “rule the web,” as many individuals share such content across their online social networks.

The hierarchical regression analysis revealed that enjoyment of Internet cats is tied to a variety of variables related to demographics interaction with the online cat content, and emotional states. However, the strongest predictors of enjoyment were Internet cat viewing frequency and experiencing positive emotions post-viewing. The link between frequency of viewing, positive emotions, and enjoyment could be explained as a mere exposure effect (Zajonc, 1980). That is, the more one watches, the more one enjoys Internet cats. Likewise, operant conditioning could be happening, as suggested by MMT (Zillmann, 1988), such that Internet users become quickly conditioned to expect positive emotional outcomes from viewing Internet cats. Experimental work could test these potential explanations.

This study also provided empirical support for the existence of mood management motivations for viewing online cat-related media. Levels of each self-reported negative emotional state

measured in the study were lower and levels of each positive emotion were higher after viewing Internet cats. Moreover, emotion-related variables predicted a significant portion of the variance in enjoyment of online cat media. Beyond hedonic implications for viewing Internet cats, the data indicate that the excitatory potential of the content can also reduce depletion and energize viewers. Additionally, those who enjoy real felines likewise seemed to enjoy mediated cats, showing the potential for semantic affinity to motivate Internet cat consumption. Conceptually, these findings are in line with mood management theory's predictions about media selection. Future work could employ experimental designs to more directly test when and under what emotional circumstances Internet users turn to cat-related content. Analyzing meta-emotional states (Bartsch, 2008) such as what users feel about how they feel after viewing Internet cats, would likewise advance this line of inquiry by parsing out the nuances of what emotional states drive consumption of Internet cats.

Practically, these findings related to positive emotions and increased energy after viewing online cat media promotes the idea that viewing Internet cats may actually function as a form of digital pet therapy and/or stress relief for Internet users. In instances where individuals who could benefit from pet therapy are prevented from participating in such a program due to allergies or lack of funds, Internet cats may function as an alternative intervention. Future work is needed to test this supposition. Further comparisons between this type of media and other forms of positively valenced, lighthearted fair are also needed to assess if the results are unique to cat-related content. Nonetheless, the present results provide valuable insights as to the role of emotion regulation in the popularity of Internet cats.

Furthermore, this study replicated past work in that it found that when individuals view cat videos online instead of doing more important tasks they subsequently experience guilt, which can decrease enjoyment. However, this study advanced existing literature by examining the moderating effects of post-viewing happiness on the procrastination–guilt–enjoyment relationship. Based on the semantics, it makes sense that both positive and negative emotional reactions are involved in a “guilty pleasure” media experience, yet previous work in this area has focused mostly on the negative side of the equation—guilt. The present study advances theory in this area of entertainment research by

demonstrating that both valences are important and can influence the outcomes. It also underscores the importance of studying multiple emotional reactions to media fare (e.g., Larsen, McGraw, & Cacioppo, 2001; Myrick & Oliver, 2014). The simultaneous experience of multiple emotions is a more complex phenomenon than looking at the impact of one emotional response to media on user perceptions, and the added nuance of looking at multiple discrete emotional responses can help improve the accuracy with which researchers can explain complex communication phenomena (Nabi, 2010).

The appraisal theory of emotion, which argues that unique emotions arise from various appraisals of the person–environment relationship, and that these different emotions are tied to different actions, provides insights that might explain the emotion-related effects of watching cat videos on YouTube (Lazarus, 1991). According to Lazarus, the action tendency associated with guilt is to make amends and reverse any harm done, while the action tendency of happiness is to be expressive and outgoing about one's current sense of pleasure. These combined tendencies help explain how someone feeling guilty about procrastinating could still enjoy viewing the cat content that brought pleasure, and even share that work with others via social media. The sharing of the content, brought about by feelings of happiness, could serve as a way for Internet users to help improve others' moods, thereby making what had seemed like a waste of time a more worthwhile endeavor—the spreading of cheer and goodwill to others. Additional experiments could test how degrees of procrastination (i.e., delaying a minor or a very important task) impact the dual-elicitation of guilt and pleasure, and subsequently impact enjoyment and online sharing behaviors.

Like all social science endeavors, the present study comes with a number of limitations. The survey did not use a random, representative sample of Internet users, and therefore the results are not necessarily generalizable to all Internet users or all fans of online cat-related media. In particular, most respondents in this sample were female and more work is needed to see if and why there might be gender differences in attraction to Internet cats. Additionally, the measures of emotional states used in this study were retrospective self-reports and are susceptible to forgetfulness and/or exaggeration. Experiments are needed to advance this line of work and demonstrate causality. Furthermore, the cross-sectional nature of this survey makes it impossible to definitively establish a causal link between consumption of Internet cat media and emotional states. Experimental work is needed to confirm mood management motivations for looking at online cat content as well as to test the effects of online cat media on Internet users' emotional states.

However, this initial study provides the groundwork for scholars interested in this Internet phenomenon. Future studies could also use sentiment analysis of comments posted on online cat-related media or psychophysiological measures taken during real-time viewing to see if these techniques provide similar results. In-depth interviews may provide rich context and nuanced insights as to why and to what effect Internet users view cat videos and photos.

## 5. Conclusion

Humans domesticated felines 10,000 years ago (Driscoll, Clutton-Brock, Kitchener, & O'Brien, 2009). Ever since, the domestic cat has been the subject of images and artwork and played various roles in culture, society, and media (Rogers, 2001). In the modern era of digital media, it is hard to deny that cats have clawed their way into the zeitgeist of the Internet. While the topic of online cat-related media consumption may seem, on the surface, a

lighthearted one for serious academic inquiry, the global popularity of such media and the historical roots of feline-focused media should encourage Internet, media, and psychology researchers to take note.

This study found that cat-related content is a popular form of online media with the potential to improve users' moods or to delay more important tasks. The results of this survey provide valuable insights as to why Internet users so frequently view online cat-related content, which users are more likely to enjoy such content, what emotional benefits and drawbacks are associated with this viewing, and the relationship between procrastination, guilt, and happiness in impacting enjoyment of entertainment media. Future work can build upon these initial results to test causal connections between emotional states and the effects of viewing Internet cats as well as test the use of online cat media as a potential low-cost intervention to improve emotional wellbeing. Meanwhile, millions of Internet users will be watching YouTube videos of Henri le Chat Noir, scrolling through BuzzFeed lists of the cutest cat posts on Instagram, and commenting on Lil BUB's Facebook photos.

## Acknowledgements

The author would like to thank Mike Bridavsky and Lil BUB for their generous assistance in recruiting participants, Suzannah Evans and Scott Myrick for thoughtful feedback on the survey instrument, and Nicole Martins for helpful comments on an earlier draft of this work.

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